

WRIA 54 Planning Unit

# WRIA 54 (Lower Spokane) Watershed Plan

August 2009



**TETRA TECH**

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**WRIA 54 Planning Unit  
WRIA 54 (LOWER SPOKANE) WATERSHED PLAN**

AUGUST 2009

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WRIA 54 Planning Unit

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*Project #135-3640026*



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# EXECUTIVE SUMMARY

## INTRODUCTION

The watershed plan for Water Resource Inventory Area (WRIA) 54, the watershed of the Lower Spokane River, provides a comprehensive review of water resources in the watershed and outlines strategies for future management. These strategies take the form of recommendations, obligations and position statements for the WRIA 54 Planning Unit, a working group of state and local governments, and organizational and private representatives. The Planning Unit developed the following mission statement for the watershed plan:

*The WRIA 54 Planning Unit will create a living watershed management plan providing implementation strategies to manage water resources while improving water quality. The plan will support economic well-being, and protect and enhance the environment through collaborative citizen, business and government partnerships.*

WRIA 54 covers 883 square miles in eastern Washington and includes all of the City of Airway Heights, as well as portions of the Cities of Spokane and Medical Lake. Three counties—Spokane, Stevens and Lincoln—occupy land in WRIA 54, as do Fairchild Air Force Base and much of the Spokane Indian Reservation. It is one of four WRIsAs that make up the Spokane River watershed:

- WRIA 54 (Lower Spokane)
- WRIA 57 (Middle Spokane)
- WRIA 55 (Little Spokane River)
- WRIA 56 (Hangman/Latah Creek).

The Spokane River flows westward through WRIA 54, encountering three dams—Nine Mile, Long Lake, and Little Falls—before reaching Lake Roosevelt near Fort Spokane. Numerous tributary streams drain from the high plateau to the south of the river (Deep, Coulee, Spring, Mill, Pitney, and Harker Creeks) and the highlands north of the river (Chamokane, Little Chamokane, Blue, Orzada, and Sand Creeks), but Chamokane and Little Chamokane Creeks are the only major tributaries within WRIA 54 that have a year-round surface water flow connection to the Spokane River.

The following sections summarize key findings and proposed strategies presented in the WRIA 54 Watershed Plan.

## WATER RIGHTS ADMINISTRATION

The ability to manage WRIA 54 water resources effectively is limited by uncertainties about how much water is allocated through water-right permits, certificates and claims. This is further complicated by a lack of complete knowledge regarding actual water use, and by groundwater and surface water being potentially over-allocated in the West Plains. The recommendations to address difficulties with water rights administration, in no priority order, are as follows:

- **Obligation**—Any action accepted voluntarily as an obligation by State and County government is binding. For other organizations that voluntarily accept obligations, the organization must implement the obligation if it has the resources to do so.
- **Recommendation**—Recommendations are not binding, but in volunteering to take on a recommendation, entities must consider the timelines and resources they will need.
- **Statement of Support/Position**—Statements of support or position are included where there is no specific implementable action, but the Planning Unit agreed to a formal statement for the Watershed Plan.

- **Recommendation WRA-1:** Recommend that the State legislature provide more staff and funding to the Washington Department of Ecology to process water rights and for compliance activities. The Planning Unit particularly encourages consideration of establishing a regional water master.
- **Recommendation WRA-2:** Regular updates from Ecology to the Planning Unit regarding water right activity in WRIA 54. The Planning Unit or its members may provide input to Ecology through the normal public comment periods associated with these actions.
- **Recommendation WRA-3:** Consider prioritizing hydrologic subbasins for Ecology to process water rights applications. Note that all subbasins in a priority area would need to be included and that Ecology has to follow state laws to process water rights in order of application date, but can do so within a subbasin or watershed.
- **Recommendation WRA-4:** Conservancy Boards in Stevens, Spokane and Lincoln Counties should develop and maintain a public database of willing water rights buyers and sellers within their counties. The Conservancy Boards will need to make statements that the extent and validity of water rights in the database are not guaranteed. (This is currently being implemented by the Stevens County Water Conservancy Board.)
- **Recommendation WRA-5:** Recommend that the Spokane Tribe develop a water code for the Spokane Tribe and Reservation, including fee lands.
- **Recommendation WRA-6:** Planning Unit will review, discuss, and recommend improvements to the relinquishment law.

## PROMOTING EFFICIENT USE OF WATER

Promoting efficient use of water—through conservation, reclamation and reuse—is a significant component of providing water for future needs. Water conservation and reclamation/reuse activities should be implemented regionally because of the cross-jurisdictional and marketing efficiencies in this approach. Several established programs are already in place to promote efficient use of water. The following recommendations build on these existing programs, presented in no priority order:

- **Recommendation WUE-1:** Coordinate water use efficiency and conservation measures in WRIA 54 through the existing Regional Water Conservation Collaboration and Spokane County Coordinated Water System Planning.
- **Recommendation WUE-2:** Recommend that local governments work toward improved water use efficiency in landscaping and other outdoor water uses.
- **Recommendation WUE-3:** Recommend that counties, cities and water purveyors develop and implement indoor and outdoor water conservation incentives.
- **Recommendation WUE-4:** Recommend that purveyors provide notice to the Planning Unit when they initiate water use efficiency/conservation goal setting.
- **Recommendation WUE-5:** Additional funding is needed to support implementation of water conservation and reclaimed water use.
- **Statement of Support WUE-6:** Where cost-effective and appropriate, support continued funding for County Conservation Districts and the U.S. Natural Resources Conservation Service (NRCS) work with agricultural irrigators to assess and improve water use efficiency.
- **Statement of Support WUE-7:** Where cost-effective and appropriate, support development of and coordinate with surrounding WRIsAs for use of reclaimed water.

## PROVIDING WATER FOR FUTURE NEEDS

Based on current zoning, water use could increase by as much as 57 percent by 2025. Water demand is expected to increase significantly for residential domestic and other municipal needs in two areas—the West Plains and along the Spokane River downstream from the City of Spokane (Lake Spokane urban growth area). Permit-exempt wells—the common term for legal small groundwater uses that are exempt from applying for and obtaining a water right permit or certificate—have the potential to strain water resources and impair other water users in areas with sensitive aquifer systems because limited assessments have been completed on their impact on water resources. The following are the recommendations for providing water for future water:

- **Recommendation WFN-1:** Consider a regional management and coordination organization for water supply on the West Plains. This organization should encourage improvement of connectivity between water systems, as allowed by cost and water right constraints.
- **Recommendation WFN-2:** Complete planning for water usage on the reservation and improvements needed for the Spokane Tribe’s water systems.
- **Recommendation WFN-3:** Recommend formation of a Chamokane Basin Watershed Council to resolve water-related issues in the Chamokane Basin. This Watershed Council may consist of Chamokane Basin residents, Stevens County, the Spokane Tribe, WRIA 54 Planning Unit members and others.
- **Recommendation WFN-4:** Local governments, the Tribe and water purveyors should assess subarea water supply needs, identify appropriate measures from a range of options, and facilitate options that are economically viable and provide long-term sustainability.
- **Recommendation WFN-5:** Establish a program to collect data and evaluate where permit-exempt wells are a concern. Develop management options for problem areas. Affected local governments and Ecology should provide technical support and funding; counties, purveyors, Ecology and Regional Health District should coordinate.
- **Recommendation WFN-6:** The WRIA 54 Planning Unit, Ecology, counties, and the Stevens, Spokane and Lincoln County Water Conservancy Boards should explore water rights trusts, banking, water leasing and acquisition.
- **Recommendation WFN-7:** The state Legislature should amend current law to allow water banking throughout the state.

## WATER STORAGE OPPORTUNITIES

Water storage projects are a significant component of the strategies included in this watershed plan for meeting water demand. Water storage projects are based on the principle that stored water from the winter and spring can benefit water needs during the dry summer months. Historically, water storage in open reservoirs has been the predominant type of storage project. Many reservoir projects still exist, and from an engineering point of view they are the most efficient way to store a large volume of water. However, environmental concerns have reduced the ease of constructing new dam and reservoir projects, leading water-resource professionals to seek alternatives that have less environmental impact. Three projects are recommended for continued evaluation:

- **Recommendation WS-1:** Evaluate aquifer storage and recovery and enhanced recharge for the West Plains, considering reclaimed water as a priority source but not excluding other water sources.
- **Recommendation WS-2:** Promote the connectivity of the West Plains area so that water can be efficiently distributed where it is needed. Increased connectivity could consist of building

more infrastructure for intermittent buying and selling of water or for permanent water rights transfers.

- **Recommendation WS-3:** Promote and support water storage projects initiated by individual entities throughout the watershed to meet instream flows and to provide water for residents, business and projected growth in Spokane, Lincoln, and Stevens Counties and the Spokane Indian Reservation. Several projects have been identified in the Chamokane Creek watershed.

## INTEGRATING LAND USE AND WATER SUPPLY PLANNING

Current land use and future land use changes have the potential to impact the Lower Spokane River Watershed in a number of ways. These include changes in the timing and volume of stream flows, changes in groundwater levels and changes in surface water and groundwater quality. The Planning Unit believes that processes could be modified to improve the connection between land use planning and water system planning so that future land uses and available water supply are better coordinated. The following recommendations address the need for better connection between long-range land use planning and regulation and water availability:

- **Statement of Support LU-1:** The Washington Utilities Coordinating Council has initiated a review of the Coordinated Water System Plan and determined not to conduct a complete update at this time. If an update is initiated, the Planning Unit supports addressing such issues as: use of consistent population estimates; consistency with approved Comprehensive Plans; improvements to the way commitments to provide water are managed for plats that may not develop for several years; planning to provide water for current and future needs on the West Plains; evaluation of transferring water from the Spokane Valley-Rathdrum Prairie (SVRP) Aquifer to the West Plains; sharing, leasing and acquisition of water rights; sharing of water system plans with adjacent purveyors; water-right transfers; connectivity; infrastructure improvements; and conservation.
- **Recommendation LU-2:** Water system plans and other local land use plans should be consistent.
- **Recommendation LU-3:** Entities involved in long-range land use planning within WRIA 54 should evaluate the “carrying capacity” of land related to available or proposed water supply to support responsible development consistent with comprehensive planning. If water is not available, there needs to be a plan to provide water to the area. Funding assistance will be necessary to implement this recommendation.
- **Recommendation LU-4:** The state should provide technical support and funding to counties and cities to identify areas of strained water resources.
- **Recommendation LU-5:** Counties and cities should identify and consider adding areas of strained water resources to comprehensive land use plans and development regulations (through, for example, water supply overlay zones).
- **Recommendation LU-6:** Recommend that counties, purveyors, Ecology, and interested Planning Unit members collaborate to develop flexible local guidelines for demonstration of water supply availability and sustainability. Methods may include but are not limited to hydrogeologic investigation and characterization reports.
- **Recommendation LU-7:** Recommend that Ecology provide technical assistance and funding for ongoing support in the implementation of guidelines developed in Recommendation LU-6 to demonstrate sufficient water availability and sustainability for proposed and existing uses for Comprehensive Plan amendments and associated zoning changes.

- **Recommendation LU-8:** Recommend that Spokane County require applicants to demonstrate sufficient water availability and sustainability for proposed and existing uses for Comprehensive Plan amendments and associated zoning changes.
- **Recommendation LU-9:** Pursue funding to conduct more regional water supply availability studies through WRIA 54 Watershed Plan implementation.
- **Recommendation LU-10:** Spokane County should identify barriers and plan for the implementation of the Comprehensive Plan goals and policies discussed above, which are aimed at securing adequate water quantity for the residents of Spokane County. This will require development of methodologies to accurately evaluate the “carrying capacity” of land related to water supply, and application of these methodologies to ensure responsible development consistent with the Comprehensive Plan. Spokane County and Ecology could collaborate to develop guidelines for demonstration of water supply availability and sustainability. Methods may include but are not limited to hydrogeologic investigation and characterization reports.
- **Recommendation LU-11:** The Planning Unit recommends an evaluation of methodologies and the review process used to determine water availability for proposed development projects, in order to better determine that permitted projects have a viable water supply.
- **Recommendation LU-12:** Recommend that Spokane County add the following condition for the approval of a final plat: “Prior to filing the final plat, the applicant will demonstrate provision of adequate potable water supply by providing one of the following:
  - A letter from a water purveyor stating they will serve the proposed subdivision. If a plat is not developed for a specified amount of time, this commitment may need to be reconfirmed by the water purveyor.
  - A copy of a water right permit from the Department of Ecology with adequate quantity to serve the proposed subdivision;
  - A plan to supply the proposed subdivision within the groundwater exemption specified in Revised Code of Washington (RCW) 90.54.050 that complies with the 1997 Attorney General Opinion, Washington State Supreme Court Decision *Department of Ecology vs. Campbell and Gwinn, LLC* and Washington State Department of Health guidelines for residential water use.”
- **Recommendation LU-13:** Recommend that Spokane County add one or more of the following to the requirements for exemption from the subdivision ordinance:
  - Demonstration of water supply
  - Only three parcels can be created
  - Parcels must be 40 acres or greater
  - Public notice of proposed land division.
- **Statement of Support LU-14:** The Planning Unit recommends support for sustainable agriculture (including forestry).
- **Statement of Support LU-15:** Support efforts to provide public access to water-related recreation areas.
- **Recommendation LU-16:** A study is recommended to evaluate the land use impacts of beavers on Lake Spokane and to consider relocation of beavers to the properties of willing landowners. This could be coordinated with the Lands Council project to evaluate the role of beavers in providing water storage.



## INSTREAM FLOW

The Department of Ecology uses the term “instream flow” to describe a water right for a stream or river that ensures that stream flow remains in the river to support instream water needs, usually focused on fish, but also supporting aesthetic, recreational and other instream benefits. Ecology has established instream flows for many rivers and streams in the state, including the Little Spokane River. Chamokane Creek has an established instream flow, set through a federal adjudication. There is no instream flow set for the main stem Spokane River or any other WRIA 54 tributaries. The following are the watershed plan’s proposed strategies related to instream flow:

- **Statement of Position ISF-1:** The Spokane River Instream Flow Work Group’s memorandum documents the WRIA 54 Planning Unit’s position regarding instream flow for the main stem Spokane River above Nine Mile Dam, with the one addition of requesting that the option of a water right reservation be considered from the “West Arm” of the SVRP Aquifer.

When Ecology undertakes setting an instream flow for the Spokane River, the WRIA 54 Planning Unit recommends considering the option of a water right reservation from the “West Arm” of the SVRP Aquifer. Prioritization of water uses for future allocation within WRIA 54 could be applied if a reservation for future water use were included in an instream flow rule, by reserving water for certain purposes such as, in no order of priority, environmental enhancement, agriculture, domestic or municipal supply, stock watering or commercial and industrial purposes. The Planning Unit understands that the state caucus will not currently support a reservation of water for municipal water supply due to existing inchoate water rights in the Spokane River watershed that can meet future water demand. Other concerns include declining summer low flows, water quality issues, and impacts on senior water right holders.

Prior to Ecology undertaking rule-making for this reach, the Planning Unit would like a broader community-based process that incorporates the flexibility needed to meet the varied water needs of the region and presents a complete set of the information that was developed through the Watershed planning process. This is likely to require a minimum two-year effort. If Ecology is prepared to support this effort, the Planning Unit urges Ecology to initiate this work as soon as possible.

- **Statement of Position ISF-2:** The Planning Unit chose not to recommend a control point at Little Falls at this time.
- **Recommendation ISF-3:** The Planning Unit recommends a phased pursuit of instream flow rules for tributary subbasins. A phased approach is recommended, such that the effort could be discontinued if it is found that development of a rule does not provide water management benefits for the tributary basin.

## WATER QUALITY

Water quality problems in WRIA 54 include low dissolved oxygen over the entire length of the Spokane River, elevated metals concentrations in Spokane River sediment, aquatic weed growth in Lake Spokane, elevated PCB levels in fish tissue, and possible groundwater contamination on the West Plains. The following recommendation address these issues, presented in no priority order:

- **Recommendation WQ-1:** Implement the monitoring described in the *Quality Assurance Project Plan for Nine Mile Area Non-Point Source Monitoring Study: Water Quality Monitoring Study* (Tetra Tech, 2009) and proceed with a study to monitor and assess non-

point sources from the surface water and groundwater that drain directly to Lake Spokane. Implementation is recommended as an early action or Phase 4 action.

- **Statement of Support WQ-2:** Support monitoring efforts undertaken by individual entities, regional groups or the Planning Unit. Current applicable monitoring programs include new Ecology ambient surface water quality monitoring stations that do not currently have secure long-term funding, and City of Spokane sediment oxygen demand sampling in Lake Spokane.
- **Obligation WQ-3:** Ecology will keep the Planning Unit informed about progress on all total maximum daily loads (water quality improvement plans) in WRIA 54, either through verbal updates at Planning Unit meetings or email updates to those on the email distribution list.
- **Recommendation WQ-4:** Implement the monitoring program described in the *Quality Assurance Project Plan for the Paleochannel Water Quality Monitoring Study* (Tetra Tech and GeoEngineers, March 2009).
- **Statement of Support WQ-5:** The Planning Unit will support non-point source assessments, monitoring, and reduction efforts, including non-point source reduction efforts recommended in the Chamokane Creek Watershed Plan.
- **Statement of Position WQ-6:** The Planning Unit recommends implementation of existing city and county stormwater management plans and development of stormwater programs in the WRIA where none currently exists. The Planning Unit emphasizes the following elements in managing stormwater:
  - Improve coordination between land use regulators (counties, cities and the Washington Department of Natural Resources) and Ecology regarding stormwater permits so that land use regulators have improved understanding of when this type of permitting is required.
  - Encourage counties and cities to develop land clearing and grading incentives or ordinances such as best management practices based on NRCS FOTOG and the *Eastern Washington Stormwater Manual*.
  - Encourage counties and cities to consider incentives for low impact development that incorporates measures such as pervious surfaces and on-site stormwater treatment.
  - Encourage counties to consider land use policies that preserve vegetation in natural (undeveloped) drainages.
  - Recommend that that cities and counties, the Washington Department of Health, Ecology and health districts address inadequate wastewater and stormwater systems.
- **Recommendation WQ-7:** The Planning Unit recommends that local governments retain qualified wetlands scientists to review wetland delineations and administer the wetland portion of critical areas ordinances.

## TECHNICAL INFORMATION BASE

Technical information and studies are needed to adequately resolve many of the water quantity, instream flow, and water quality issues identified in this watershed plan. These data needs include monitoring and analytical studies. The Planning Unit has selected the following projects to recommend for implementation:

- **Recommendation TI-1:** Basalt Aquifer Groundwater Study—The Columbia River Basalt Group aquifers that underlie the West Plains area are used for water supply. Groundwater levels have declined in some areas, indicating the groundwater resource is potentially

strained. A better understanding of the aquifers in the West Plains area would be beneficial to understand how this resource can be used in a sustainable way.

- **Recommendation TI-2:** Identification of Areas of Strained Water Resources—Identifying potential and existing areas of strained water resources, where water supply is not currently available to meet growing water demand for out-of-stream water needs, is a major data need for WRIA 54. The Planning Unit supports development of methodologies to accurately identify areas of strained water resources, and development of tools to manage land use needs associated with these areas.
- **Recommendation TI-3:** Develop water supply and demand forecast for prioritized areas.
- **Recommendation TI-4:** Stream flow monitoring for WRIA 54 tributaries—Establish stream flow monitoring program for WRIA 54 tributaries. Monitoring locations would be determined based on available funding, labor and equipment resources and the priorities as determined by the Planning Unit at the time of initiating the monitoring program.
- **Recommendation TI-5:** Evaluate feasibility of establishing a stream flow gauge below Nine Mile Dam. Such a gage was identified as a need by the Spokane River Instream Flow Work Group so that Spokane River flow, including discharge from the SVRP Aquifer downstream from the ‘at Spokane’ gage, could be measured directly rather than estimated.
- **Recommendation TI-6:** Recommend local governments and conservation districts seek to increase funding for water and natural resources staff, in part to carry forth Plan implementation beyond the Phase 4 grant funding. Additional staff and/or funding support is needed to implement water resources management projects and programs, and to conduct and supervise technical studies needed for water management.
- **Recommendation TI-7:** Recommend that the Legislature support Ecology’s ambient groundwater monitoring program and recommend that Ecology consider the West Plains for an ambient groundwater monitoring program.
- **Statement of Support TI-8:** Support Collection of Water Resources Data—Continued data collection is essential to building the knowledge base necessary for informed water resources management. Data collection efforts may be accomplished by individual entities, the Planning Unit, and volunteer efforts. All data collected through Planning Unit supported efforts will be available to Planning Unit members.

## WATER RESOURCES EDUCATION

Water resources education programs for WRIA 54 should be well planned and targeted to specific audiences. Each program should be connected to the mission of the entity responsible for implementing it. All existing and new programs designed to address water resources issues should consider existing efforts. The following recommendations and statements of support are not listed in any priority order:

- **Statement of Support EDU-1:** Water resources education programs in WRIA 54 should contribute information to and support E3 Washington.
- **Recommendation EDU-2:** Conduct a water resource education needs assessment in WRIA 54.
- **Statement of Support EDU-3:** Include funding for education and outreach (staff and materials) within grant applications where applicable.
- **Recommendation EDU-4:** The legislature should provide additional funding for education and outreach staff, such as for conservation districts, for efforts within WRIA 54.

- **Statement of Support EDU-5:** Ecology should make education and outreach a priority.
- **Statement of Support EDU-6:** Encourage local governments to hire or retain education and outreach staff.

## IMPLEMENTATION

Following Planning Unit approval, this Watershed Plan will be provided to the Boards of County Commissioners for Spokane County, Stevens County and Lincoln County for adoption. These legislative authorities are required to hold legislative sessions to either adopt the Plan or return it to the Planning Unit with suggested revisions. Following approval and adoption of the Watershed Plan, the Planning Unit can apply to Ecology for funding to implement its recommendations. Implementation is referred to as Phase 4. The Phase 3 Planning Unit anticipates that it will continue as the governing body for implementation during at least the first two years of implementation.

- **Obligation IMP-1:** Develop a framework for the future structure of the WRIA 54 Planning Unit to guide implementation and water resources management during and beyond Phase 4.
- **Obligation IMP-2:** The Planning Unit recommends that the Memorandum of Agreement that guides the Planning Unit's Phase 3 activities be amended to include Phase 4.
- **Obligation IMP-3:** The Planning Unit agreed that memoranda of understanding or memoranda of agreement between the implementing entities and Ecology should be developed in the first year of Phase 4 to guide management of WRIA 54 water resources beyond Phase 4. Because Ecology does not represent other state agencies in Phase 4 as it does in Phase 3, the Planning Unit may also need agreements with other state agencies. The Planning Unit acknowledged that the agreements should have a broad scope and provide over-arching guidance to address water resources issues across jurisdictional boundaries.
- **Recommendation IMP-4:** The Planning unit recommends updating the Watershed Plan and Detailed Implementation Plan (DIP) in year four of implementation (2012-2013) and then every five years following this first update. For efficiencies, the Planning Unit recommends that the DIP be updated in conjunction with the Watershed Plan. Although it would be convenient for Watershed Plan and DIP updates to coincide with planning updates under the state Growth Management Act, this would not be practical since WRIA 54 includes three counties (i.e., Spokane, Stevens and Lincoln Counties) that have different GMA planning timelines.



WRIA 54 Planning Unit  
**WRIA 54 (Lower Spokane) Watershed Plan**

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**PART 1.**  
**INTRODUCTION AND BACKGROUND**

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# CHAPTER 1. INTRODUCTION

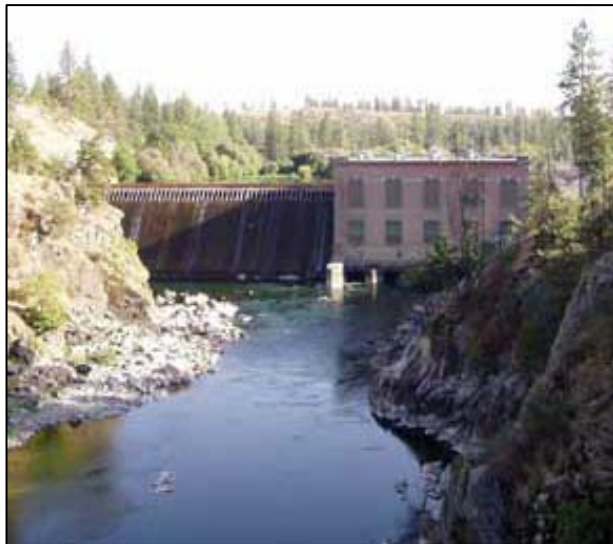
Water Resource Inventory Area (WRIA) 54, the watershed of the Lower Spokane River, is one of 62 major watersheds in Washington State delineated for planning purposes under the state’s Water Resources Management Program. This watershed plan, developed by a working group of state and local governments, organizational and private representatives called the WRIA 54 Planning Unit, provides a comprehensive review of water resources in the watershed and outlines strategies (in the form of recommendations, obligations, etc.) for future management to ensure the ongoing sufficiency of water quantity, water quality and instream flows.



## STUDY AREA OVERVIEW

WRIA 54 covers 883 square miles in eastern Washington and includes all of the City of Airway Heights, as well as portions of the Cities of Spokane and Medical Lake. Three counties—Spokane, Stevens and Lincoln—occupy land in WRIA 54, as do Fairchild Air Force Base and much of the Spokane Indian Reservation (see Figure 1-1).

The Spokane River flows westward through WRIA 54, encountering three dams—Nine Mile, Long Lake, and Little Falls—before reaching Lake Roosevelt near Fort Spokane. Because of the dams, much of this section of the Spokane River is more lake-like than river-like. Numerous tributary streams drain from the high plateau to the south of the river (Deep, Coulee, Spring, Mill, Pitney, and Harker Creeks) and the highlands north of the river (Chamokane, Little Chamokane, Blue, Orzada, and Sand Creeks), but



Chamokane and Little Chamokane Creeks are the only major tributaries within WRIA 54 that have a year-round surface water flow connection to the Spokane River. Groundwater is an important element of water resources in WRIA 54, although it varies significantly and is unlikely to conform to the WRIA 54 watershed boundaries.

WRIA 54 is bordered by the Middle Lake Roosevelt Watershed (WRIA 58) and the Colville Watershed (WRIA 59) to the north, the Little Spokane Watershed (WRIA 55) and the Middle Spokane Watershed (WRIA 57) to the east, the Hangman Watershed (WRIA 56), the Palouse Watershed (WRIA 34), and the Upper Crab/Wilson Watershed (WRIA 43) to the south, and the Lower Lake Roosevelt Watershed (WRIA 53) to the west.

## WATERSHED PLANNING OVERVIEW

The 1998 Washington State legislature passed the Watershed Planning Act (Ch. 90.82 RCW), to set a framework for developing local solutions to watershed issues. The law provides a process to allow state, local, federal, and tribal governments, as well as citizens, to join together to provide input concerning their goals and objectives for water resource management and development. These planning efforts must include an assessment of water supply and use and recommend long-term strategies to provide water in sufficient quantities for a wide range of needs. Instream flows, water quality, and habitat may be addressed as optional elements.



Because many of the 62 WRIsAs delineated by the Washington Department of Ecology contain multiple jurisdictions, interagency cooperation is needed for WRIA planning. The Watershed Planning Act enables local governments, tribes, citizens, and stakeholders to establish a formal planning group to develop a watershed plan that will meet the objectives of a broad range of interests. The Watershed Planning Act is administered by Ecology through grant funding according to the following planning phases:

- **Phase 1**—Organization of the Planning Unit
- **Phase 2**—Conduct Watershed Assessment
- **Phase 3**—Develop a Watershed Plan
- **Phase 4**—Plan Implementation.

## WRIA 54 PLANNING PROCESS

The Spokane River watershed is divided into four WRIsAs:

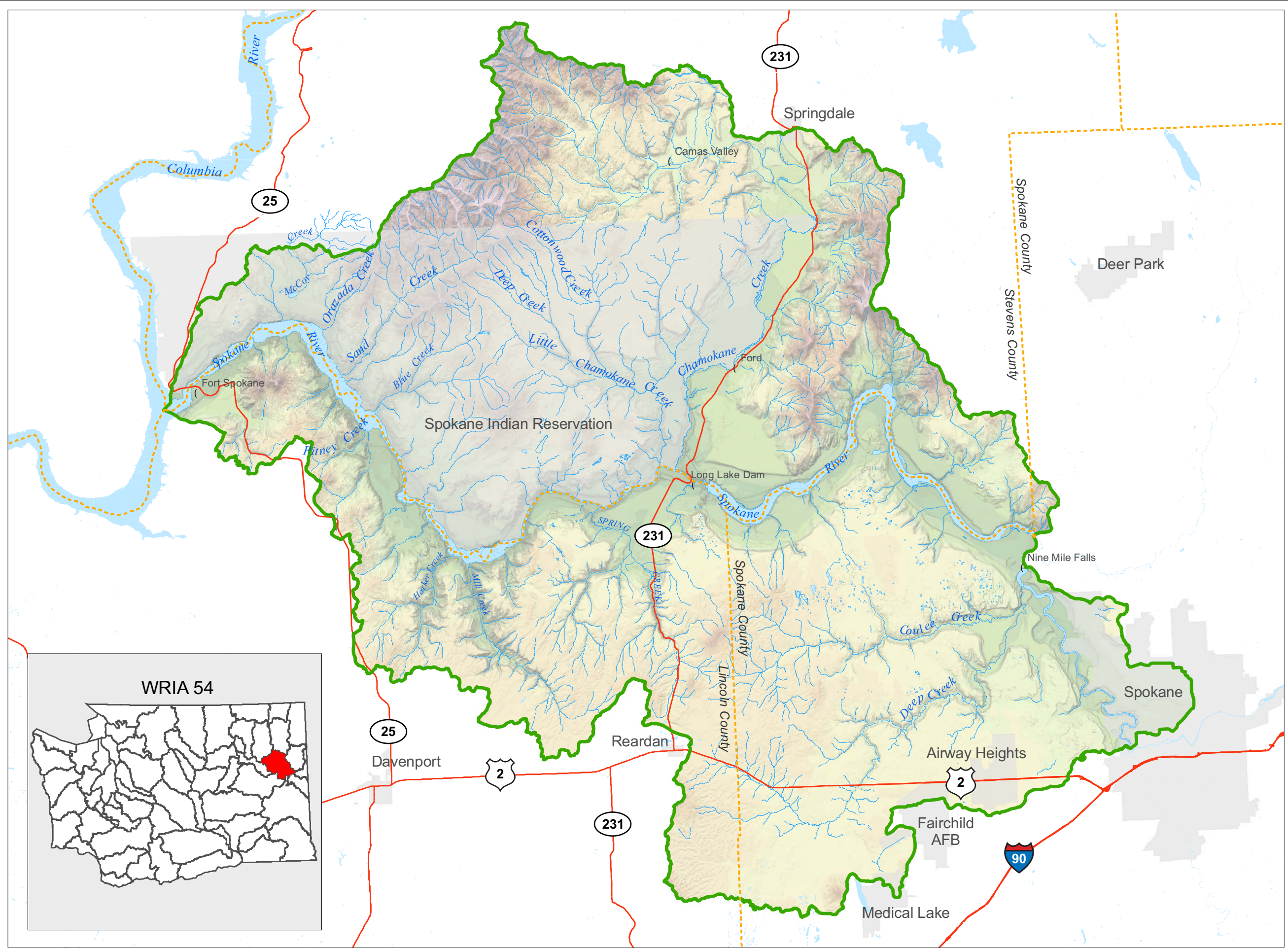
- WRIA 54 (Lower Spokane)—Latah Creek downstream to Lake Roosevelt
- WRIA 57 (Middle Spokane)—Spokane River from the Idaho border downstream to Latah Creek
- WRIA 55 (Little Spokane River)—A major Spokane River tributary that enters from the north just downstream from Nine Mile Falls
- WRIA 56 (Hangman)—Latah Creek watershed, a major Spokane River tributary from the south, entering the Spokane River approximately one mile west of downtown Spokane.

WRIsAs 55, 56, and 57 all have adopted watershed plans, with WRIsAs 55 and 57 having developed a joint plan. This *WRIA 54 Watershed Plan* completes the suite of Watershed Plans for the Spokane River and provides a framework for managing the river's water resources in the future. In 2003, Spokane County organized the required initiating agencies within WRIA 54 into a formal Planning Unit:

- All counties within WRIA 54 (Spokane County, Stevens County, and Lincoln County)
- Cities and towns within WRIA 54 (Spokane, Medical Lake, and Airway Heights)
- Military bases within WRIA 54 (Fairchild Air Force Base)
- Tribes with reservation land in WRIA 54 (Spokane Tribe of Indians).

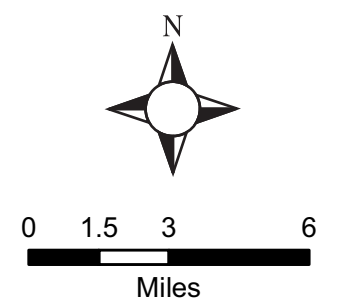
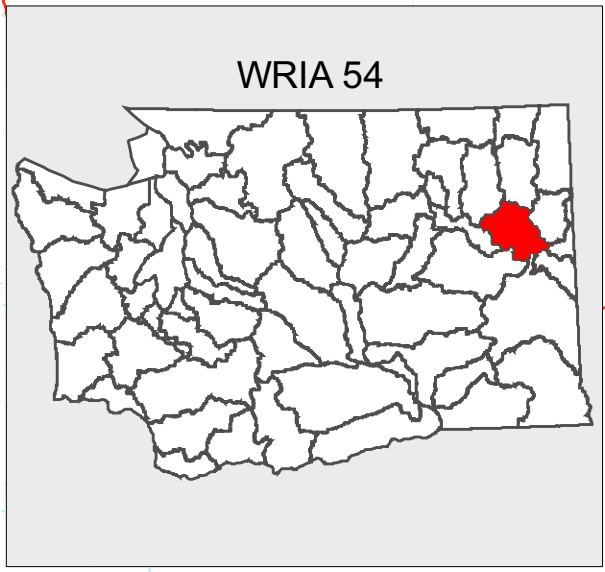


Figure 1-1  
 WRIA 54  
 General Site Map



- Legend**
- Major Road
  - County Boundary
  - Stream
  - WRIA54 Boundary
  - Unincorporated Area
  - Jurisdiction
  - Waterbody

*Data Sources:*  
 Streets, Waterbodies, Streams,  
 County Boundary, Spokane Indian  
 Reservation - Washington DNR  
 Juristictions - County Data  
 WRIA Boundary - Washington DOE  
 Populated Places - USGS



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Map Updated 10/13/2008



These governments were vital for the planning process as a whole, for developing the scope of work, and for the development and implementation of the plan's recommendations. As lead agency, Spokane County applied for and received a Phase 1 organizational grant to initiate watershed planning for WRIA 54. Spokane County's responsibilities included the administration and facilitation of the grant.

## Planning Elements

The initiating agencies developed and signed on to a Memorandum of Understanding which identified plan elements and basic operational protocols. The initiating agencies elected to address the following elements:

- **Water Quantity** (Required)—This element involves assessing water supply and use in the watershed management area, and developing strategies for future use.
- **Water Quality** (Optional)—This element examines which water quality standards are not being met, evaluates the degree and causes of violations, and develops recommendations for monitoring and pollutant load limits.
- **Instream Flow** (Optional)—This element investigates the hydrological requirements of instream flow uses in the watershed.



## The Planning Unit

To establish a broad-based planning unit, the initiating agencies compiled a list of potential members representing a diverse group of interests: private citizens committed to the watershed planning process; property owners; property owners associations; agricultural groups; businesses; environmental groups; stakeholder organizations; the initiating agencies themselves; other local agencies; state and federal regulatory agencies; and special districts. Table 1-1 lists the WRIA 54 Planning Unit members.

The WRIA 54 Planning Unit established operational procedures to guide and encourage efficient meetings, support Planning Unit decision-making, and provide a methodical course of action for conflict resolution. The Planning Unit met monthly at alternating meeting sites and times. Daytime meetings were held in Airway Heights, and evening meetings were held at Lakeside High School in Nine Mile Falls. All meetings were advertised to interested parties and all meetings were open to the public. Meeting summaries were distributed to a broad email mailing list, and posted on the Spokane County project website.

**TABLE 1-1.  
WRIA 54 PLANNING UNIT MEMBERSHIP**

Organization or Individual	Primary Representative	Alternates
<b>Initiating Governments / Implementing Governments</b>		
Spokane County	Rob Lindsay	Mike Hermanson, Reanette Boese
Lincoln County	Jim DeGraffenreid	
Stevens County	Merrill Ott	Tony Delgado, Clay White
City of Spokane	Lloyd Brewer	Bill Rickard, Harry McLean, Mike Coster
Spokane Tribe	Brian Crossley	Chris Butler, Paul Jurun
WA Department of Ecology	Sara Hunt	Jamie Short, Brian Farmer
Stevens County PUD #1	Dick Price	Larry Isaak, Wade Carpenter, Charisse Willis
<b>Municipal Governments and Municipal Water Suppliers</b>		
Fairchild Air Force Base	William Shelton	
Indian Village Estates Water Association	David Luders	
City of Airway Heights	Bryan St. Clair	Don Skillingstad, John Hyatt, Thomas Lien, Gary Pederson, Albert Tripp, Cindy Reddekopp
<b>Agricultural</b>		
Stevens County Conservation District	Charlie Kessler	Dean Hellie
Spokane County Conservation District	Charlie Peterson	Rick Noll
Stevens County Farm Bureau	Wes McCart	
<b>Business, Commercial and Industrial</b>		
Avista	Hank Nelson	Bruce Howard, Tim Vore
Spokane Assoc of Realtors	Jeanne Barnes	Rob Higgins, Sara Orange
Spokane Homebuilders	Edie Streicher	
Spokane Regional Chamber of Commerce	Erin Vincent	
<b>Environmental, Recreation and Public Interest Groups</b>		
Riverside State Park Advisory	Lynn Wells	
Spokane Flyfishers	Judy Kaufman	
Lands Council	Bart Haggin	
Lake Spokane Park Homeowners Assoc.	Jeanne Barnes	Lester Barnes
Northwest Whitewater Assoc. / Spokane Canoe and Kayak Club	John Patrouch	Vic Castleberry, Robbi Castleberry, Terry Miller, Paul Delany
Lake Spokane Protection Assoc.	Fran Bessermin	Galen Buterbaugh, Ann Fackenthal, Bill / Gail Madison
<b>Civic Promotion Groups</b>		
Palisades Neighborhood	Jerry Warner	Craig Volosing

<b>TABLE 1-1 (continued). WRIA 54 PLANNING UNIT MEMBERSHIP</b>		
Organization or Individual	Primary Representative	Alternates
<b>General Citizen / Landowner</b>		
Landowner	Doris Dietrich	
Citizen	Bea Lackaff	
Landowner	Jay Landreth	
Landowner	Wes McCart	
Citizen	Stan Miller	
Landowner	Bruce Smith	Linda Smith
Citizen??	Joayn Taylor	
Landowner	Guy Tillman	
Landowner	Craig Volosing	
<b>State Agencies Represented by the WA State Watershed Lead (non-voting)</b>		
WA Department of Natural Resources	Bob Derkey	Mike Hamilton
WA Department of Fish & Wildlife	Sandy Dotts	Mark Wachtel, Jason McLellan
<b>Advisory Boards (non-voting)</b>		
Eastern WA University	Linda McCollum	
Stevens County Water Conservancy Board	Wes McCart	
Spokane County Water Conservancy Board	Craig Schwyn	
Spokane County Planning Commission	Dave Jones	
Spokane Aquifer Joint Board	Ty Wick	

## Public Outreach

Throughout the planning process, Spokane County in its lead agency role, and the Planning Unit have promoted public awareness and participation in the WRIA 54 Watershed Planning effort:

- Early in the process, two public meetings were held to gather input and volunteers for Planning Unit membership and scope for the data compilation and assessment work.
- After the planning process had commenced, Spokane County staff made presentations to the stakeholder groups listed below. The presentations had three goals; to educate the public on what is happening with watershed planning in the Lower Spokane River watershed, to recruit volunteers to be Planning Unit members, and to gather water resource issues pertinent to WRIA 54.
  - Washington Association of Wheat Growers
  - Spokane Homebuilders Association
  - Association of Realtors
  - Spokane Fly Fishing Club
  - Spokane Canoe and Kayak Club

- The Lands Council
  - Friends of the Centennial Trail
  - Riverside State Park Advisory
  - Inland Northwest Wildlife Council
  - Spokane Area Chamber of Commerce
  - West Plains Chamber of Com
  - League of Women Voters
  - Palisades Neighborhood Group
  - Suncrest Garden Club
- Special public meetings were held to present the results of the Phase 2 Level 1 Technical Assessment, Instream Flow Study, and Multipurpose Water Storage Assessment.
  - In addition to regular Planning Unit communication, a letter was sent to all stakeholder groups identified during Phase 1 and 2 to notify them that the Planning Unit was beginning Phase III and encouraged them to participate in the development of the watershed plan.
  - In addition to public notice and hearing requirements specified in RCW 90.82.130 for adoption of the WRIA 54 Watershed Plan, Planning Unit members are encouraged to communicate the relevant portions of the watershed plan to the stakeholder group(s) they represent. As lead agency, Spokane County will provide supporting materials, such as a power point presentation summarizing the plan, as needed. It has been the lead agency's experience that a general public meeting to address the watershed plan in its entirety is not the most effective public outreach tool, and communication to a group from one of its members about topics relevant and of interest is much more effective.

## **Phase 2 Assessments**

The WRIA 54 Phase 2 consisted of compiling existing water resources information, conducting supplemental studies, and identifying data gaps. The following assessments were conducted:

- The Phase 2 Level 1 Assessment pulled together available water resources data including water rights, water use, water quantity and future water demand.
- The Supplemental Water Quality Assessment pulled together available water quality data.
- The Quality Assurance Project Plans are monitoring plans for the paleochannel and Nine Mile areas of WRIA 54.
- The Instream Flow Study is a technical field and modeling study to identify instream flow habitat needs.
- The Multipurpose Water Storage Assessment is a survey of water storage opportunities in WRIA 54.

## **Phase 3 Watershed Plan Development**

Many WRIA 54 Planning Unit members had previous experience with watershed planning. This collective experience guided the approach to the WRIA 54 planning process. To focus on key issues, the Planning Unit formed work groups that met at regular intervals. These work groups tackled major issue categories: water management, land use, water quality, instream flow, technical information, and education. For each category, work groups defined their scope, developed goals, identified specific issues,



considered available data and options, and articulated preferred solutions and recommendations. Work group members then reported their findings to the Planning Unit as a whole. After the work groups completed their individual efforts, their products were consolidated into the technical issue chapters contained in this document.

The WRIA 54 Watershed Plan contains *obligations, recommendations, statements of support/position, and actions to consider in implementation*. Each item is labeled as to its classification; the meaning of these classifications (also discussed in Chapter 13) is the following:

- **Obligation:** Any action accepted voluntarily as an obligation by State and County government is binding. For other organizations that voluntarily accept obligations, the organization must implement the obligation if it has the resources to do so.
- **Recommendation:** Recommendations are not binding, however by volunteering to take on a recommendation as a lead or supporting entity, those entities must consider the timelines and resources they may need to implement the recommendation.
- **Statements of Support/Position:** Statements of Support or Position are included for items where there is no specific implementable action, but the Planning Unit agreed to a formal statement for the Watershed Plan. These do not indicate a lower priority or emphasis for these items, but rather apply to situations where the Planning Unit views itself in a more reactive role to projects/ideas spearheaded by other entities (who may also be Planning Unit members). An example of this is Statement of Support TI-8 (Support Collection of Water Resources Data) where the Planning Unit encourages individual entities to undertake monitoring in WRIA 54.
- **Action to Consider in Implementation:** These items are listed under many recommendations in the Watershed Plan text, but are not listed in the implementation matrix (Table 13-1). These items are ideas and concepts discussed by the Planning Unit (usually in work group sessions) as potential implementation actions. They are not binding in any way, but rather represent some of the discussion that occurred regarding specific actions that could be considered in implementation. The Planning Unit chose to include these in the Watershed Plan so that individuals tasked with implementing the Watershed Plan in the future would have the benefit of seeing what kinds of actions were discussed by those developing the Watershed Plan. These actions may or may not be considered in Phase 4.

## MISSION STATEMENT AND GOALS

The following mission statement was developed by the WRIA 54 Planning Unit:

*The WRIA 54 Planning Unit will create a living watershed management plan providing implementation strategies to manage water resources while improving water quality. The plan will support economic well-being, and, protect and enhance the environment through collaborative citizen, business, and government partnerships.*

Goals are visions for the future of the watershed and incorporate broad ideals that are often not possible to quantify. The following goals for WRIA 54 were identified, but not prioritized:



- Water Management
  - Balance the needs of instream and out of stream uses.
  - Strive for water availability in the future to protect quality of life, a healthy economy, and a healthy environment.
  - Promote sustainable use of water resources.
  - Strive for realistic laws and regulations that support sustainable management of water resources.
  - Coordinate water availability and areas of development.
  - Promote implementation of water storage projects that will provide water for both instream and out-of-stream needs.
  - Encourage, perform and coordinate studies to better understand water resources.
- Land Use
  - Strive for consistency and coordination between the WRIA 54 Watershed Plan and local land use plans and development regulations.
  - Coordinate water availability and areas of development.
  - Strive for development that results in sustainable land use.
  - Support property owners' rights, including legal access to water.
  - Support public access to water for recreation.
- Water Quality
  - The WRIA 54 Watershed Plan will identify and address water quality issues within WRIA 54, recognizing that select issues and needs are currently being addressed through separate programs/processes.
  - The WRIA 54 Planning Unit will coordinate with separate ongoing programs and processes that relate to water quality.
- Technical Information
  - Address data gaps that are critical to implementing watershed plan recommendations.
  - Prioritize technical data needs. Prioritization is needed to manage workload and will reveal overlapping needs.
  - As issues and data gaps are prioritized, these priorities may influence other entities' projects and focus areas. Funding may also be sought for prioritized projects.
- Water Resources Education
  - Raise public awareness of water resources issues in WRIA 54.
  - Support WRIA 54 Watershed Plan recommendations.
  - Raise public awareness of how the actions of individuals affect the watershed and encourage citizens to change their behavior related to watershed issues.
  - Support and collaborate with education and outreach programs.
  - Create a mechanism to educate elected officials about watershed issues and options and to support informed decisions.

## RELATIONSHIP TO OTHER PLANS AND PROCESSES

The WRIA 54 Watershed Plan is just one of many water and natural resource-focused activities that are ongoing in the greater Spokane River watershed. Table 1-2 summarizes major planning activities conducted in areas surrounding WRIA 54 and their significance for the WRIA 54 Watershed Plan.



**TABLE 1-2.  
PLANNING ACTIVITIES CONDUCTED IN SURROUNDING AREAS**

Natural Resource-Based Program or Plan	Description	Entity Lead	Potential Relationship to WRIA 54 Watershed Plan
Implementation of Watershed Plans in WRIsAs 55/57 (Middle and Little Spokane), 56 (Latah Creek), 59 (Colville), 43 (Upper Crab/Wilson), and 34 (Palouse).	Analogous to WRIA 54 Watershed Plan, these contain recommendations for water quantity, water quality, and instream flow (WRIA 55/57 Plan).	Planning Units and Spokane County (55/57), Spokane County Conservation District (56), Lincoln County (43), Palouse County (34), and Stevens County (59)	Where Spokane River watershed-wide recommendations are implemented, there is a need for coordination (recommended actions, priorities). Also, downstream impacts should be considered.
Idaho Water Rights Adjudication	The Ground Water Management Plan Advisory Committee for the Spokane Valley – Rathdrum Prairie Aquifer recommended the adjudication of water rights as an element of the Management Plan for the aquifer. The State legislature authorized the initiation of general water rights adjudication for those portions of northern Idaho not included within the Snake River Basin. The legislation authorizes the adjudication of all rights to the use of water from surface water and ground water sources whether or not hydraulically connected within the Coeur d'Alene-Spokane River Basin, the Palouse River Basin and the Kootenai and Clark Fork-Pend Oreille River Basins.	Idaho Department of Water Resources	This adjudication will provide more certainty about how much water is allocated on the Idaho side of the border. Water rights in Washington have not yet been adjudicated, leaving uncertainty as to actual allocation.
Idaho Comprehensive Aquifer Management Planning	Idaho legislature has authorized characterization and planning efforts for 10 different basins in the next 10 years in order to manage ground and surface water. The technical and planning components will occur during FY2009-2012	Idaho Dept. of Water Resources	May provide technical data for shared watersheds. Could impact water resources on Washington side of border (water quantity and quality)
Eastern Washington Water Rights Pre-Adjudication	Project to map, document and assess water rights in WRIsAs 57 and 54. Pre-adjudication work is completed in WRIA 54. Ecology is seeking legislative approval and funding to initiate an adjudication in the basin in 2009-2011.	Washington Department of Ecology	This project should enable refinement of estimates for appropriated water.
Columbia River Management Program	Legislatively-mandated program to aggressively pursue development of water supplies to benefit both instream and out-of-stream uses through storage, conservation and voluntary regional water management agreements. The bill also created a Columbia River Basin development account.	Washington Department of Ecology	Potential funding mechanism for WRIA 54 water management implementation projects. Also, proposed incremental storage releases from Lake Roosevelt would affect the lower Spokane River (Spokane Arm).

**TABLE 1-2 (continued).  
PLANNING ACTIVITIES CONDUCTED IN SURROUNDING AREAS**

Natural Resource-Based Program or Plan	Description	Entity Lead	Potential Relationship to WRIA 54 Watershed Plan
Group A Water System Plans	These plans include a description of the water system, basic planning data and water demand forecasting, system analysis, conservation program, water right analysis, system reliability, interties, source water protection, operations and maintenance program, distribution facilities design and construction standards, improvement program, financial program.	Group A Water Purveyors as required by the Washington State Department of Health	Water system planning done by water purveyors is integral to water management.
Spokane Tribe Integrated Resource Management Plan- Spokane Tribe-	Land use planning and water resource data and management objectives	Spokane Tribe	Regulates land use on the Spokane Reservation
Total Maximum Daily Load (TMDL) Plans (Water Cleanup Plans)	Regulatory plans to address water quality impairments (dissolved oxygen—includes phosphorus abatement, dissolved metals, PCBs, temperature, fecal coliform, pH, ammonia, turbidity)	Washington Department of Ecology	Elements may overlap with potential WRIA 54 recommendations.
Bi-State Nonpoint Source Phosphorus Study	Initial characterization of nonpoint source phosphorus pollution in the areas of Idaho and Washington that drain to the Spokane River. An important component of Spokane River and Lake Spokane clean-up is reducing nonpoint source phosphorus pollution.	Spokane County	May relate to water quality in WRIA 54.
Spokane River Forum	New forum, established in 2008, with a mission to preserve and enhance the value of the Spokane River for all segments of society by increasing and deepening public awareness, engagement and interaction with the river's environmental, cultural and economic resources.	Spokane River Forum Board of Directors	Opportunity to collaborate and enhance public education and outreach
FERC Hydroelectric License	Federal license required for operation of hydroelectric projects.	Avista Utilities	Dam operations at Post Falls, Nine Mile, and Long Lake
Coeur d'Alene River Basin Superfund Record of Decision	30-year cleanup plan for contamination associated with historical mining activity in the Coeur d'Alene River basin.	Environmental Protection Agency	Guides remediation efforts related to historical mining in the main tributary to Lake Coeur d'Alene, which is also the headwaters of the Spokane River.
National Pollutant Discharge Elimination System (NPDES) Phase II Stormwater Permit	Requires stormwater program to reduce quality and quantity impacts to the environment from stormwater runoff	City of Spokane and Spokane County	Implementation of NPDES Phase II will support WRIA 54 Watershed Plan recommendations, especially water quality recommendations.

**TABLE 1-2 (continued).  
PLANNING ACTIVITIES CONDUCTED IN SURROUNDING AREAS**

Natural Resource-Based Program or Plan	Description	Entity Lead	Potential Relationship to WRIA 54 Watershed Plan
Shoreline Master Program	Regulates development and land uses along major shorelines	City of Spokane and Spokane, Stevens, and Lincoln Counties	Implementation of updated Shoreline Master Programs in the City of Spokane and Spokane County. All Shoreline Master Programs will support WRIA 54 Watershed Plan recommendations
Critical Areas Ordinances	Regulates allowable activities within and adjacent to designated critical areas (i.e. steep slopes etc.)	Counties and cities	Relates to water quality and instream flow. May also impact water resources “carrying capacity” for meeting future water needs.
Chamokane Creek Watershed Plan	Water quality and riparian assessment-focused plan, identifies restoration and corrective action projects to address identified problems	Stevens County Conservation District	Provides data for WRIA 54 Plan assessment; WRIA 54 Plan recommends implementation of Chamokane Creek Watershed Plan to address water quality issues in Chamokane Creek.
Natural Resource Conservation Plans	Focus on land and resource management, providing assessment, technical assistance, monitoring and restoration support	Stevens, Lincoln, and Spokane County Conservation Districts	Implementation of Natural Resource Conservation Plans will support WRIA 54 Watershed Plan recommendations

## CHAPTER 2. WATERSHED CHARACTERISTICS

### WATERSHED OVERVIEW

Encompassing portions of Spokane, Stevens, and Lincoln Counties, WRIA 54 is home to residents of the Cities of Spokane, Medical Lake, and Airway Heights, Fairchild Air Force Base and most of the Spokane Indian Reservation. Future changes in land use and population will change the way resources are used and ultimately may change some of the characteristics of the watershed.

WRIA 54 is located in the portion of the Columbia River Basin where the general slope of the basin begins to rise to meet the Rocky Mountains and form a plateau. This area transitions from the desert-like conditions of the Columbia Basin to the forested mountains of northern Idaho (NOAA, 2006). WRIA 54 not only contains multiple counties, cities and towns and a tribal reservation, but also supports an extensive agricultural industry, particularly in the region south of the Spokane River. In the northern part of the watershed, agricultural lands predominate in the valleys, with evergreen trees, shrubs and grasslands in the upland areas.

The Spokane River is the major water body in the watershed. It winds from east to west through the watershed, its flow slowed by three dams along the way (Nine Mile, Long Lake, and Little Falls Dams). The largest of the reservoirs formed by the dams is Lake Spokane (also known as Long Lake). Numerous tributaries from side canyons flow toward the Spokane River, but they rarely connect directly through surface flow. Only Chamokane Creek, Little Chamokane Creek, the Little Spokane River, and Latah Creek flow year-round to the Spokane River. Table 2-1 lists the subbasins in WRIA 54 and their size. Figure 2-1 shows the subbasin boundaries.

<b>TABLE 2-1. WRIA 54 SUBBASINS</b>			
Subbasin Name	Area (square miles)	Subbasin Name	Area (square miles)
Airway	53	Long Lake, North	48
Camas Valley (Chamokane)	90	Long Lake, South	66
Coulee Creek	54	Orzada	29
Deep Creek, North-South	80	Pitney	46
Ford (Chamokane)	100	Riverside	28
Harker Canyon	60	Sand Blue	95
Little Chamokane	71	Spring Creek	63
<b>Total Area</b>			<b>883</b>

### CLIMATE

There are seven National Ocean and Atmospheric Association (NOAA) climate recording stations in and around WRIA 54. For WRIA 54 planning, data were gathered from the *Parameter-elevation Regressions on Independent Slopes Model* (PRISM). PRISM is a model that uses point data for area climate stations, a digital elevation model, and other spatial data sets to generate climate estimates (SCAS, 2006). Based on



PRISM data, the average annual precipitation in WRIA 54 is 15.8 inches; approximately half of that amount falls as snow, which peaks between October and the end of March (NOAA, 2006). November is the wettest month in the watershed, with average precipitation of 2.13 inches. July is the driest month in the watershed, averaging 0.57 inches of precipitation. Table 2-2 shows the average monthly and annual rainfall in WRIA 54.

<b>TABLE 2-2. AVERAGE MONTHLY AND ANNUAL RAINFALL IN WRIA 54</b>			
<b>Month</b>	<b>Average Precipitation (inches)</b>	<b>Month</b>	<b>Average Precipitation (inches)</b>
January	1.89	July	0.57
February	1.52	August	0.59
March	1.39	September	0.82
April	1.08	October	1.15
May	1.40	November	2.13
June	1.20	December	2.08
		<b>Annual Total</b>	<b>15.82</b>

Annual rainfall is not spread evenly across the WRIA. The Lincoln County portion of the WRIA is the driest, with some areas averaging just over 11 inches of annual rainfall. The northern highland areas, all within Stevens County and the Spokane Reservation, represent the wettest areas, averaging between 17 and 24 inches of rainfall each year.

Temperatures in the watershed are characterized by cold winters and warm summers. The warmest month on average is July, and the coldest month on average is January. Figure 2-2 shows average temperatures over the course of the year, based on PRISM data.

## **LAND USE, POPULATION AND TRENDS**

### **Current Land Uses**

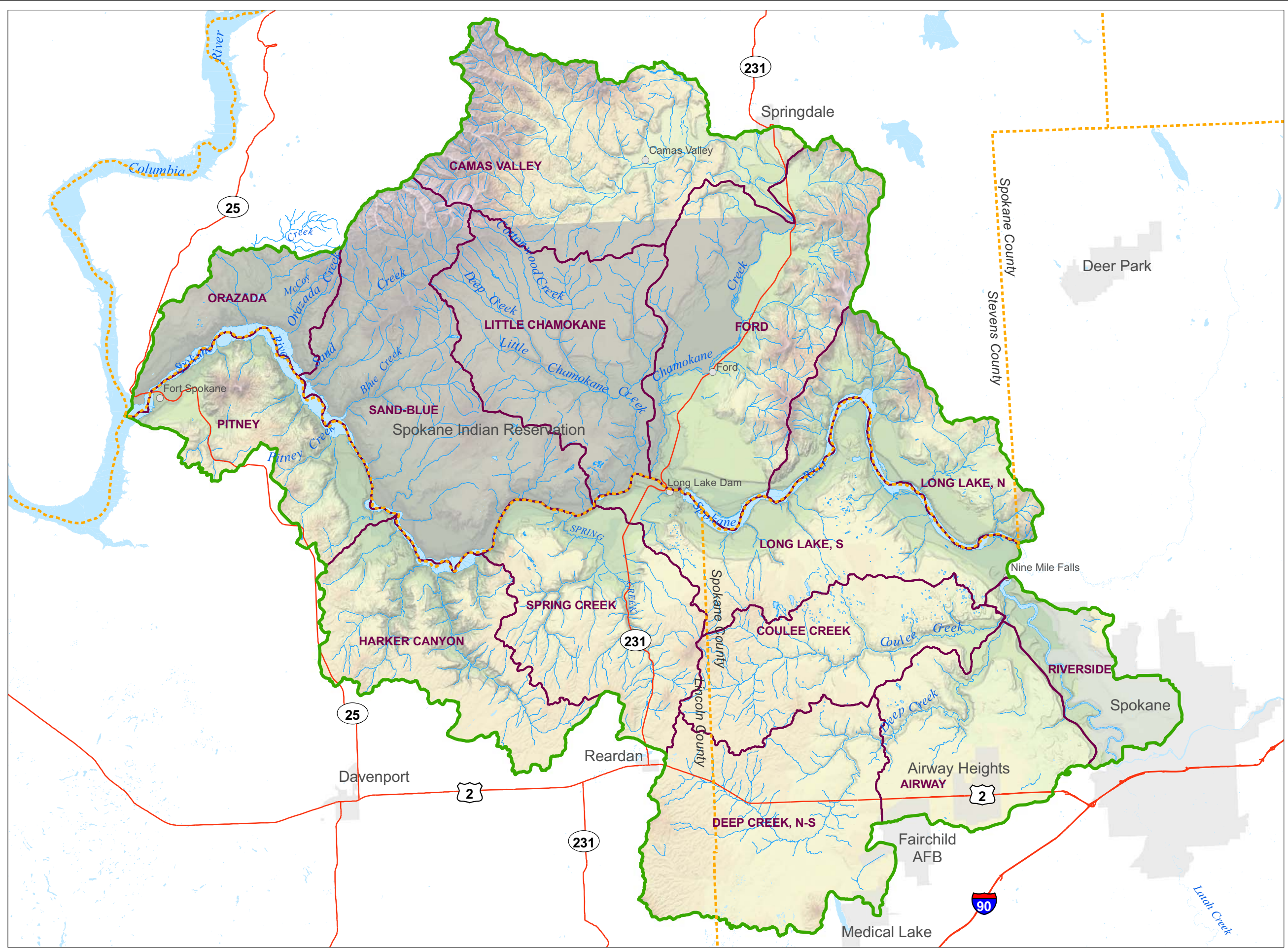
Figure 2-3 summarizes existing land use in WRIA 54. The area consists mainly of forest and agricultural land. In Stevens County and the Spokane Indian Reservation, the land is a blend of agriculture in the valleys and forest in the upland areas, with small, scattered, low-intensity residential areas, mostly in the Long Lake North subbasin. South of the Spokane River in Spokane and Lincoln Counties, the land use is mostly agricultural, with intermittent forests and open land.

Most of the urban development is in the Riverside subbasin in the southeast portion of the WRIA, where approximately 60 percent of the land is the urban area and low-intensity residential development of the City of Spokane.

### **Future Land Uses**

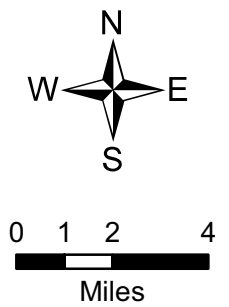
Figure 2-4 summarizes future land use for WRIA 54 as allowed by current zoning. The zoning would provide for low-intensity residential land uses to grow significantly in these suburban areas, primarily in the southeastern portion of the watershed around the City of Spokane and Airway Heights and to continue along the Spokane River, Lake Spokane (Long Lake), Coulee Creek, and Deep Creek.

Figure 2-1  
WRIA 54  
Subbasins



- Legend**
- Subbasin Boundary
  - WRIA54 Boundary
  - County Boundary
  - Major Road
  - Stream
  - Waterbody
  - Unincorporated Community
  - Jurisdiction
  - Spokane Indian Reservation

*Data Sources:*  
 Streets, Waterbodies, Streams,  
 County Boundary, Spokane Indian  
 Reservation - Washington DNR  
 Juristictions - County Data  
 WRIA Boundary - Washington DOE  
 Populated Places - USGS



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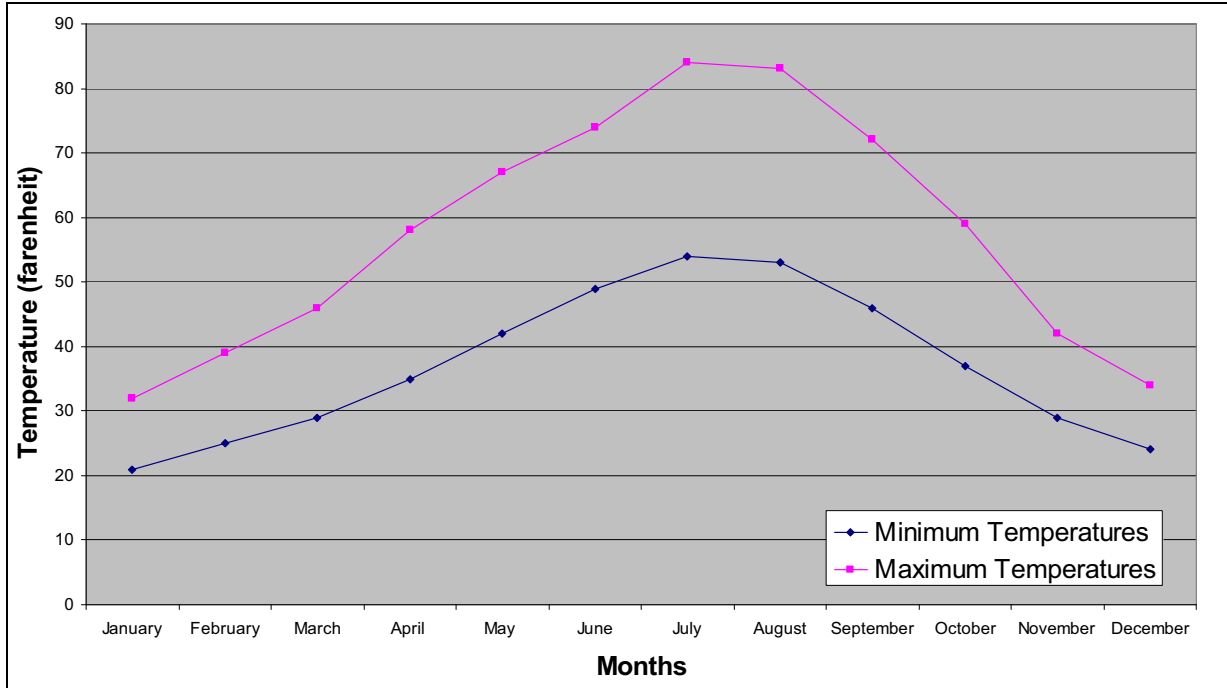


Figure 2-2. Average Temperature Ranges in WRIA 54

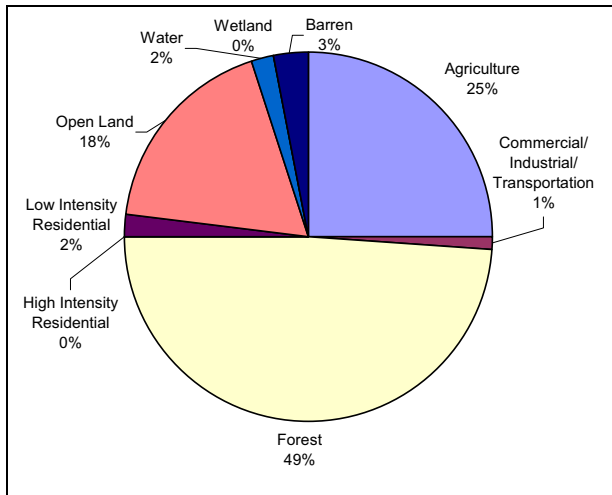


Figure 2-3. Current Land Use

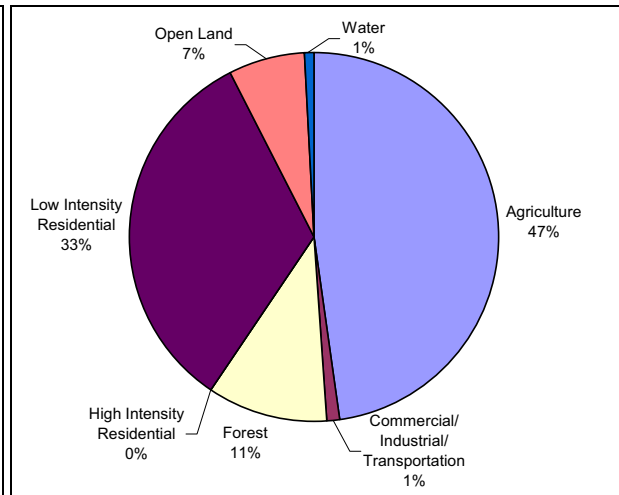


Figure 2-4. Future Land Uses Assuming Full Build Out Under Current Zoning

Stevens County zoning provides for additional low-density residential growth near Springdale in the northern portion of the watershed. Although very unlikely to occur, full buildout under current zoning could result in large decline of forested and open space areas.

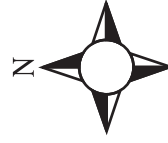
Urban growth areas provide a more likely scenario for expansion of urban land uses. The urban growth areas in WRIA 54 include portions of the West Plains and the Lake Spokane urban growth area in Stevens County. The current development in some of these areas, particularly the Lake Spokane area, is primarily larger lots (one acre or more), making infill at higher densities more difficult. Figure 2-5 shows the Suncrest and West Plains urban growth boundaries.



**Figure 2-5**  
Urban Growth Boundaries

- Legend**
- Major Road
  - County Boundary
  - Stream
  - WRIA 54 Boundary
  - Jurisdiction
  - Urban Growth Area
  - Water Body

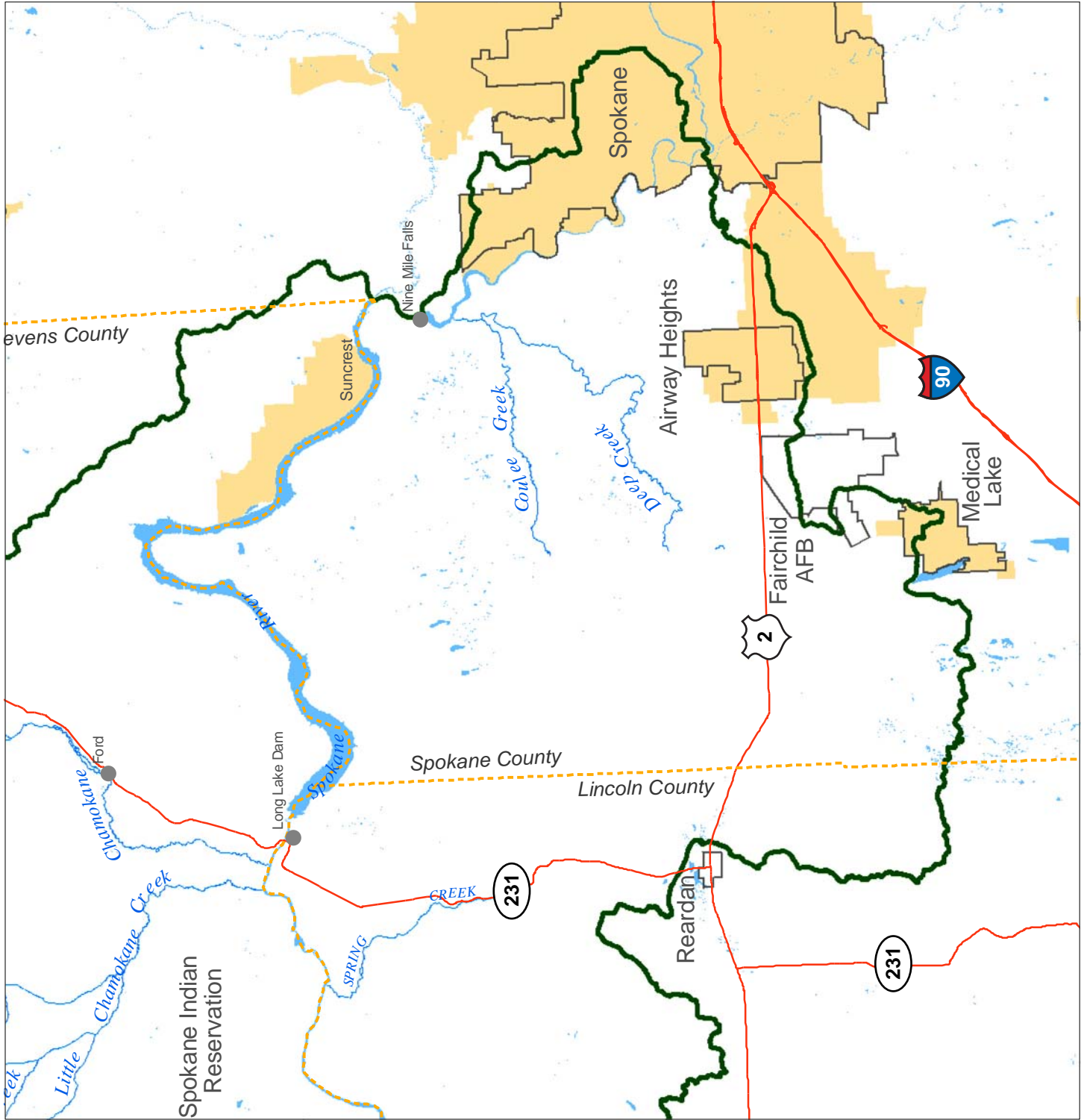
**Data Sources:**  
 Streets, water bodies, streams,  
 county boundaries, Spokane  
 Reservation: Washington DNR  
 Jurisdictions: County Data  
 WRIA Boundary: Washington DOE  
 Current land use: 1992 NLCD



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Figure\_2\_5\_UrbanGrowthBound.ai



## Population

Figure 2-6 shows population density throughout WRIA 54. Approximately 19 percent of Spokane County’s population lives in WRIA 54 (79,922 people), accounting for about 90 percent of the total WRIA population, and most of that is in the urban area in and around the City of Spokane. An estimated 21 percent of Stevens County’s population lives within the WRIA (8,591 people), which accounts for about 8 percent of the WRIA population. Lincoln County has approximately 9 percent of its population within the WRIA (913 people), making up the remaining 2 percent of the of the WRIA population. Historically, these percentages have remained approximately the same. Population projections through 2025 show growth in all three counties, with Lincoln County increasing 27 percent, Spokane County increasing 29 percent, and Stevens County increasing the most at 55 percent.

## Jurisdictions and Land Ownership

Jurisdictions in WRIA 54 include Spokane County, Lincoln County and Stevens County; the Cities of Spokane, Airway Heights, and Medical Lake; the Town of Springdale; Fairchild Air Force Base; and the Spokane Indian Reservation. Of these jurisdictions, only Airway Heights is completely within WRIA 54. Table 2-3 lists the jurisdictions and their area within WRIA 54. The majority of the watershed consists of rural unincorporated lands, and the land is predominantly privately owned. The Spokane Indian Reservation accounts for approximately 25 percent of the watershed; and publicly owned municipal, county, state, and federal land account for around 4 percent.

Jurisdiction	Jurisdictional Area (square miles)	Percent of Jurisdiction in WRIA 54	Percent of WRIA 54 Area <sup>a</sup>
City of Airway Heights	5.0	100	0.6
City of Medical Lake	4.3	22.3	0.1
City of Spokane	59.1	28.6	1.9
Fairchild Air Force Base	6.6	35.0	0.3
Town of Springdale	1.1	39.5	0.1
Lincoln County	2,339.2	8.7	23
Spokane County	1,783.4	12.7	28
Stevens County	2,537.7	17	24
Spokane Indian Reservation	215.3	90	25

a. Because some of these jurisdictions overlap (i.e. Airway Heights is within Spokane County), percentages sum to more than 100%.

## GEOLOGY/HYDROGEOLOGY

Over time, local geology and the dry, temperate climate have developed soils, aquifers, and water bodies that interact in complex ways. Groundwater is located in soil pore spaces and in the fractures of rock formations. In addition to supplying water for human needs such as drinking, crop irrigation and industrial use, groundwater plays a critical role in the environment. Water that moves from the subsurface into streams maintains a base level of flow in the streams during the summer when there is relatively little contribution from precipitation and snow melt. Therefore, increased use of groundwater in WRIA 54 could impact surface water resources, where there is hydraulic continuity. Management of the watershed’s water resources requires a thorough understanding of the watershed’s hydrogeology.

In WRIA 54, principal aquifers generally lie within unconsolidated sands and gravels, basalt, and basement rocks. The unconsolidated and basalt aquifers are the most suitable for extracting groundwater of sufficient quantity for municipal distribution systems. Figure 2-7 shows the primary known aquifers in WRIA 54 and Figure 2-8 provides an overview of the geology. These topics are detailed in the Phase 2 Level 1 Assessment, with a brief description below.

## **Basement Rock Aquifers**

The oldest rocks in WRIA 54 date from the Precambrian period, more than 544 million years ago. These basement rocks include sedimentary and igneous rocks, most of which have been altered throughout geologic history. They are present at the surface over much of northern WRIA 54, and underlie all the younger geologic units elsewhere. Groundwater occurs in the fractured or weathered zones of basement rocks. Basement rock aquifers are the primary source of groundwater in significant portions of the watershed, primarily north of the Spokane River. Water wells penetrating into basement rock aquifers generally have low yields, frequently on the order of several gallons per minute or less.

## **Columbia River Basalt Group**

A major shift in geologic activity began about 10 to 20 million years ago with the onset of basalt flows of the Columbia River Basalt Group (CRBG). The resulting basalt deposits are hundreds to thousands of feet thick and extend throughout the Columbia Plateau; they underlie most of the West Plains and Lincoln County portion of WRIA 54. The CRBG has been subdivided into five formations, two of which have been mapped within WRIA 54 (Drost and Whiteman, 1986). Because of the complexity of the eruptive history of basalts in WRIA 54, and the lack of specific hydrologic reasons to differentiate them, basalt-hosted aquifers in the WRIA are considered to belong to the same body of public groundwater, regardless of formational nomenclature.:

- **Wanapum Basalt Formation Aquifers**—The Wanapum Basalt makes up about 6 percent of the total CRBG volume in Washington and Oregon (Whiteman et. al 1994). It overlies the Grande Ronde Basalt and is present throughout much of WRIA 54 south of the Spokane River. The Wanapum Basalt has been observed to be up to 292 feet thick in wells within the West Plains. The formation consists of a series of individual basalt flows. Groundwater is most readily transmitted through the tops of each flow. The Wanapum Basalt Aquifers are used by numerous West Plains wells. Some of these wells have shown water level declines in recent years, suggesting that a sustainable level of water withdrawal has been exceeded.
- **Grande Ronde Formation Aquifers**—The Grande Ronde Basalt makes up 85 to 88 percent of the total volume of the CRBG in Oregon and Washington (Whiteman et. al, 1994). The Grande Ronde has been observed to be up to 514 feet thick in the West Plains area. In places, Grande Ronde Basalt flows blocked existing rivers. Lakes formed behind these basalt dams, resulting in the deposit of sediments known as the Latah Formation (Robinson, 1991). Latah Formation sediments occur discontinuously throughout WRIA 54, usually interbedded with or overlying the Grande Ronde Basalt. The Grande Ronde Basalt consists of a series of basalt flows, with groundwater most readily transmitted through the interflow zones at the top of each. These flows, interbedded with coarse sedimentary deposits, create multiple stacked confined aquifers and relatively high well yields.

## **Ice Age Deposits and Aquifers in WRIA 54**





Beginning 1.8 million years ago, expanding and retreating glaciers and ice sheets carried sediments, which they deposited at their edges. As the ice sheets advanced south, thick lobes of ice at the end of the sheets would dam rivers, creating large glacial lakes. The glacial lakes deposited layers of clay and silt that have been recorded in deep boreholes in WRIA 54. The largest glacial lake, Glacial Lake Missoula

**Figure 2-6**

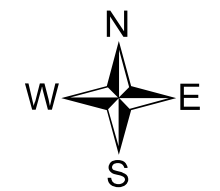
**WRIA 54  
Population Density**

**Legend**

**2000 Population Per Acre**

-  0 - 1
-  2 - 3
-  4-5
-  5-6
-  7 - 200
-  Major Road
-  County Boundary
-  Stream
-  Waterbody
-  Spokane Indian Reservation

*Data Sources:*  
Streets, Waterbodies, Streams,  
County Boundary, Spokane Indian  
Reservation - Washington DNR  
Juristictions - County Data  
WRIA Boundary - Washington DOE  
Populated Places - USGS  
303D Locations - WA DOE



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Map Produced 1/16/2009

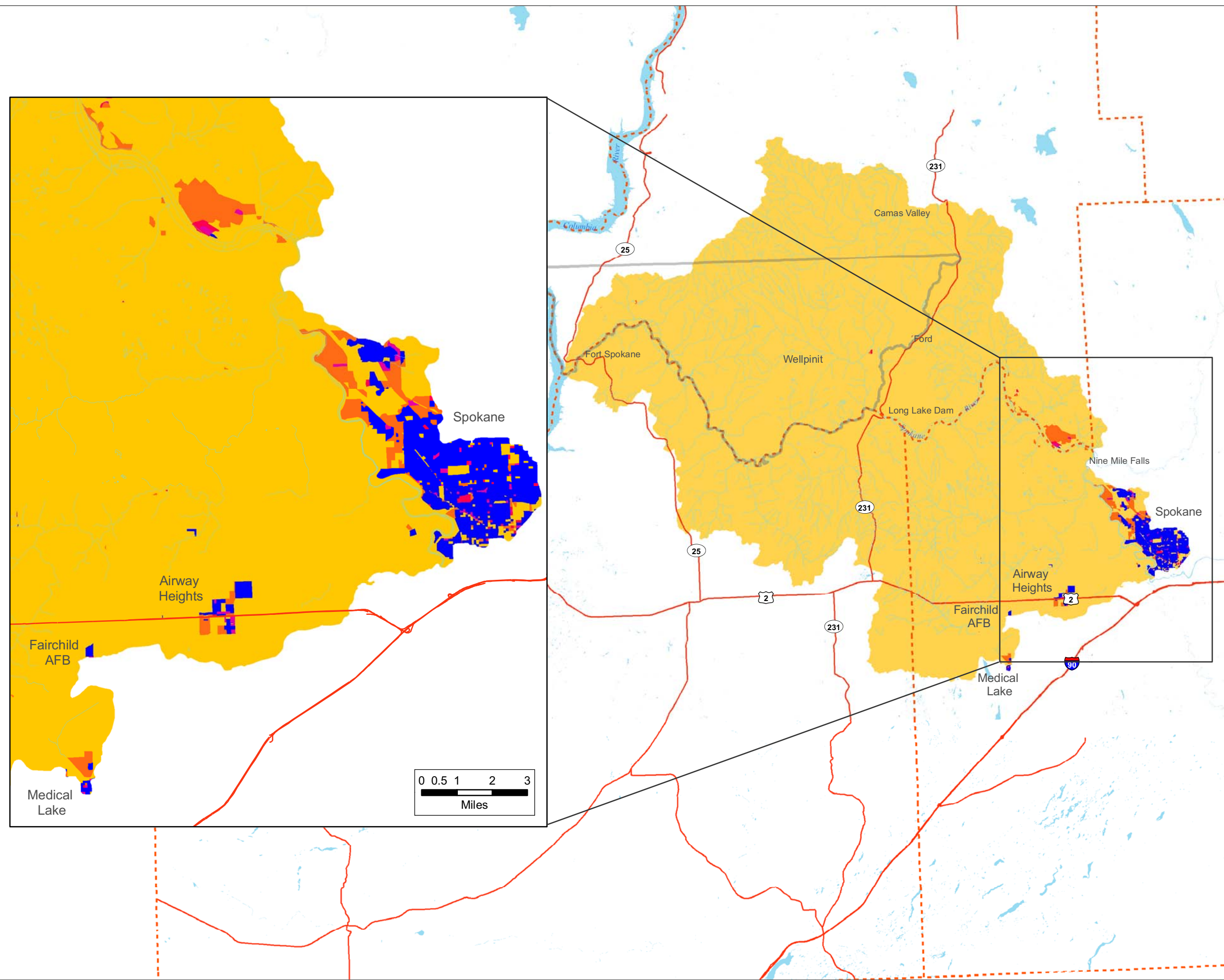
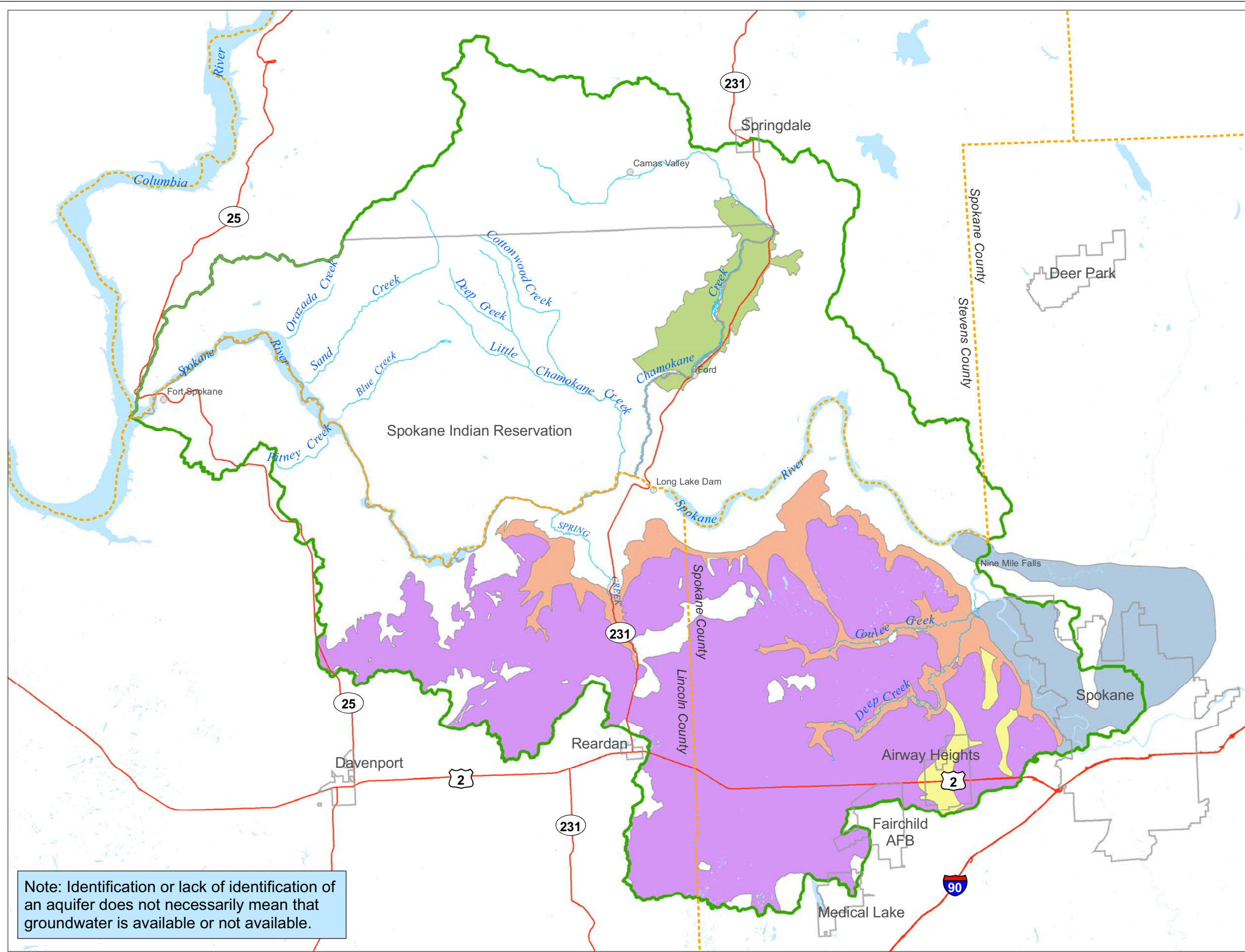




Figure 2-7

WRIA 54  
Primary Known Aquifers



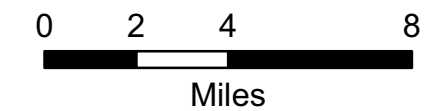
**Legend**

- Major Road
- County Boundary
- Stream
- WRIA54 Boundary
- Jurisdiction
- Waterbody

**Aquifer Name**

- Chamokane Valley Aquifer
- Grande Ronde Basalt Aquifer
- Paleochannel Aquifer
- Spokane Valley/Rathdrum Aquifer
- Wanapum Basalt Aquifer

Data Sources:  
Streets, Waterbodies, Streams,  
County Boundary, Spokane Indian  
Reservation - Washington DNR  
Jurisdictions - County Data  
WRIA Boundary - Washington DOE  
Populated Places - USGS  
303D Locations - WA DOE








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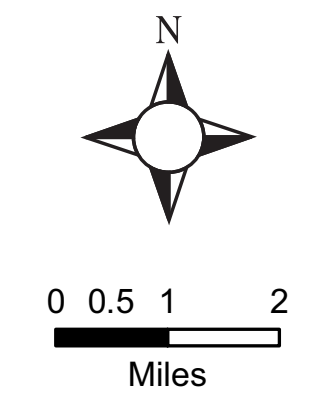
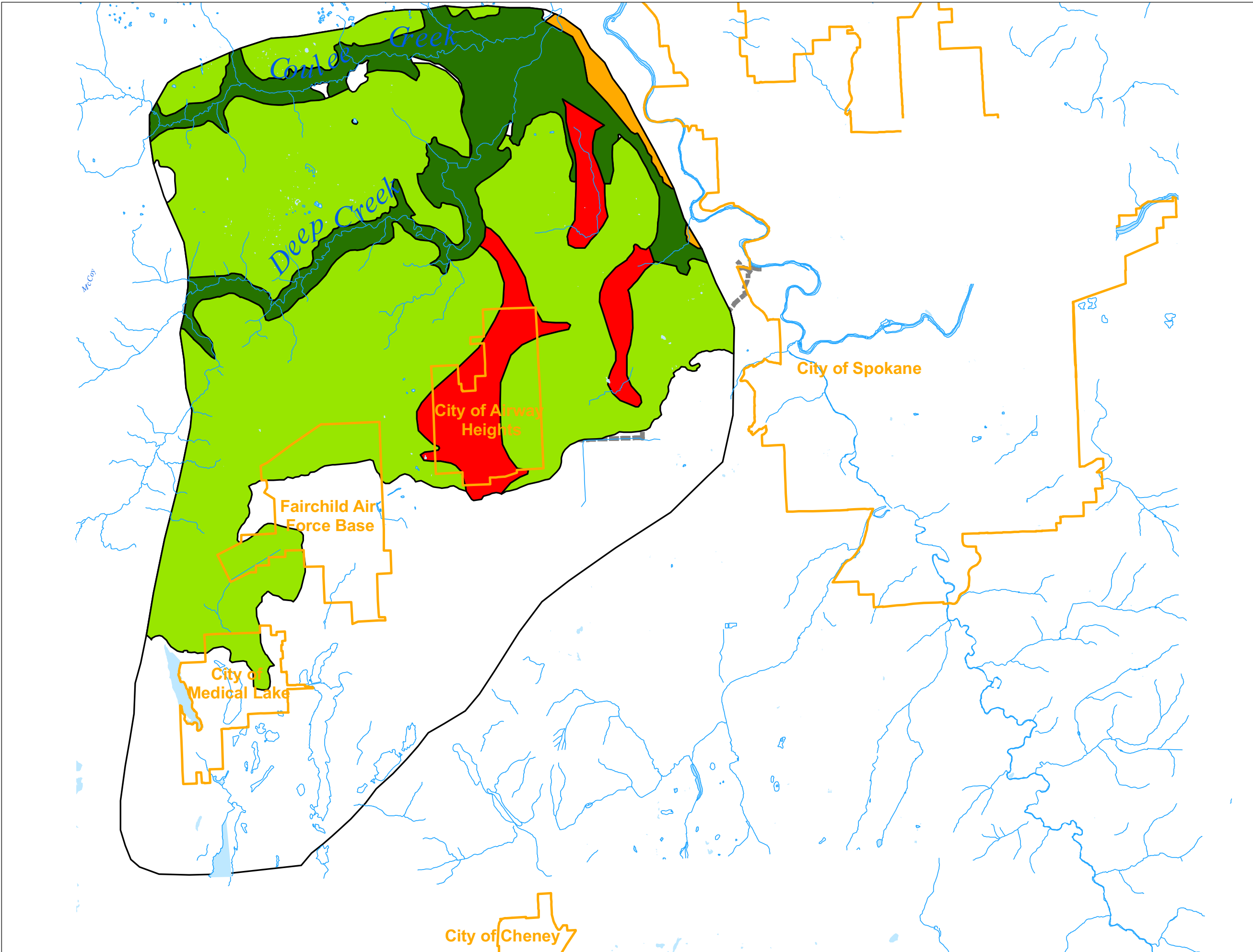
Map Produced 01/16/2007

Note: Identification or lack of identification of an aquifer does not necessarily mean that groundwater is available or not available.



**Figure 2-8**  
West Plains Aquifers

- Legend**
-  City Boundaries
  - Aquifer Name**
  -  Grande Ronde Basalt Aquifer
  -  Paleochannel Aquifer
  -  Spokane ValleyRathdrum Aquifer
  -  Wanapum Basalt Aquifer



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would periodically float its ice dam, causing catastrophic failure of the dam and releasing a massive flood of up to 500 cubic miles of water (Bretz, 1930). The Missoula Floods scoured sediments in WRIA 54 down to bedrock, eroded portions of the Columbia River Basalts, and left deposits that consist predominantly of reworked glacial gravels (Deobald and Buchanan, 1995).

Winds whipped up the finer glacial silts and clays, which combined with volcanic ash from the Cascade Range to form thick, wind-blown, fine-grained deposits called loess. The loess settled on the Columbia River Basalt and the uplifted metamorphic rocks and created deposits known as the Palouse Formation (Donaldson and Giese, 1968).

In WRIA 54, unconsolidated sand and gravel deposits left over from glacial processes are mostly clean and highly permeable. Aquifers in these soils are located principally in valley bottoms. The saturated thickness of these aquifers varies from less than 10 feet in higher elevation areas to more than 780 feet in Spokane Valley (Kahle et al., 2005). In the higher elevation areas underlain by basalt, locally thick accumulations of sediment occur within “paleochannels,” as discussed below. Unconfined aquifers are relatively susceptible to contamination from point and non-point pollutant sources. Recharge to the unconfined aquifers is primarily from precipitation, applied irrigation and septic systems, and, potentially, from leakage from underlying basalt aquifers.

### ***Spokane Valley-Rathdrum Prairie Aquifer***

The most widely used of the ice-age era aquifers in the region is the Spokane Valley-Rathdrum Prairie (SVRP) Aquifer, a small part of which extends into the southeast corner of WRIA 54. The aquifer is the sole source of water for more than 400,000 people for residential, commercial, industrial and agricultural uses. It also is critical in supplying flow to the Spokane River and part of the Little Spokane River. The U.S. Geological Survey and the states of Washington and Idaho completed a bi-state study of the SVRP aquifer in 2007. The study investigated how much water is in the aquifer, where it is located, and how the aquifer interacts with the Spokane River. The study confirms the significant link between the aquifer and the river: essentially any withdrawal of water from the aquifer directly and quickly affects river flows.

The SVRP Aquifer is estimated to contain 10 trillion gallons of water, with 250 to 650 million gallons flowing through the aquifer daily near the Washington-Idaho border (Kahle et al., 2005). The aquifer consists primarily of thick layers of coarse-grained sediments including gravels, cobbles and boulders. Hydraulic conductivity, a measure of the rate of groundwater flow through an aquifer, is over 1,000 feet per day for most of the aquifer; it can be as high as 6,000 feet per day. Thus, the potential water yield from the aquifer with little drawdown of the water table is relatively high. Wells near Spokane yield up to nearly 5,000 gallons per minute, and the City of Spokane’s Nevada well can yield nearly 20,000 gallons per minute.

### ***Paleochannel Aquifers***

Generally, sediment aquifers on top of the Wanapum basalt are thin and do not produce large quantities of water. Some locations, however, feature “paleochannels,” which are channels carved into the basalt by ancient rivers that later filled with glacial sands and gravels. Sediment accumulations in these channels are over 200 feet thick in spots and provide large quantities of usable groundwater. Deobald and Buchanan (1995) identified three paleochannels in the West Plains area (shown as yellow bands on Figure 2-7). The westernmost and central paleochannels are thought to discharge to Deep Creek and the easternmost channel discharges to the Spokane River. Recharge to the paleochannels comes from infiltration of precipitation and discharge from the Wanapum and Grande Ronde basalt aquifer (SAIC, 1992). The westernmost and easternmost paleochannel aquifers are in WRIA 54.

### Chamokane Basin Aquifer System

The Chamokane Basin Aquifer System is located in the Ford subbasin, through which Chamokane Creek flows. The Chamokane Basin Aquifer System consists of two principal aquifers: upper and lower. Because relatively few wells penetrate to the lower aquifer, it is poorly characterized at this point in time. The U.S. Geological Survey (USGS) is currently conducting a multi-year study of the Chamokane Valley Aquifer System which will result in a groundwater flow model capable of predicting the impacts of groundwater withdrawals on the aquifer system. The USGS study may also include information about the aquifer below Camas Valley and any interconnection it may have with Chamokane Creek, and the Colville River and/or aquifers in WRIA 59.

## HYDROLOGY AND RIVER SYSTEMS

In WRIA 54 there are approximately 3,000 miles of rivers and streams draining the landscape, many of which are intermittent, that is, not having continuous year-round flow. The Spokane River is the dominant surface water body in WRIA 54. Perennial water bodies such as the Spokane River gain flow from groundwater along certain reaches, providing a continuous base flow.

### Spokane River

The Spokane River is 111 miles long, beginning in northwestern Idaho at Coeur d'Alene Lake and flowing west through the City of Spokane and eventually to the Columbia River through the Spokane Arm of Lake Roosevelt. The Spokane River enters WRIA 54 at the confluence with Latah (Hangman) Creek and exits WRIA 54 at the river's mouth. WRIA 54 includes 75.6 percent of the river's length.

Figure 2-9 shows minimum, maximum, and average daily flows in the Spokane River at Lake Spokane (Long Lake) since 1939. The highest flows occur in late April through May, when flows range from 5,000 cubic feet per second (cfs) to 47,000 cfs. The lowest flow values are in September, when flows range from 100 cfs to 3,100 cfs. Average summer low flows have declined over the last several decades, and Ecology is evaluating potential causes. Table 2-4 summarizes average monthly flows at Lake Spokane, as measured just below Long Lake Dam.

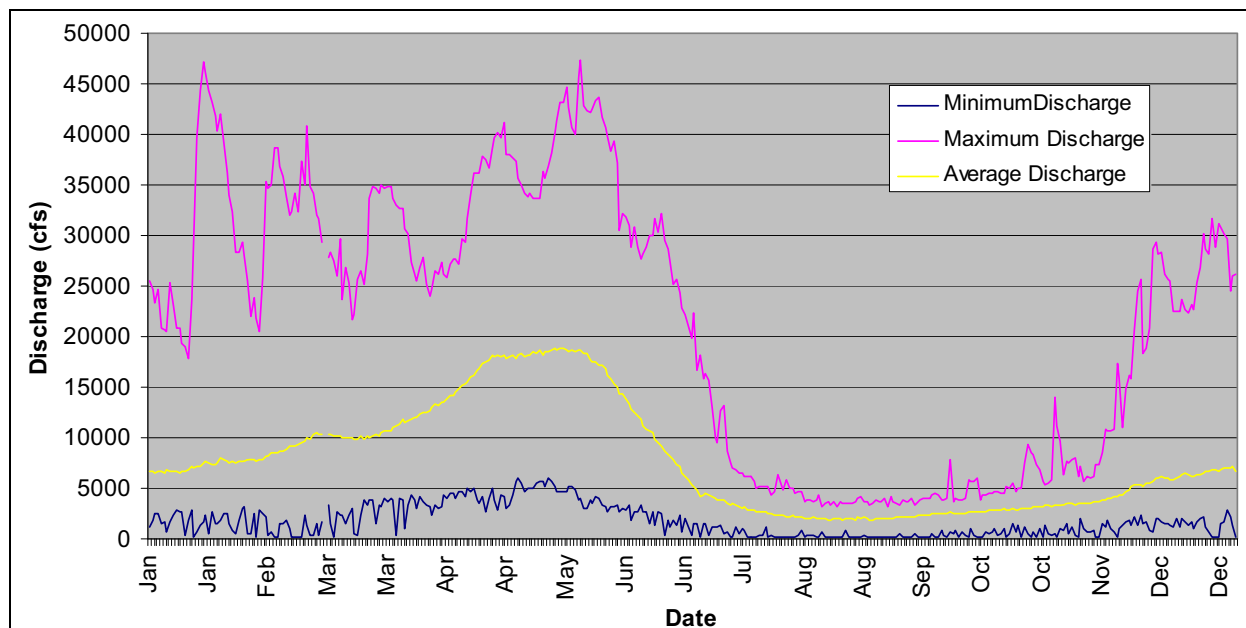


Figure 2-9. Spokane River Flow (Discharge) Measured at Long Lake Dam

Month	Average Flow (cfs)	Month	Average Flow (cfs)
January	7,112	July	3,454
February	8,860	August	2,019
March	10,589	September	2,276
April	15,350	October	2,909
May	18,308	November	4,033
June	11,302	December	6,334

Flow on the Spokane River is regulated by a series of dams (see Figure 2-10). There are seven hydro electric dams on the Spokane River. Three of these dams are within WRIA 54. They are Nine Mile Dam, Long Lake Dam, and Little Falls Dam. They were constructed in 1908, 1915, and 1910, respectively. Grand Coulee Dam is located on the Columbia River and creates the Spokane Arm of Lake Roosevelt. Four smaller dams listed in the Ecology dam database are associated with mining ponds—two in the Chamokane Creek drainage; one in an unnamed drainage within the Spokane Indian Reservation, and one along the south shoreline of Lake Spokane.

Although not located in WRIA 54, Grand Coulee Dam has a significant effect on the watershed, with backwater from Lake Roosevelt impacting the lower 30 miles of the Spokane River. Water levels throughout this lower reach fluctuate throughout the year, with levels reaching a low point in the spring before refilling to a maximum level, usually by July 4.

### **Tributaries**

Named tributaries to the Spokane River in WRIA 54, which vary considerably in length and discharge, are as follows:

- Orzada Creek
- Pitney Creek
- Little Chamokane Creek
- Coulee Creek
- Sand Creek
- Harker Creek
- Chamokane Creek
- Deep Creek
- Blue Creek
- Mill Creek
- Little Spokane River
- Latah Creek
- Spring Creek

Figure 2-11 shows average monthly flows for tributaries for which sufficient flow data exist.

### **SOIL GROUPS**

Figure 2-12 illustrates the distribution of soil groups across WRIA 54. Deep, well drained sandy and gravelly soils with high infiltration rates make up 15 percent of the area of WRIA 54 (85,100 acres) and are found predominantly along the Spokane River, Deep Creek, and the Ford Subbasin of the Chamokane Creek basin. Moderately deep, moderately well drained silts, sands, and fine gravelly soils with moderate infiltration rates make up nearly 65 percent of the WRIA 54 surface area (367,100 acres). Somewhat poorly drained fine material soils with slow infiltration rates make up 11 percent of the watershed (62,100 acres). Shallow soils containing a clay layer and very low infiltration and water transmission rates make up the smallest percentage of the watershed, covering approximately 7 percent of the land surface (36,600 acres). Another 2 percent of the area of WRIA 54 (14,900 acres) is open water.

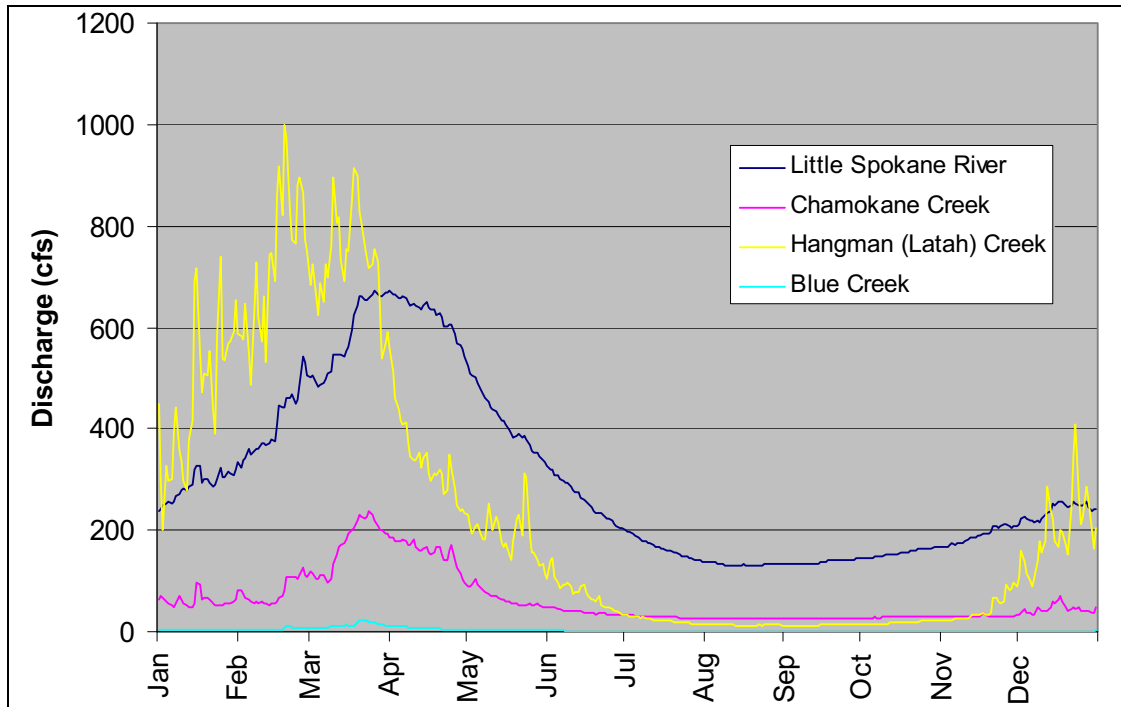


Figure 2-11. Tributary Average Flows

## FISHERIES IN WRIA 54

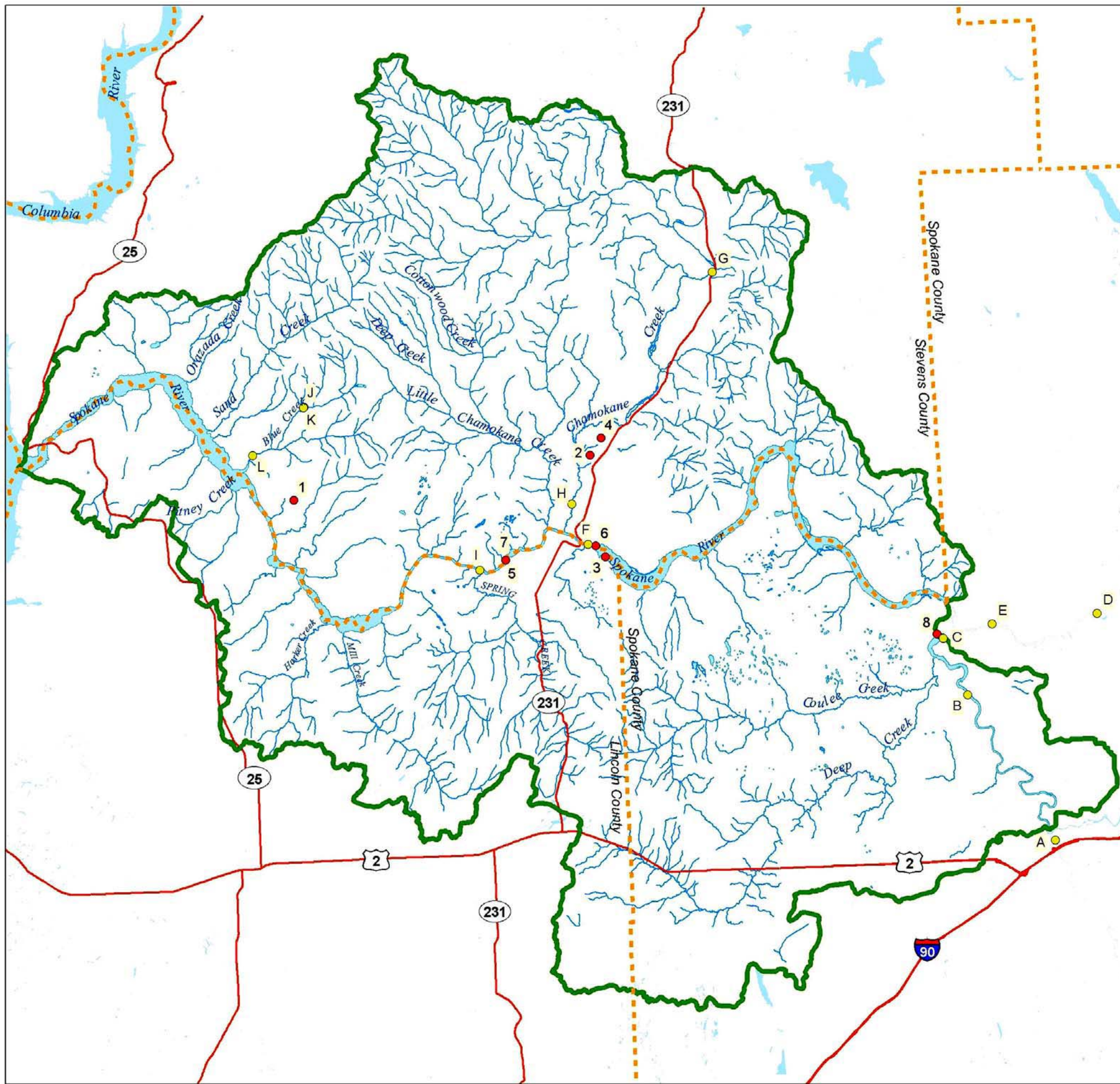
Table 2-5 summarizes information regarding fisheries use of water bodies in WRIA 54, provided by the Spokane Tribe and the Washington Department of Fish and Wildlife. Note that this is not an all inclusive list of species and doesn't necessarily reflect management objectives for those bodies of water.

## WATER QUALITY

Figures 2-13 through 2-18 show water quality data from Ecology's water quality database and the Spokane Tribe's water quality standards. All water bodies are classified according to characteristic uses. For example, water used for drinking water supply needs to be of higher purity than water used only for boating. The figures display WRIA 54 designated characteristic uses, water quality standards classifications, and known water quality problems. Water quality problems and potential problems are classified through the federal Clean Water Act Section 303(d) lists. These lists identify water quality issues in the following categories:

- Category 1—Meets tested standards. Meets the criteria for which it was tested (these listings are actually not problems, but rather locations where water quality testing has shown compliance with standards).
- Category 2—Waters of concern. Some evidence of a water quality problem, but not enough to require establishment of a total maximum daily load (TMDL) for pollutants.
- Category 3—No information submitted. This category is used by Ecology when no information is available.
- Category 4A—Has an approved TMDL in place that is actively being implemented.
- Category 4C—Impaired by causes that cannot be addresses through a TMDL.
- Category 5—Polluted waters that require a TMDL—the 303(d) list.





**Figure 2-10**  
**WRIA 54 Predominant**  
**River Systems**

**Legend**

- Dam
- Stream Gauge
- Major Road
- Stream
- - - County Boundary
- Waterbody
- WRIA54 Boundary

Map ID	Gauge ID	Map ID	Gauge ID
*A	12424000	G	12433100
B	12424500	*H	12433200
C	12426000	I	12433500
*D	12431000	*J	12433542
E	12431500	*K	12433556
F	12433000	L	12433561

*\*Active USGS Stream Gauge*

Map ID	Dam Name
1	Western Nuclear Pond
2	Dawn Mines Pond 4
3	Long Lake Crescent
4	Dawn Mines Evap. Ponds
5	Little Falls Spillway
6	Long Lake
7	Little Falls
8	Nine Mile

*Data Sources:*  
 Streets, Waterbodies, Streams,  
 County Boundary - Washington DNR  
 Stream Gauges - USGS  
 Dams - Stream Net  
 WRIA Boundary - Washington DOE



Miles

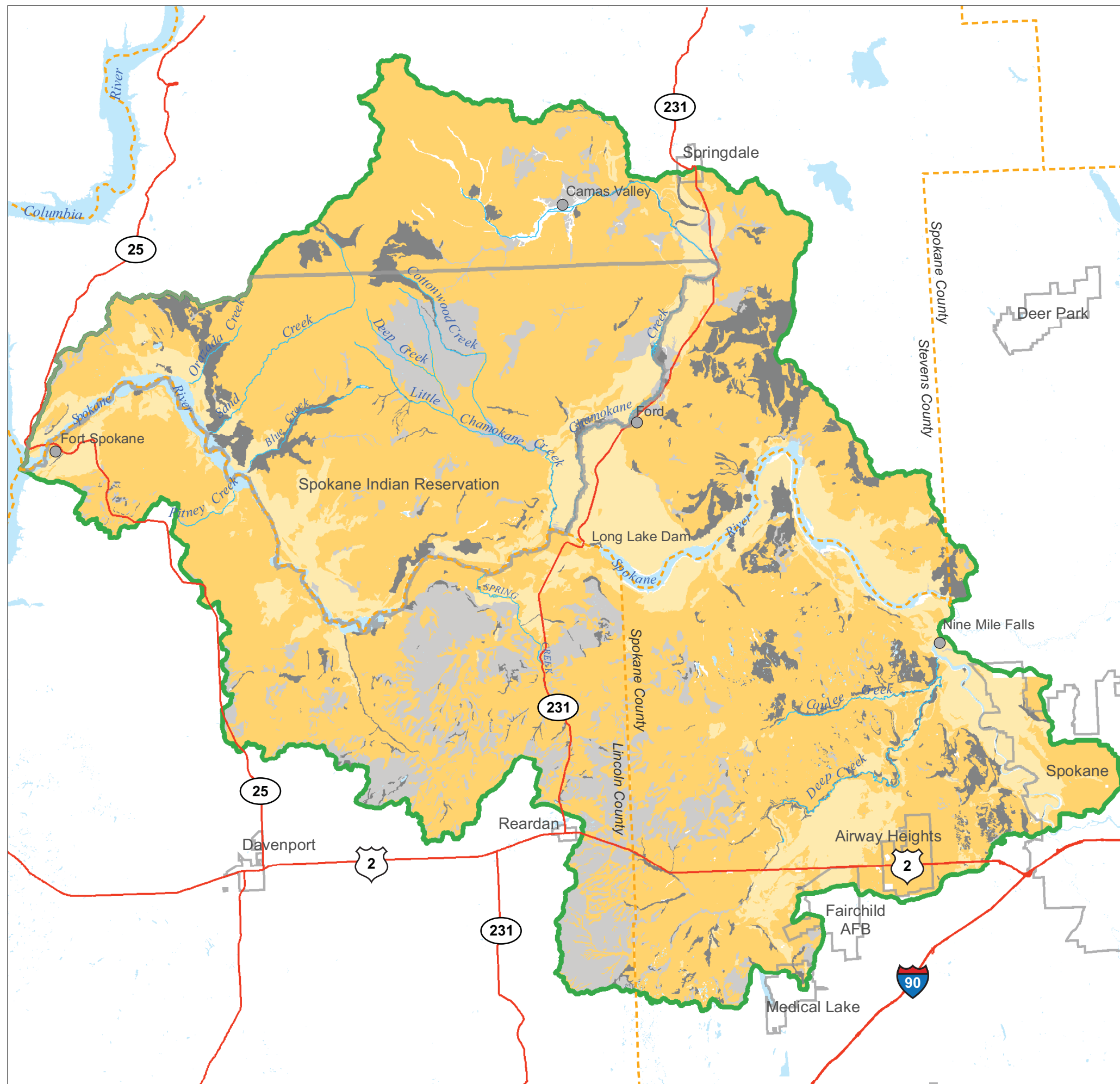


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Figure 2-12  
 WRIA 54  
 Hydrologic Soils



**Legend**

- Soil Hydrologic Group**
- Group A  
Well Drained Soils
  - Group B  
Moderately Well Drained Soils
  - Group C  
Moderate-Poorly Drained Soils
  - Group D  
Poorly Drained Soils
- Major Road
  - County Boundary
  - Stream
  - WRIA54 Boundary
  - Jurisdiction
  - Waterbody

*Data Sources:*  
 Streets, Waterbodies, Streams,  
 County Boundary - Washington DNR  
 Hydrologic Soil - SSURGO (USDA)  
 WRIA Boundary - Washington DOE



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**TABLE 2-5.  
FISHERIES IN WRIA 54<sup>1</sup>**

Important Species	Life Stages and Timing	Comments
<b>Spokane River Main Stem—Latah Creek to mouth of Deep Creek</b>		
Rainbow trout (redband)	<ul style="list-style-type: none"> <li>• Spawning/incubation</li> <li>• Rearing</li> </ul>	Pure redband rainbow trout strains exist in the free-flowing reach. Supports all life stages of rainbow trout and mountain whitefish along the free-flowing reach.
Mountain whitefish	<ul style="list-style-type: none"> <li>• Spawning/incubation</li> <li>• Rearing</li> </ul>	
<b>Spokane River Main Stem—Lake Spokane (Long Lake)</b>		
Rainbow trout (hatchery and wild)	<ul style="list-style-type: none"> <li>• Rearing</li> </ul>	Wild can be reproducing introduced fish
Mountain whitefish	<ul style="list-style-type: none"> <li>• Rearing</li> </ul>	
Bass and Crappie (introduced)	<ul style="list-style-type: none"> <li>• Rearing</li> <li>• Spawning</li> </ul>	State manages Lake Spokane as a mixed species fishery.
Brown trout (introduced)	<ul style="list-style-type: none"> <li>• Rearing</li> </ul>	Low Dissolved Oxygen
<b>Spokane River Main Stem—Little Falls Pool</b>		
Chinook (re-introduced)	<ul style="list-style-type: none"> <li>• Tributary spawning potential</li> <li>• Rearing</li> </ul>	Low Dissolved oxygen High Total Dissolved Gas High Temperature
Mountain Whitefish	<ul style="list-style-type: none"> <li>• Tributary spawning</li> <li>• Main stem potential spawning</li> <li>• Rearing</li> </ul>	
Rainbow trout (hatchery and wild)	<ul style="list-style-type: none"> <li>• Tributary spawning</li> <li>• Mainstem potential spawning</li> <li>• Rearing</li> </ul>	
Brown trout (introduced)	<ul style="list-style-type: none"> <li>• Rearing</li> <li>• Tributary spawning</li> <li>• Mainstem spawning potential</li> </ul>	
Bass (introduced)	<ul style="list-style-type: none"> <li>• Rearing and spawning</li> </ul>	
1. Note that this is not an all inclusive list of species and doesn't necessarily reflect management objectives for those bodies of water.		



<b>TABLE 2-5 (continued). FISHERIES IN WRIA 54</b>		
Critical Species	Life Stages and Timing	Comments
<b>Spokane River Main Stem—Spokane Arm of Lake Roosevelt</b>		
Rainbow trout (hatchery and wild)	<ul style="list-style-type: none"> <li>• Rearing</li> <li>• Spawning potential</li> </ul>	High Total Dissolved Gas Low Dissolved oxygen
Mountain whitefish	<ul style="list-style-type: none"> <li>• Rearing</li> <li>• Spawning potential</li> </ul>	
Chinook (re-introduced)	<ul style="list-style-type: none"> <li>• Rearing</li> </ul>	
Sturgeon (introduced and wild)	<ul style="list-style-type: none"> <li>• Adult</li> <li>• Rearing</li> <li>• Spawning potential</li> </ul>	
Walleye (introduced)	<ul style="list-style-type: none"> <li>• Rearing and spawning</li> </ul>	
Bass (introduced)	<ul style="list-style-type: none"> <li>• Rearing and spawning</li> </ul>	
Kokanee (hatchery and wild)	<ul style="list-style-type: none"> <li>• Rearing</li> <li>• Spawning potential</li> </ul>	
<b>Chamokane Creek</b>		
Mountain whitefish	<ul style="list-style-type: none"> <li>• Adult spawning</li> <li>• Juvenile rearing</li> </ul>	
Rainbow trout, Brown trout, Brook trout	<ul style="list-style-type: none"> <li>• Adult—spawning and rearing</li> <li>• Juvenile rearing</li> </ul>	Temperature/flow limited
Chinook	<ul style="list-style-type: none"> <li>• Adult—spawning</li> </ul>	
<b>Little Chamokane Creek</b>		
Rainbow trout, Brown trout	<ul style="list-style-type: none"> <li>• Adult—rearing, spawning</li> <li>• Juvenile—rearing</li> </ul>	Flow limited
<b>Deep Creek</b>		
Rainbow trout	<ul style="list-style-type: none"> <li>• Spawning/incubation—April-June</li> <li>• Adult rearing—year-round</li> <li>• Juvenile rearing—year-round</li> </ul>	Redbands present but hybridized with coastal rainbows, majority of native genetic material is present. Year around flow to Gordon Road. Seasonal flow from that point to about 2 miles below. Dry below that, rarely watered up.
Eastern brook trout	<ul style="list-style-type: none"> <li>• Spawning/incubation—October-April</li> <li>• Adult rearing—year-round</li> <li>• Juvenile rearing—year-round</li> </ul>	

<b>TABLE 2-5 (continued). FISHERIES IN WRIA 54</b>		
Critical Species	Life Stages and Timing	Comments
<b>Coulee Creek</b>		
Rainbow trout	<ul style="list-style-type: none"> <li>• Spawning/incubation—April-June</li> <li>• Adult rearing—year-round</li> <li>• Juvenile rearing—year-round</li> </ul>	Coulee Creek has a pure strain of redband rainbow trout. This plus the support of all life stages makes it a high priority. Year around flow on upper portion only. Seasonal flow from that point to approx. 2 miles downstream. From that point to mouth is dry, rarely watered up
Eastern brook trout	<ul style="list-style-type: none"> <li>• Spawning/incubation—October-April</li> <li>• Adult rearing—year-round</li> <li>• Juvenile rearing—year-round</li> </ul>	
<b>Spring Creek</b>		
Rainbow trout	<ul style="list-style-type: none"> <li>• Spawning/incubation—April-June</li> <li>• Adult rearing—year-round</li> <li>• Juvenile rearing—year-round</li> </ul>	Supports all life stages of rainbow trout. Genetic status is unknown.
Eastern brook trout	<ul style="list-style-type: none"> <li>• Spawning/incubation—October-April</li> <li>• Adult rearing—year-round</li> <li>• Juvenile rearing—year-round</li> </ul>	
<b>Mill Creek</b>		
Rainbow trout	<ul style="list-style-type: none"> <li>• Spawning/incubation—April-June</li> <li>• Adult rearing—year-round</li> <li>• Juvenile rearing—year-round</li> </ul>	Supports all life stages of rainbow trout. Genetic status is unknown.
Eastern brook trout	<ul style="list-style-type: none"> <li>• Spawning/incubation—October-April</li> <li>• Adult rearing—year-round</li> <li>• Juvenile rearing—year-round</li> </ul>	
<b>Blue Creek</b>		
Rainbow trout	<ul style="list-style-type: none"> <li>• All life stage</li> </ul>	
<b>Sand Creek</b>		
Brook trout, Rainbow trout	<ul style="list-style-type: none"> <li>• All life stages</li> </ul>	

**Washington State Waters Quality Standards (Reach 1: Spokane River Mouth to Long Lake Dam):**

- Aquatic Life= Spawning/Rearing
- Recreation=Primary Contact
- Water Supply=Domestic,Industrial,Agriculture,Stock
- Misc.=Wildlife, Harvesting, Commerce/Navigation,Boating, Aesthetics

**Washington State Waters Quality Standards (Reach 2: Long Lake Dam to Nine Mile Falls):**

- Aquatic Life= Core Summer Habitat
- Recreation=Extraordinary Primary Contact
- Water Supply=Domestic,Industrial,Agriculture,Stock
- Misc.=Wildlife, Harvesting, Commerce/Navigation,Boating, Aesthetics

**Spokane Tribe of Indians Water Quality Standards:**

- Cultural= Primary Contact Ceremonial and Spiritual
- Aquatic Life=Salmonid and other fish Migration, Rearing, Spawning, and Harvesting; Shellfish and Crustacean Rearing, Spawning, and Harvesting
- Recreation=Primary Contact
- Water Supply=Domestic, Industrial, Agricultural, Stock
- Misc.=Commerce/Navigation

**Washington State Waters Quality Standards (Reach 3: Nine Mile Bridge to the Idaho Border):**

- Aquatic Life= Spawning/Rearing
- Recreation=Primary Contact
- Water Supply=Domestic,Industrial,Agriculture,Stock
- Misc.=Wildlife, Harvesting, Commerce/Navigation,Boating, Aesthetics

**Figure 2-13**

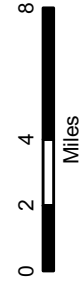
**WRIA 54  
Department of Ecology &  
Spokane Indian Tribe  
Water Quality Standards**

**Legend**

- Major Road
- County Boundary
- Stream
- WRIA 54 Boundary
- Jurisdiction
- Unincorporated Community
- Spokane Indian Reservation
- Water Body

**Data Sources:**

Streets, water bodies, streams, county boundaries, Spokane Reservation: Washington DNR  
Jurisdictions: County Data  
WRIA Boundary: Washington DOE  
Populated Places: USGS



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# WRIA 54

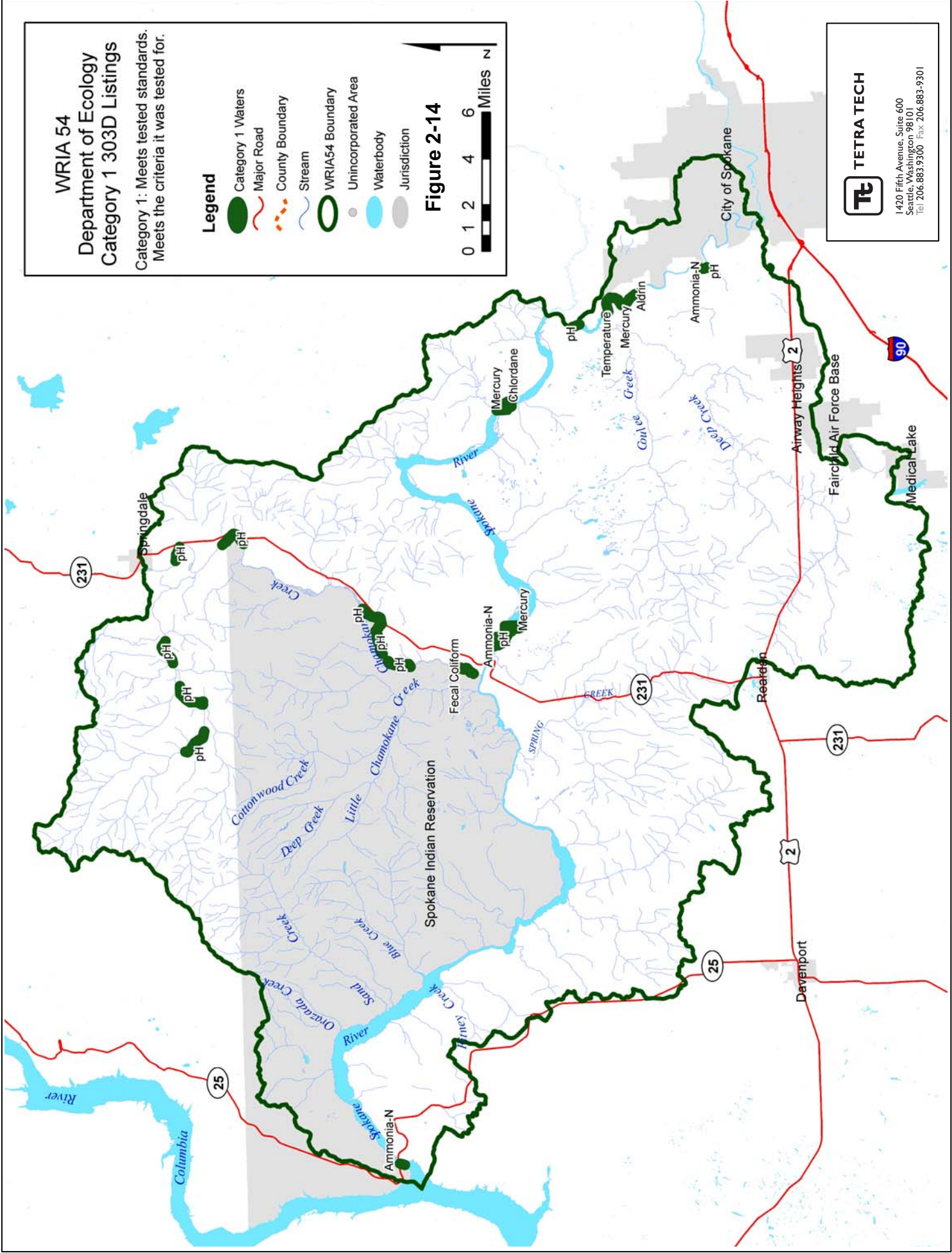
## Department of Ecology Category 1 303D Listings

Category 1: Meets tested standards.  
Meets the criteria it was tested for.

### Legend

- Category 1 Waters
- Major Road
- County Boundary
- Stream
- WRIA54 Boundary
- Unincorporated Area
- Waterbody
- Jurisdiction

### Figure 2-14











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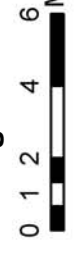


**WRIA 54**  
**Department of Ecology**  
**Category 2 303D Listings**  
 Category 2: Waters of Concern.  
 Some evidence of a water  
 quality problem, but not enough  
 to require production of a TMDL.

**Legend**

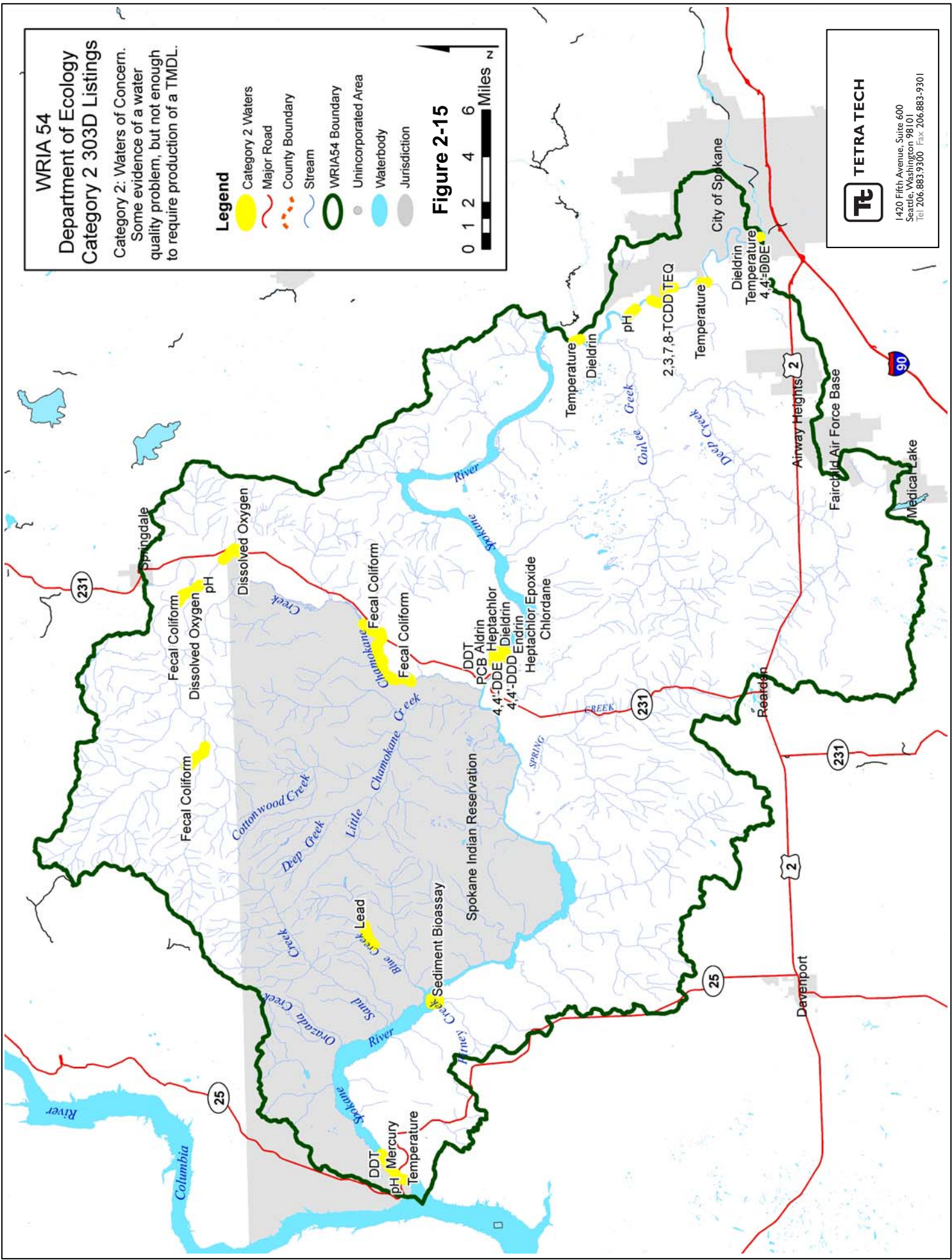
-  Category 2 Waters
-  Major Road
-  County Boundary
-  Stream
-  WRIA54 Boundary
-  Unincorporated Area
-  Waterbody
-  Jurisdiction

**Figure 2-15**



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# WRIA 54

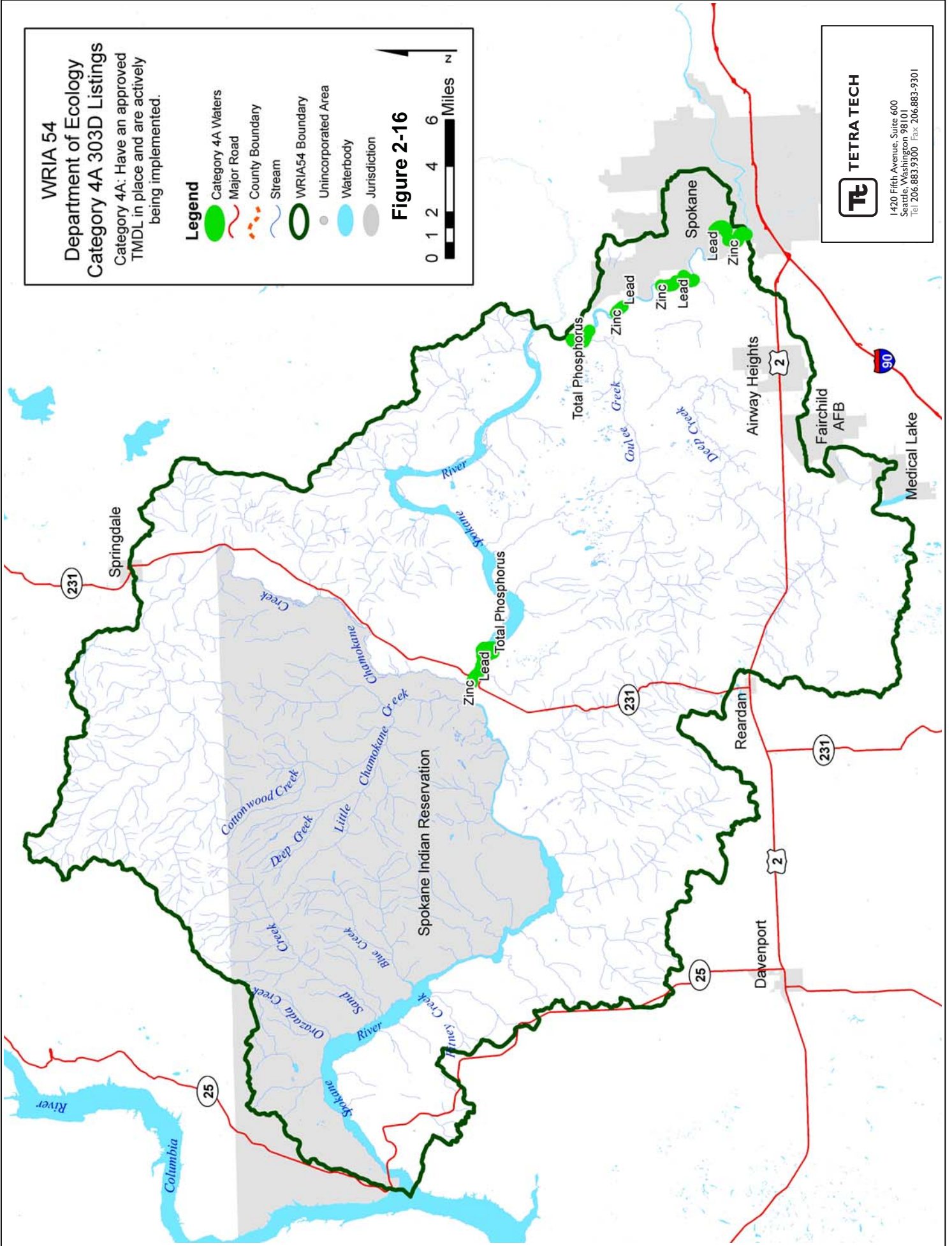
## Department of Ecology Category 4A 303D Listings

Category 4A: Have an approved TMDL in place and are actively being implemented.

### Legend

- Category 4A Waters
- Major Road
- County Boundary
- Stream
- WRIA54 Boundary
- Unincorporated Area
- Waterbody
- Jurisdiction

### Figure 2-16



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# WRIA 54

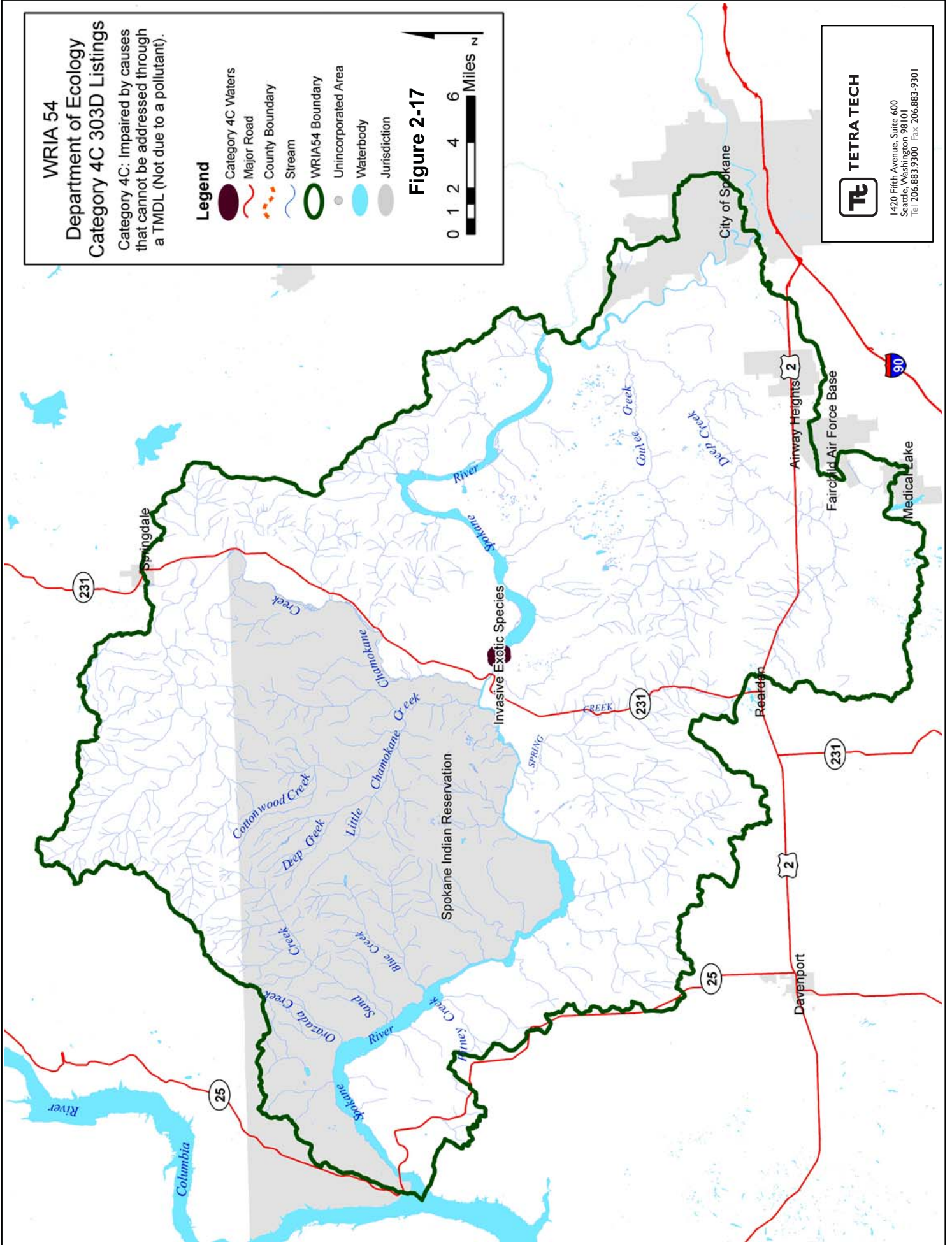
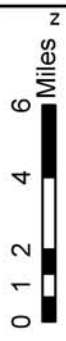
## Department of Ecology Category 4C 303D Listings

Category 4C: Impaired by causes that cannot be addressed through a TMDL (Not due to a pollutant).

### Legend

- Category 4C Waters
- Major Road
- County Boundary
- Stream
- WRIA54 Boundary
- Unincorporated Area
- Waterbody
- Jurisdiction

### Figure 2-17



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**WRIA 54**  
**Department of Ecology**  
**Category 5 303D Listings**

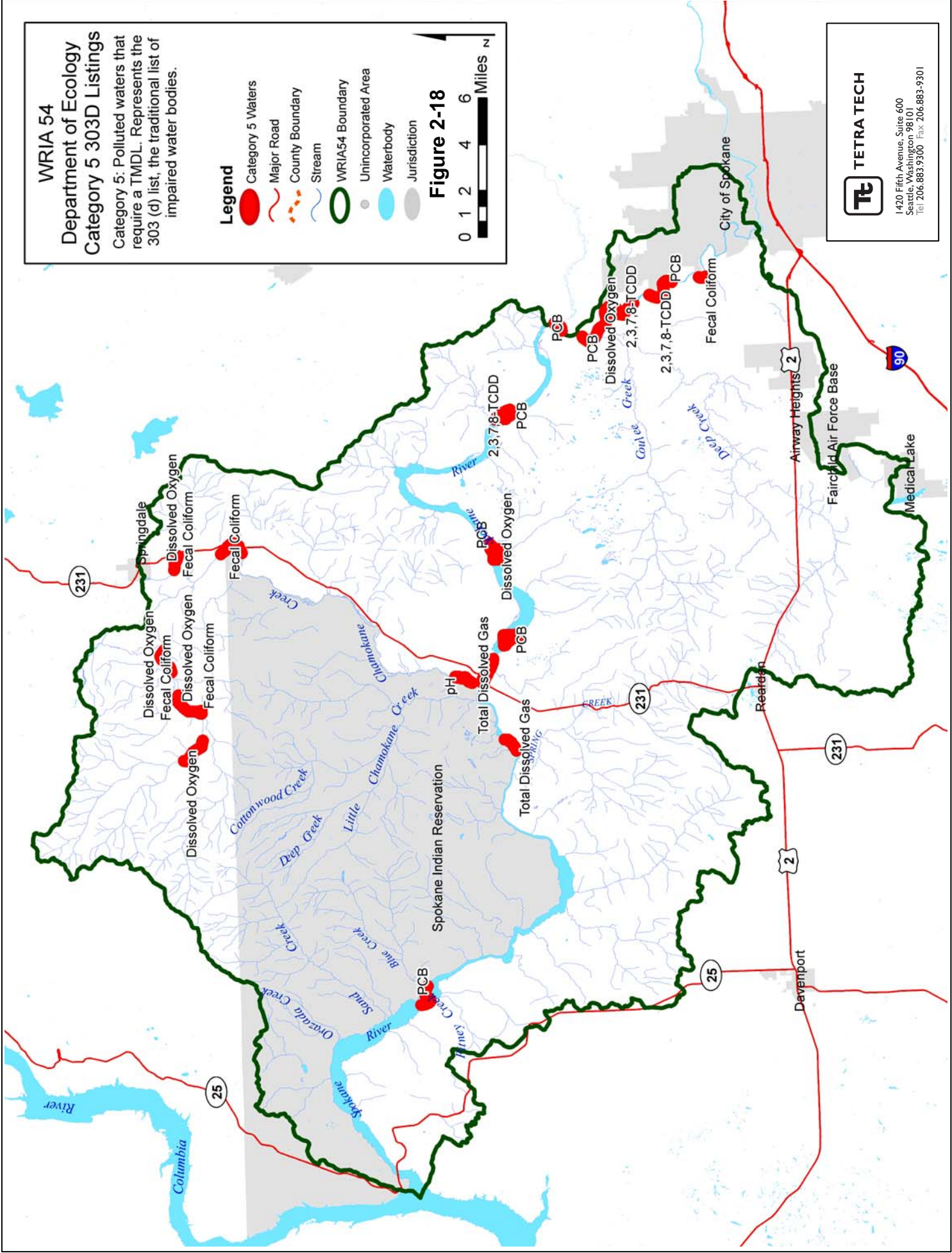
Category 5: Polluted waters that require a TMDL. Represents the 303 (d) list, the traditional list of impaired water bodies.

**Legend**

- Category 5 Waters
- Major Road
- County Boundary
- Stream
- WRIA54 Boundary
- Unincorporated Area
- Waterbody
- Jurisdiction

**Figure 2-18**

0 1 2 4 6 Miles



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## **CHAPTER 3.**

# **SUMMARY OF PREVIOUS WRIA 54 STUDIES**

Development of the WRIA 54 Watershed Plan included numerous studies to gather required technical information and to analyze appropriate measures for future watershed management. This chapter summarizes the work done in the previous studies and the conclusions and recommendations developed through them. The full report for each for each of these technical studies may be obtained from the WRIA 54 project website: <http://www.spokanecounty.org/wqmp/project54/asp/home.asp>

### **PHASE 2 LEVEL 1 ASSESSMENT**

The *Level 1 Data Compilation and Technical Assessment* was the first comprehensive compilation and synthesis of water-resource data for WRIA 54. The Planning Unit used the data assembled for the technical assessment to make recommendations for water quantity, instream flow, and water quality issues. Compiled data included the following: watershed characteristics, including surface water, groundwater, population, and land use; water rights; water use; water balance; future water needs; potential future water sources; and water quality. Much of the watershed characteristics description in Chapter 2 is drawn from the Phase 2 Level 1 Assessment. Other findings regarding water resources in WRIA 54 are summarized in the following sections.

#### **Water Rights**

The Level 1 Assessment recommends the following targeted studies:

- Investigate the largest claims (claims are assertions that water was first put to use before the water code went into effect) to evaluate the likelihood that they are actively being used, and if so, the nature of the use. Water right claims are often not being used to the extent of the claim, and may not be valid water rights.
- Further investigate potential duplicate claims to establish greater confidence that they can be removed from water-rights calculations.
- The estimates for permit-exempt wells in the Level 1 Assessment may overlap significantly with groundwater claims for small quantities that may serve single domestic needs. A study to evaluate the magnitude of this overlap would help refine the understanding of this potential appropriation.

#### **Water Use**

Actual current gross consumptive water use in WRIA 54 was estimated for several types of uses:

- Irrigation—27,223 acre-feet per year
- Large public water systems (Group A systems)—22,802 acre-feet per year
- Permit-exempt wells—5,792 acre-feet per year
- Small public water systems (Group B systems)—39 acre-feet per year
- Stock watering—259 acre-feet per year
- Other uses—524 acre-feet per year

The total estimated current use in WRIA 54 (56,639 acre-feet per year) is well below the amount allocated by potential water rights (147,411 acre-feet per year).

## Water Balance

The Spokane River accounts for 4,845,000 acre-feet of the total annual inflow to WRIA 54 and 5,278,000 acre-feet of the annual outflow from the watershed. Table 3-1 summarizes the estimated annual water volumes for the water balance components evaluated for the Level 1 Assessment.

Component	Average Annual Volume (acre-feet)	% of Total
<b>Inflows</b>		
Surface Water Inflow	5,502,871	91.6%
Groundwater Inflow	130,340	2.2%
Precipitation	333,972	5.5%
Imported Water <sup>a</sup>	40,825	0.7%
<b>Total Inflow</b>	<b>6,008,006</b>	<b>100%</b>
<b>Outflows</b>		
Surface Water Outflow	5,280,479	84.5%
Groundwater Outflow	15,922	0.3%
Evapotranspiration <sup>b</sup>	923,212	14.8%
Exported Water	267	0.0%
Net Demand <sup>c</sup>	25,970	0.4%
<b>Total Outflow</b>	<b>6,245,849</b>	<b>100%</b>
Difference Between Outflow and Inflow	237,843	
% Difference Between Outflow and Inflow	4.0%	
a. Discharge of treated wastewater effluent from sources outside the watershed b. Loss of water through evaporation to the atmosphere and uptake by plants c. Municipal, domestic, commercial, industrial and agricultural water consumption		

## Future Water Needs

Future water needs may possibly increase by approximately 57 percent by 2025, based on WRIA 54 growth projections and current zoning. This increase will likely be focused in two areas—the West Plains region of Spokane County and near the Spokane River downstream from the City of Spokane. The increase may exceed 57 percent in those areas.

Meeting the demand for water in the future will likely require innovative solutions. As shown in the WRIA 54 basin-wide water balance (Table 3-1), estimated net demand for consumptive water needs is only 0.4% of the overall water resources in WRIA 54. Municipal purveyors' inchoate (appropriated but currently unused) water rights could help meet this future demand depending upon the outcome of the

Supreme Court case that is evaluating the municipal water law. Note that not all purveyors have inchoate water rights. Water conservation and storage can be an important component in meeting current and future water supply needs.

## Potential Future Water Sources

Water availability considerations for WRIA 54 include the following:

- Surface water could be available for future allocation from the Lower Spokane River, subject to senior water rights, including the Spokane Tribe (unquantified federal reserved water rights) and Avista (hydroelectric power generation of about 7,500 cfs)..
- Seasonal, or winter surface water could be available for future allocation from tributaries of the Lower Spokane River if further investigation shows it could be done with acceptable impacts. Currently most of the tributaries are closed or subject to minimum instream flows established as surface water source limitations (SWSL). The tributaries are often dry in many reaches during the summer, or do not meet the minimum flows established in the SWSLs.
- The paleochannel aquifers appear to be a relatively promising source for additional groundwater allocation.
- The CRBG aquifers in the West Plains area appear to have significant existing groundwater mining and well interference issues, and could be over-allocated.
- CRBG aquifers in the southwest portion of WRIA 54 could present an opportunity for significant additional withdrawal in this area.
- The SVRP Aquifer may provide opportunities for seasonal (winter or spring) withdrawal of water for storage to supplement summer low flows.

## Water Quality

The water quality information provided with the Level 1 Assessment is limited to a brief summary of water quality information related to total maximum daily loads (TMDLs) developed for the Spokane River and Lake Spokane (Long Lake). The TMDLs are associated with the following water quality parameters:

- Dissolved oxygen
- Dissolved metals
- Polychlorinated biphenyls (PCBs)
- Total phosphorus.

## SUPPLEMENTAL WATER QUALITY ASSESSMENT

The supplemental water quality report provided a detailed assessment of water quality conditions in the Lower Spokane River from existing data and studies. Based on a complete inventory of water quality data for water bodies in WRIA 54, the supplemental assessment identified the following key issues:

- **Low Dissolved Oxygen Levels in the Spokane River**—Low dissolved oxygen levels have long been identified as a problem in Lake Spokane and downstream. A 1992 TMDL addressed the problem through controls on phosphorus loading to the Spokane River system. These controls were later determined to be inadequate to solve the problem, and Ecology began developing a new TMDL in 1998. Ecology's September 2007 *Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load Water Quality Improvement Report*

recommends three steps to address the problem: phosphorus reductions for wastewater dischargers; a regional non-point source pollution reduction program; and a septic tank elimination program. Dissolved oxygen problems downstream may be partially resolved through the TMDL process, but it is likely that additional efforts will be needed, particularly in the Spokane Arm of Lake Roosevelt. Currently, the Spokane Tribe is conducting modeling studies to evaluate the impact of various upstream management scenarios on water quality in the downstream reaches.

- **Dissolved Metals in the Spokane River**—Historical mining activities in Idaho have resulted in elevated levels of dissolved metals such as lead and zinc in the Spokane River. An Environmental Protection Agency (EPA)-approved TMDL is being implemented to correct this problem through source control and cleanup of selected Spokane River beaches where contaminated sediments had accumulated.
- **Elevated PCB Levels**—All reaches of the Spokane River have been found to have PCBs well above the National Toxics Rule criterion. Ecology is developing a TMDL to address PCBs in the Spokane River system (draft released June 2006). Sampling performed for the TMDL suggests that about 20 percent of instream PCB load comes from industrial and sewage treatment facilities. Stormwater discharge from the City of Spokane may periodically deliver PCB load to the Spokane River.
- **Temperature, Turbidity, pH and Fecal Coliform in the Little Spokane River**—A TMDL study is underway to investigate these pollutants in the largest tributary to the Spokane River in WRIA 54.
- **Ammonia, Dissolved Oxygen, Fecal Coliform Bacteria, pH, Temperature and Turbidity in Latah Creek**—Spokane County Conservation District is leading development of a TMDL water quality improvement plan for these water quality problems in Latah Creek.
- **Total Dissolved Gas**—Total dissolved gas levels exceed state and tribal water quality standards in reaches of the Spokane River below Long Lake and Little Falls Dams. Elevated levels are usually caused by spill events on the river at hydroelectric projects. It is expected that measures to reduce total dissolved gas will be included in the 401 Water Quality Certification needed from Ecology as part of Avista Utilities' Federal Energy Regulatory Commission relicensing.
- **Midnite and Sherwood Mines**—Midnite Mine is an open-pit, hard-rock uranium mine that was active between 1956 and 1962 and between 1971 and 1982. Waste rock was dumped in piles, used to fill mine pits or spread on the surface. This changed surface water and groundwater flow and caused acid mine drainage. Once mining stopped, open pits left at the site filled with water. The EPA has designated the mine as a Superfund site and outlined required remediation. Five miles from Midnite Mine, the Sherwood Mine was operated by Western Nuclear from 1978 until 1984 and has since been successfully reclaimed.

The Dawn Mining Company uranium mill site near Ford and alongside Chamokane Creek is a third uranium mining-related cleanup site in WRIA 54. From the mid-50s to the early 80s, Dawn Mining Company conducted uranium milling at this 820 acre site. Most of the uranium ore processed at the site was obtained from the Midnite Mine. Since the mill was shut down, Dawn Mining Company has been in the process of cleaning up the mill site, including demolition and burial of site buildings, contaminated soil removal and disposal, and contaminated ground water remediation. During the late 1980's, groundwater contamination was found in seeps and springs discharging to Chamokane Creek. Cleanup and reclamation activities are ongoing at the site, with a targeted completion date in 2013 (Washington Department of Health, 2008).

- **West Plains Missile Site**—A combination of chemicals associated with rocket motor facilities has been detected in several West Plains wells in the Deep Creek area. An association with the 1 Fairchild Nike Battery 87 anti-aircraft guided missiles that were historically located near this site is suspected. The Spokane Regional Health District states that the long-term health risks appear to be low, but filters have been installed at wells where elevated contaminant levels were found. The EPA has not concluded its investigation.
- **Non-Point Source Pollution**—Very little work has been done to identify and evaluate pollution impacts from non-point sources on WRIA 54 water bodies. The only completed non-point source assessment is work done by Stevens County Conservation District for the Chamokane Creek watershed. Most of the water quality concerns documented for the Chamokane Creek Watershed are likely to originate from non-point sources such as unstable stream banks and degraded riparian and channel conditions. The *Chamokane Creek Watershed Management Plan* provides specific recommendations to correct the identified water quality concerns. A large component of these recommendations relies on technical assistance and public education.

The supplemental water quality assessment concluded that most water quality problems in WRIA 54 are currently being addressed. Non-point source pollution problems are the most significant water quality issues for which new work is needed. The key recommendation of the assessment is to prepare quality assurance project plans to begin water quality monitoring programs for paleochannel aquifers in the West Plains region and for non-point pollution sources to Lake Spokane.

## QUALITY ASSURANCE PROJECT PLANS FOR WATER QUALITY MONITORING

A quality assurance project plan (QAPP) outlines procedures for collecting and analyzing water quality data. Two water quality monitoring programs are proposed for WRIA 54 as part of the Watershed Plan: one for the paleochannel aquifers in the West Plains area; and one focusing on non-point source pollution in the Nine Mile area around Lake Spokane. A QAPP was prepared for each program, as described in the following sections.

### West Plains Paleochannels

Paleochannels are historical surface drainage-ways that became filled with sediment during glacial flooding events. Because paleochannel sediments have a significantly higher vertical permeability and storage capacity than the surrounding basalt rock, they are of interest for water supply projects, aquifer storage and recovery projects, and the disposal/infiltration of stormwater and/or reclaimed water. Few water quality studies have focused on the paleochannel aquifers.

The *Quality Assurance Project Plan for the Paleochannel Water Quality Monitoring Study* outlines the following goals: assessment of water quality in paleochannel aquifers within the West Plains area, and the comprehensive evaluation of potential impacts of stormwater, wastewater and water supply projects already under consideration, in planning or under construction. Subsurface exploration, baseline groundwater quality monitoring, long-term groundwater quality monitoring, hydrogeologic analyses, and geophysical exploration will be performed to obtain the information necessary to achieve project objectives. The QAPP identifies the following parameters to be monitored:

- Field measurements:
  - Turbidity
  - Conductivity
  - Temperature
  - Dissolved Oxygen

- pH
- Oxidation Reduction Potential
- Groundwater laboratory measurements:
  - Total Persulfate Nitrogen, dissolved
  - Nitrate+Nitrite Nitrogen, dissolved
  - Total Phosphorus
  - Coliform, total
  - Coliform, fecal
  - Chloride, dissolved
  - Total Dissolved Solids
  - Iron, dissolved
  - Manganese, dissolved
  - Resource Conservation and Recovery Area 8 Metals (Silver, Arsenic, Barium, Cadmium, Chromium, Lead Selenium, Mercury)
- Surface water laboratory measurements:
  - Total Persulfate Nitrogen, dissolved
  - Nitrate+Nitrite Nitrogen, dissolved
  - Total Phosphorus
  - Coliform, total
  - Coliform, fecal
  - Biochemical Oxygen Demand
  - Chemical Oxygen Demand
  - Total Suspended Solids
  - Total Dissolved Solids
  - Chloride, dissolved
  - Iron, dissolved
  - Manganese, dissolved
  - Resource Conservation and Recovery Area 8 Metals (Silver, Arsenic, Barium, Cadmium, Chromium, Lead Selenium, Mercury)

## Nine Mile Non-Point Sources

The *Nine Mile Non-Point Sources Quality Assurance Project Plan* establishes the following goals for examining environmental conditions and making management decisions that would enhance beneficial uses of Lake Spokane in the Nine Mile area:

- Evaluate the potential impact of non-point sources of nutrients from land uses on water quality in Lake Spokane.
- Evaluate the potential impact of stormwater runoff within the study area on water quality in Lake Spokane.
- Establish a baseline water quality and long-term monitoring program to evaluate deviation from background concentrations.
- Identify the source for any elevated levels of non-point source pollutants identified through this or other monitoring programs.
- Evaluate the effectiveness of water quality best management practices in protecting downstream water quality.
- Describe an educational component, such as a volunteer monitoring program.

This QAPP outlines sampling and analysis methods that will generate data necessary to meet the following objectives:

- Determine the magnitude of nutrient input from leeching septic system nutrient input (e.g., multi-spectral imaging).
- Estimate the mass loading for nutrients from major tributaries.
- Evaluate the extent and source of non-point pollutants from tributaries.
- Characterize the magnitude of seasonal loading.
- Determine if internal loading of phosphorus is significant on the riverine and transition zones of the lake and estimate magnitude by a simple mass balance model.

The primary monitoring program outlined in the QAPP is to collect water quality samples from Lake Spokane. An optional additional element would sample water quality in the main stem of the Spokane River and in selected tributary streams. The following water quality constituents are to be measured:

- |                               |                        |                         |                |
|-------------------------------|------------------------|-------------------------|----------------|
| • Total Phosphorus            | • Chloride             | • Alkalinity            | • pH           |
| • Soluble Reactive Phosphorus | • Calcium              | • Hardness              | • Temperature  |
| • Total Nitrogen              | • Sodium               | • Chlorophyll- <i>a</i> | • Conductivity |
| • Nitrate+Nitrite Nitrogen    | • Total Organic Carbon | • Dissolved Oxygen      | • Turbidity    |
| • Ammonia Nitrogen            | • Totals Solids        |                         |                |

The following sediment constituents are to be measured:

- |                     |                        |                                |                                    |
|---------------------|------------------------|--------------------------------|------------------------------------|
| • Total Phosphorus  | • Total Organic Carbon | • Fe-P (iron-bound phosphorus) | • Al-P (aluminum-bound phosphorus) |
| • Mobile-Phosphorus | • Percent Solids       |                                |                                    |

## INSTREAM FLOW STUDY

A combined instream flow study for WRIs 54 and lower 57 was performed to assess fish habitat and instream flow needs of resident salmonids using PHABSIM methodology. Study objectives were as follows:

- Quantify the relationship between stream flow and available aquatic habitat for appropriate salmonid species and life stages for the study reach of the Spokane River.
- Quantify the preferred stream flow for trout rearing and spawning habitat, as appropriate, for Spring, Little Chamokane, Coulee and Deep Creeks.
- Provide a well-documented, scientific basis to serve as a decision-making tool for considering instream flow recommendations.

The study focused on the free-flowing portion of the Spokane River above Nine Mile Reservoir and below the Monroe Street Bridge in Spokane, spanning lower WRIA 57 and upper WRIA 54. The intent of doing additional work in WRIA 57 was to assess rainbow trout rearing habitat flow requirements. The modeled flow range in the main stem Spokane River is from 350 cfs to 16,000 cfs.

A simplified instream flow analysis based on “toe width” (the distance between the toes of the banks on the two sides of a stream) was conducted on four WRIA 54 tributary streams: Coulee, Deep, Little Chamokane, and Spring Creeks.



## Results

### Weighted Usable Area

Output from hydraulic modeling was combined with habitat suitability criteria for the target species life stages. The output from this model is expressed as flow (Q) in cubic feet per second (cfs) vs. weighted usable area (WUA), which is an index of available habitat per 1,000 lineal feet of stream, for each species and life stage of concern. WUA incorporates the hydraulic variables of width, depth, velocity, substrate and cover measured in the Spokane River with the habitat needs of each species and illustrates how the habitat for each species varies with changes in flow. Figure 3-1 shows Spokane River flow vs. WUA for WRIA 54 rainbow trout and mountain whitefish rearing and spawning life stages.

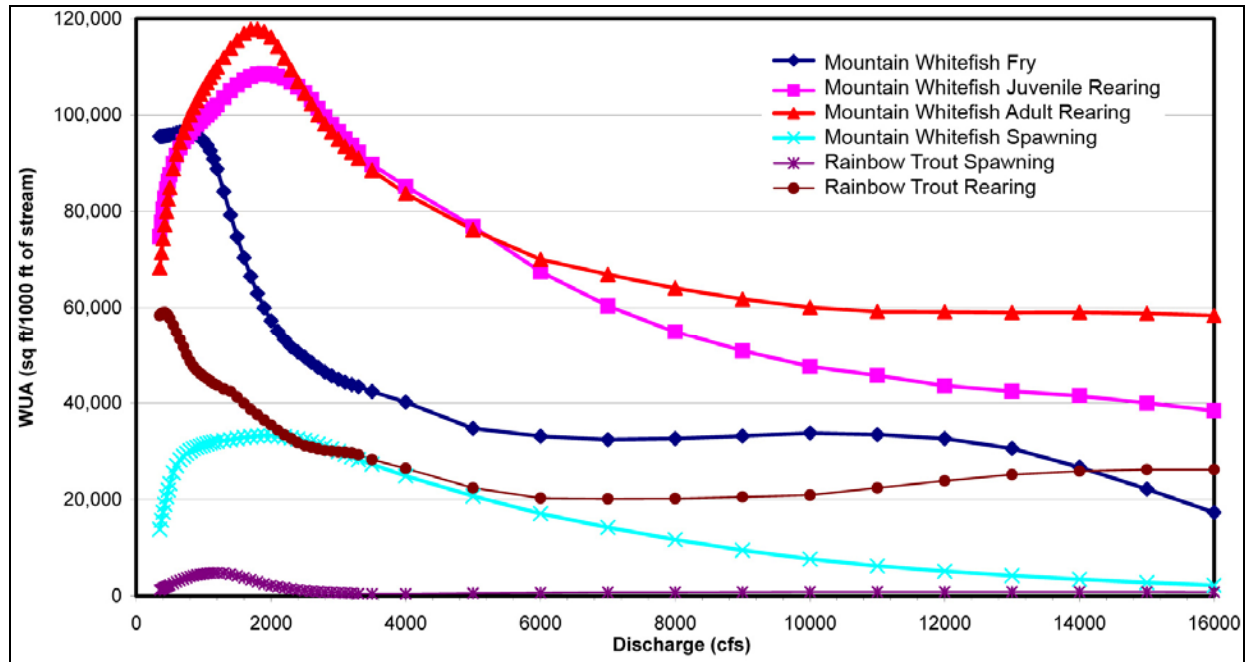


Figure 3-1. Spokane River Weighted Usable Area for Mountain Whitefish and Rainbow Trout in WRIA 54

### Hydrology

The Spokane River gage at Spokane has a long-term record and gives a good record of flow for WRIA 57; however, inflow from Latah Creek and groundwater accretion to the river throughout WRIA 54 contribute a substantial quantity of water that is not measured at the gage. During the summer, Latah Creek flows are generally low but groundwater can add 30 percent to the flow between the Spokane gage and the Gun Club. Low flow discharge comparisons of measurements at the Spokane River gage at Spokane on August 14 and the Gun Club site on the Spokane River on August 15, 2006 indicate significant inflow between the two sites. Flow at the Spokane gage was 867 cfs and flow at the Gun Club a day later was 1,069 cfs with similar flows at the Spokane gage.

Stream flow from the mountainous regions of the Spokane basin is highest from April through June as snowmelt fills the streams for an extended period, averaging 160 to 265 percent of the 6,685-cfs mean annual flow. August and September are generally the lowest flow months of the year with an average discharge of just 26 percent (approximately 1740 cfs) of mean annual flow. Fall and winter flows are generally moderate, averaging approximately 50 to 100 percent of mean annual flow.

**Tributary Stream Preferred-Flow Estimates**

Preferred tributary stream flows based on toe width were estimated for rainbow trout rearing and spawning (spawning flows were calculated only for Spring Creek, based on applicability of these methods for conditions in Spring Creek). Table 3-2 summarizes the results. Because very little flow data is available for these creeks, the frequency of these flows actually occurring is unknown and the results should be considered a starting point for instream flow needs analysis.

<b>TABLE 3-2. TOE WIDTH RESULTS FOR WRIA 54 TRIBUTARIES</b>	
<b>Creek</b>	<b>Preferred Discharge (cfs)</b>
<b>Rainbow Trout Rearing</b>	
Little Chamokane	7.2
Deep Creek	5.9
Spring Creek	4.2
Coulee Creek	5.5
<b>Rainbow Trout Spawning</b>	
Spring Creek	21.9

**Draft Recommendations**

**Balancing Needs of Target Species**

Habitat for both rainbow trout and mountain whitefish is important in the Spokane River and the two species’ habitat needs should be balanced on an equal basis. Peak WUA for each species generally occurs at a higher flow in the upstream Spokane River in WRIA 57 rather than downstream in WRIA 54.

**Example Draft Instream Flow Recommendations**

The purpose of the instream flow study was to show how the habitat for the selected species changes with changes in flow. The WRIA 54 and 57 Planning Units are best suited to formulate clear objectives and develop details of a comprehensive water resources plan which, for each watershed, will address the full range of water issues including instream flow. Recommendations will be based on subjective criteria that planning unit members may choose to consider such as the following:

- Criteria 1—The priority objective is protection of habitat for combined species.
- Criteria 2—The priority is maximum ability and flexibility to withdraw water while limiting effects on fish habitat.
- Criteria 3—Both future water use and protecting fish habitat are important and reflected in instream flow setting.

Further discussion on instream flow is contained in Chapter 9 of this plan.

**MULTIPURPOSE WATER STORAGE STUDY**

The Multi-Purpose Water Storage Assessment is a review of current storage and potential future storage opportunities in WRIA 54. The report summarizes a survey-level study to examine multi-purpose water

storage options that could be part of meeting the future needs of domestic, agricultural, and commercial/industrial uses. The study consisted of three elements:

- WRIA-wide screening of the full range of possible water storage projects, including structural and nonstructural projects, surface water and groundwater projects, and projects that are both large and small in scale.
- More detailed conceptual evaluation of water storage alternatives in the West Plains, a rapidly urbanizing region on the uplands west of Spokane with declining water level and a critical water need situation.
- Special focus on conceptual storage opportunities for the Chamokane Creek watershed.

The study found that WRIA 54 is suffering from inadequate water supply, with problems exacerbated in the West Plains area, where water purveyors are having difficulty providing water to customers and aquifers are showing signs of strain from existing water withdrawals. The population in the West Plains area is growing rapidly and for this reason action must be taken to supplement the West Plains aquifer.

An aquifer storage and recovery project in the Wanapum basalt aquifer or paleochannels shows promise for the West Plains. Such a project would require extensive analysis to evaluate feasibility, pilot testing, and construction of new infrastructure. Appropriate source water would also have to be identified.

While increasing the volume of water stored is one option, another opportunity for the region would be to simply increase the connectivity among water purveyors in the area so that water can be efficiently distributed where it is needed. Increased connectivity could consist of building more infrastructure for intermittent buying and selling of water or for permanent water rights transfers. Ecology would need to conduct an impairment analysis if out-of-basin transfers of water are proposed. Alternatively, if water use declines through the use of conservation and water reuse methods, then the requirement for new storage measures may be delayed many years into the future.

The state legislature has directed Ecology to “aggressively pursue” water storage opportunities to address a balance of water needs in the state (RCW 90.90), and provided specific criteria for the stored water. Chapter 7 of this plan discusses this topic in greater detail for WRIA 54, and provides specific recommendations for storage opportunities in WRIA 54.

WRIA 54 Planning Unit  
**WRIA 54 (Lower Spokane) Watershed Plan**

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**PART 2.**  
**TECHNICAL ISSUE MODULES**

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# CHAPTER 4. WATER RIGHTS ADMINISTRATION

State, federal and tribal water rights establish how water is legally allocated for domestic, municipal, agricultural, industrial, and instream uses. Although there are systems in place to manage water resources in WRIA 54 (such as water rights processing, water system planning and land use planning), not all components of these systems support efficient and effective management of water resources.

## UNCERTAINTIES ABOUT HOW MUCH WATER IS ALLOCATED

### Background and Issues

The ability to manage WRIA 54 water resources effectively is limited by uncertainties about how much water is allocated through water-right permits, certificates and claims, inchoate water rights, as well as unquantified federal reserved rights. This is further complicated by a lack of complete knowledge regarding actual water use. In addition, groundwater and surface water being potentially over-allocated is a concern in the West Plains (see Chapter 6).

The Washington Department of Ecology administers water rights, which include surface and groundwater permits and certificates, water-right claims (claims to water that pre-date the current water code in the state), and permit-exempt water uses. The state has developed regulations and policies related to water rights over time, and there is significant case law related to the issue (for a more detailed description of Washington State water law, refer to <http://www.ecy.wa.gov/programs/wr/wrhome.html>). Information about Ecology-administered water rights is most practically obtained from Ecology's water rights database, the Water Rights Application Tracking System (WRATS). However, the WRATS database records can be incomplete and include duplicates and errors.

Federal and tribal reserved water rights are not typically regulated by Ecology. These rights exist where the federal government sets aside land for a specific use, such as an Indian reservation, military base, or national park. These reserved water rights are not lost by non-use and can include surface water and groundwater. In WRIA 54, the Spokane Tribe holds quantified and unquantified reserved water rights established when the Spokane Reservation was created on August 18, 1877 and through a federal adjudication on Chamokane Creek. There are no federal reserved water rights for Fairchild Air Force Base because the water wells that supply Fairchild Air Force Base are located on acquired property, not on public domain land that was withdrawn for a specific Department of Defense purpose by an executive order, statute, or public land order.

The following list summarizes information on water allocation in WRIA 54, based primarily on information contained within WRATS, in addition to information for permit-exempt rights:

### **Recommendations**

- State legislature to provide more staff and funding to Ecology to process water rights and for compliance activities, including establishment of a regional water master.
- Ecology updates on water right activity.
- Consider subcommittee to prioritize subbasins for water rights processing
- Conservancy Boards develop and maintain database for water rights buyers and sellers
- Recommend that the Spokane Tribe develop a water code for the Spokane Tribe and Reservation.
- Planning Unit will review, discuss and recommend improvements to the relinquishment law.

- Water rights authorized by state-approved certificates or temporarily authorized by state-approved permits amount to a total annual allocation of 78,500 acre-feet (about 80 percent from groundwater sources and 20 percent from surface water sources).
- Water right claims, which are assertions of vested water rights established through beneficial use that began prior to state regulation of water rights, account for almost 38,000 acre-feet annually (about 50 percent from groundwater sources and 50 percent from surface water sources). These claims represent 26 percent of the potentially allocated water in WRIA 54.
- The Spokane Tribe holds quantified irrigation rights to Chamokane Creek totaling more than 25,000 acre-feet per year.
- Permit-exempt rights (which require no permit based on their size or intended use) are estimated to account for 5,800 acre-feet per year.
- The Spokane Tribe holds unquantified federal reserved water rights for areas outside Chamokane.

In total, about 147,411 acre-feet per year of water is allocated for use in WRIA 54 in addition to unquantified amounts. More detailed information is included in the *WRIA 54 Phase 2, Level 1 Data Compilation and Technical Assessment* (Tetra Tech et al., 2007).

## Consideration of Options

Uncertainties in WRATS include permits, certificates and claims that are not in use any more or where authorized water rates and volumes do not accurately reflect what is being used. An improved understanding of the amount of water appropriated in WRIA 54 could be refined through additional targeted studies, but only adjudication can validate these appropriations.

Water rights adjudication would be a major legal effort. Ecology is requesting funding of over \$1 million in its fiscal year 2010-2011 budget request to the Legislature for water rights adjudication in the Spokane River watershed (WRIAs 54, 55/57 and 56) in response to Idaho's decision to adjudicate water rights in northern Idaho. Ecology recognizes the increasing water demand along the Washington-Idaho border and that adjudication will support agreement on use of shared waters. Ecology has completed pre-adjudication water rights mapping in WRIA 54. This mapping represents the records of people who have water rights and have claimed water over time. Ecology's determination of actual amounts of water claimed or allocated has no particular legal standing- a court must adjudicate.

Water-right uncertainties contribute to the challenge of actively and responsibly managing water resources in WRIA 54. While adjudication would be a major undertaking, it appears to be the only way to resolve the uncertainties. The need for this is particularly acute because of declining river flows, increasing populations, climate change uncertainties, and the complexity of dealing with shared water resources across state boundaries.

## Recommendation

The Planning Unit chose not to include a recommendation regarding this topic.

## **DIFFICULTIES WITH WATER RIGHTS ADMINISTRATION**

### **Background and Issues**

Difficulties with existing water rights law and water rights administration fall into two broad categories:

- Areas where application of laws and regulations result in unintended negative consequences. Some believe an example of this is the “use it or lose it” aspect of water rights that discourages water conservation.
- Workload challenges, including at Ecology, where the workload associated with water rights exceeds available staff resources.

The following are the key issues associated with these two categories of difficulties:

- The timeline for processing new water rights is unreasonably long.
- The relinquishment rule is a disincentive for water conservation.
- Illegal unpermitted water use is an issue in WRIA 54, although the magnitude and location of illegal water use is uncertain.
- The Spokane Tribe does not currently have a water code to formally guide appropriation of water for the Spokane Reservation.

### ***Processing Time***

Water-right processing includes processing for new water rights as well as applications for water-right changes and transfers. Ecology processes water rights in order of application date within a subbasin or watershed, considering previously filed downstream applications and senior water rights. The following applications are pending as of January 2008:

- Seven applications for water rights transfers and changes:
  - Six change applications in the Airway Heights area
  - One change application in the central portion of WRIA 54, south of the Spokane River
- Thirty-nine applications for new water rights:
  - Thirty-seven applications for new water rights south of the Spokane River
  - Two applications for new water rights north of the Spokane River, close to the river in the Long Lake North subbasin.

Currently, Ecology’s impediments to water rights processing are insufficient funding and staff to manage the work, which includes processing permits, changes and transfers, field work, enforcement, research, public inquiries, and review of water system plans. Ecology’s past backlog of applications for water rights changes and transfers led to the establishment of a cost reimbursement process and Water Conservancy Boards, including those in Spokane, Stevens and Lincoln Counties (the three Counties involved in Watershed Planning in WRIA 54). Using Ecology’s cost reimbursement process, the applicant can have Ecology process a change or transfer by paying for processing for all other changes or transfers ahead in the line. This option has not been utilized in WRIA 54.

The Conservancy Boards have met the objective of more efficient processing for water rights changes and transfers and are generally able to work through changes and transfers and make recommendations to



Ecology within a year. Once Ecology receives a recommendation from a Conservancy Board, Ecology must make a decision on the change or transfer within 45 days (with allowance for a 30-day extension). The Stevens, Spokane and Lincoln County Water Conservancy Boards are required to inform the WRIA 54 Planning Unit when they are working on a WRIA 54 water right change or transfer.

Ecology has essentially stopped approving applications for new water rights in WRIA 54 for numerous reasons that apply to the watershed as a whole and to some subbasins specifically:

- Anticipation of instream flow recommendations and an instream flow rule for the Spokane River.
- Surface water source limitations (SWSLs) on file with Ecology for Deep Creek, Spring Creek and Mill Canyon Creek, which have resulted in an effective closure of these subbasins to new water rights appropriation due to water supply limitations related to fisheries concerns (pursuant to Revised Code of Washington (RCW) 77.57.020).
- The Washington Department of Fish and Wildlife's (WDFW's) policy not to allow additional water rights appropriation in small subbasins (i.e., those subbasins with streams with less than 5 cubic feet per second (cfs) mean annual flow) unless the appropriation of the water can be shown not to impact surface water pursuant to RCW 77.57.020.
- Case law and state law that recognize that groundwater and surface water are in hydraulic continuity unless there is evidence to suggest otherwise.
- Indications of groundwater mining in aquifers across the West Plains (located within the Airway subbasin of WRIA 54). The cities on the West Plains (including Airway Heights, Medical Lake and Four Lakes) and Fairchild Air Force Base obtain at least a portion of their water from the basalt aquifers. These water users may not be able to continue pumping at current levels.
- Adjudication and the SWSL on Chamokane Creek (located within the Ford subbasin of WRIA 54).

### ***Relinquishment Law***

The relinquishment law, commonly known as the “use it or lose it” law, is a disincentive for water conservation, in particular for agricultural water-right holders. Ecology is concerned about potential water rights speculation if there is no relinquishment provision. Agricultural groups will be presenting a proposal to the Legislature to increase the non-use period from 5 to 15 years and the look-back to 15 years only. The Planning Unit discussed this proposal but did not come to consensus on relinquishment for the WRIA 54 Watershed Plan. However, the Planning Unit acknowledges that unauthorized use of water and/or waste of water is illegal (RCW 90.03.400).

### ***Unpermitted Water Use***

There may be unpermitted water users in WRIA 54 who have either intentionally chosen to use water without the required water right, or are unaware of the laws requiring a water right. The magnitude of these illegal water uses is unknown at the present time. Identification of these illegal uses requires a review of complaints, air photos, water rights research, and field investigations. To date, Ecology has had limited resources to conduct such investigations.

### **Consideration of Options**

Without changes to state law, there is a limit to changes that can solve the issues described above. However, with adequate agency staffing, it would be possible to make headway and pursue more

innovative localized solutions to some of the problems associated with water rights. In addition, with continued interaction between Ecology and the WRIA 54 Planning Unit on water rights activity and potential decisions, there would be more opportunity for the values and priorities embodied in this watershed plan to be reflected in water-right administrative actions.

One approach would be for the Planning Unit to provide Ecology a prioritized list of subbasins within which to process water rights applications. While this would not replace individual public comment, a consensus-based prioritization developed by the Planning Unit should be used by Ecology in determining priorities. Input from the Planning Unit to Ecology would be used within the legal constraints for Ecology in processing water right applications.

The Planning Unit also feels that the Water Conservancy Boards in WRIA 54 need higher visibility and play more of a role in public education about water rights. This could be accomplished through more interaction between the Planning Unit and the Conservancy Boards in Stevens, Lincoln, and Spokane Counties.

## Recommendations

The following recommendations address difficulties with water rights administration, in no priority order:

- **Recommendation WRA-1:** Recommend that the State legislature provide more staff and funding to Ecology to process water rights and for compliance activities. The Planning Unit particularly encourages consideration of establishing a regional water master to support, for example, instream flow and adjudication, to enforce against illegal water use, to help process water right applications and transfers, and to provide public education on water rights.
- **Recommendation WRA-2:** Regular updates from Ecology to the Planning Unit regarding water right activity in WRIA 54. This will include water right applications, changes and transfers and any potential water rights decisions. Planning Unit members or the Planning Unit as a whole may provide input to Ecology through the normal public comment periods associated with these actions.
- **Recommendation WRA-3:** Consider prioritizing hydrologic subbasins for Ecology to process water rights applications. Note that all subbasins in a priority area would need to be included and that Ecology has to follow state laws to process water rights in order of application date, but can do so within a subbasin or watershed consistent with WAC 173.152 (water right application processing priorities).
- **Recommendation WRA-4:** Conservancy Boards in Stevens, Spokane and Lincoln Counties should develop and maintain a public database of willing water rights buyers and sellers within their respective Counties. The Conservancy Boards will need to make statements that the extent and validity of water rights in the database are not guaranteed. (This is currently being implemented by the Stevens County Water Conservancy Board.)
- **Recommendation WRA-5:** Recommend that the Spokane Tribe develop a water code for the Spokane Tribe and Reservation, including fee lands
- **Recommendation WRA-6:** Planning Unit will review, discuss, and recommend improvements to the relinquishment law.



# CHAPTER 5. PROMOTING EFFICIENT USE OF WATER

## BACKGROUND AND ISSUES

Washington’s Watershed Planning Act requires development of strategies for increasing water supplies and “the objective of these strategies is to supply water in sufficient quantities to satisfy the minimum instream flows for fish and to provide water for future out-of-stream uses . . . to ensure that adequate water supplies are available for agriculture, energy production, and population and economic growth” (RCW 90.82.070). Promoting efficient use of water is a significant component of providing water for future needs, including instream flow needs. This chapter focuses on ensuring that future water needs are addressed in a way that makes wise use of the available water resources. Chapters 6 and 7 discuss the overall needs for future water supply for out-of-stream water uses. Instream flow needs are addressed in Chapter 9.

## Water Conservation

Municipal water providers are required to develop water use efficiency and conservation measures. Water use efficiency and conservation planning requirements are based on the 2003 Municipal Water Law directing Ecology and the state Department of Health (DOH) to encourage water use efficiency. Water use efficiency and conservation planning may include regular water audits, outdoor landscaping and irrigation guidelines, retrofitting with low flow indoor fixtures, etc. Expanding systems and grant recipients are required to develop water use efficiency and conservation plans. There is no regular schedule for small water systems (systems with less than 1,000 connections) to develop water use efficiency and conservation plans.

There are a number of water use efficiency and conservation programs ongoing in and adjacent to WRIA 54:

- Purveyor water use efficiency and conservation planning (as a component of water system planning)
- County Conservation District, Natural Resources Conservation Service (NRCS) and Ecology programs for agricultural water conservation and irrigation efficiencies.
- Regional Water Conservation Collaboration (RWCC) between cities, counties, non-profits, water purveyors, Ecology and DOH, with the objective of improving communication on water conservation efforts
- City of Spokane Water Stewardship—a long-term water conservation plan for indoor and outdoor water use

### **Recommendations**

- Coordinate water use efficiency and conservation measures in WRIA 54 through the RWCC and Spokane County Coordinated Water System Planning.
- Local governments work toward improved water use efficiency in landscaping and other outdoor water uses.
- Counties, cities and purveyors develop and implement indoor and outdoor conservation incentives
- Purveyors provide notice to Planning Unit when they initiate water use efficiency/conservation goal setting
- Additional funding is needed to support implementation of water conservation and reclaimed water use.

### **Statements of Support**

- Support continued funding for County Conservation Districts and NRCS work with agricultural irrigators to assess and improve water use efficiency.
- Support development of and coordinate with surrounding WRIsAs for use of reclaimed water.

- Spokane Aquifer Joint Board water conservation education and outreach—comprising purveyors across the Spokane Valley Rathdrum Prairie (SVRP) Aquifer
- Washington-Idaho regional dialogue on coordinating bi-state water use issues.
- Spokane County outreach and education to Spokane County Utilities customers (note: customers are primarily located in WRIA 55/57)
- WRIA 55/57 watershed plan implementation, which includes outdoor irrigation education.

There is still much improvement that can be made regarding water conservation. In particular, agricultural irrigation and residential/municipal outdoor water use are the largest water uses in WRIA 54 (Tetra Tech et al., 2007).

## **Water Reclamation and Reuse**

Reclaimed water originates from treated wastewater and is safe for many non-potable uses, including: agricultural and landscape irrigation; industrial process and cooling water; dust control; street cleaning; creating wetlands and ornamental ponds; groundwater recharge; and lake level management. Washington State is developing rules for safe use of reclaimed water (Ecology Pub. No. 97-23) and anticipates these rules will be complete in 2010.

There are a number of ongoing or planned water reclamation and reuse programs in WRIA 54 and in adjacent WRIsAs:

- The City of Medical Lake uses reclaimed water for limited irrigation, and discharges reclaimed water into West Medical Lake to maintain lake levels. This is the only active permit in WRIA 54.
- The City of Airway Heights has completed planning and studies and has construction documents approved for a new water reclamation facility. The city will produce Class A reclaimed water that has been further treated to provide a water quality suitable for groundwater recharge basins.
- The City of Spokane has a current pilot project for water reuse on golf courses.
- The City of Spokane has completed a feasibility study to form an irrigation district using reclaimed water. One of the priority areas is located within WRIA 54.
- Fairchild Air Force Base, in partnership with others, is considering a number of water reclamation and reuse projects.
- Spokane County is planning and conducting studies in WRIA 55/57 for the regional water reclamation facility.

## **CONSIDERATION OF OPTIONS**

Water conservation is an important element of making good use of existing water resources. The Planning Unit supports water purveyors in developing water use efficiency and conservation measures and believes that there would be value in the WRIA 54 Planning Unit providing input to water purveyors in WRIA 54 through review of their water use efficiency and conservation plans (within review of new water system plans and plan updates). The purveyor will consider implementation of any recommendations made by the Planning Unit that are more stringent than conservation measures currently required in law. The Planning Unit can support water use efficiency and conservation efforts through watershed planning funds and through recommendations to funding agencies.

Water reclamation and reuse could play a much larger role in water management in WRIA 54. The Planning Unit encourages Ecology and DOH to develop robust rules for the safe use of reclaimed water in a timely manner.

## RECOMMENDATIONS

Water conservation and reclamation/reuse activities should be implemented regionally because of the cross jurisdictional and media marketing efficiencies in this approach. Several established programs are already in place to promote efficient use of water. The following recommendations build on these existing programs, presented in no priority order:

- **Recommendation WUE-1:** Coordinate water use efficiency and conservation measures in WRIA 54 through the existing Regional Water Conservation Collaboration (RWCC) and Spokane County Coordinated Water System Planning.
  - **Action to Consider in Implementation WUE-1.1:** Recommend that Ecology continues to support and participate in the RWCC.
  - **Action to Consider in Implementation WUE-1.2:** Encourage Lincoln County, Stevens County, Stevens P.U.D. and Medical Lake to participate in the RWCC; Ecology to send letter of invitation to entities that are not currently participating.
  - **Action to Consider in Implementation WUE-1.3:** Participate in development and implementation of a regionally consistent ordinance and/or education outreach to reduce outdoor irrigation after considering the recommendations from the Washington-Idaho regional dialogue.
- **Recommendation WUE-2:** Recommend that local governments work toward improved water use efficiency in landscaping and other outdoor water uses.
  - **Action to Consider in Implementation WUE-2.1:** Counties and cities find ways to design more efficient stormwater treatment and disposal that does not involve use of the conventional and thirsty grassy swale (these require irrigation). More drought resistant grasses and plants could be considered.
  - **Action to Consider in Implementation WUE-2.2:** Federal, state, county and city organizations should lead by example by developing and implementing water use efficiency and conservation plans to achieve efficient water use in federal, state, county and city facilities (including concessionaires within facilities).
  - **Action to Consider in Implementation WUE-2.3:** Develop incentives for xeriscaping (use of native and/or drought resistant vegetation) through existing and future planning processes.
  - **Action to Consider in Implementation WUE-2.4:** Review existing landscaping regulations and incentives for water efficiency and develop or improve regulations and incentives as applicable.
  - **Action to Consider in Implementation WUE-2.5:** In areas of strained water supply, encourage land use regulators (counties, cities, towns and the Spokane Tribe) and land developers to reduce landscape irrigation. Possible mechanisms could be plat conditions or covenants, , as applicable.
- **Recommendation WUE-3:** Recommend that counties, cities and water purveyors develop and implement indoor and outdoor water conservation incentives.

- **Recommendation WUE-4:** Recommend that purveyors provide notice to the Planning Unit when they initiate water use efficiency/conservation goal setting.
- **Recommendation WUE-5:** Additional funding is needed to support implementation of water conservation and reclaimed water use.
  - **Action to Consider in Implementation WUE-5.1:** Additional funding for water conservation incentives, credits and rewards (e.g., increased funding opportunities).
  - **Action to Consider in Implementation WUE-5.2:** Additional funding for indoor and outdoor water use efficiency and conservation for water systems and local governments (for appliances and equipment). This is currently being implemented by the City of Airway Heights and the City of Spokane.
- **Statement of Support WUE-6:** Where cost effective and appropriate, support continued funding for County Conservation Districts and NRCS work with agricultural irrigators to assess and improve water use efficiency.
- **Statement of Support WUE-7:** Where cost effective and appropriate, support development of and coordinate with surrounding WRIAs for use of reclaimed water:
  - **Action to Consider in Implementation WUE-7.1:** Encourage incentive programs for reclaimed water be used for existing and new agriculture in lieu of groundwater or surface water and to support new agricultural opportunities and landscape irrigation.
  - **Action to Consider in Implementation WUE-7.2:** Encourage Ecology’s water rights impairment sub-work group to develop clear recommendations related to reclamation and reuse in a timely manner.



# CHAPTER 6. PROVIDING WATER FOR FUTURE NEEDS

## BACKGROUND AND ISSUES

Consumptive water use in WRIA 54 in 2007 is estimated to be 56,639 acre-feet per year (Tetra Tech et al., 2007), with the breakdown by use as follows (see Figure 6-1):

- Irrigation (agricultural)—46 percent
- Municipal/domestic water use supplied by large water systems—42 percent
- Individual domestic supply and small water systems (primarily permit-exempt wells)—10 percent
- Other uses (e.g., seasonal irrigation of parks and cemeteries)—1 percent
- Stock watering—<1 percent

Water is supplied to users in WRIA 54 by water systems, which typically draw from several wells, by individual wells (typically permit-exempt), and by surface water diversions (typically for irrigation).

Future consumptive water needs are difficult to estimate because of uncertainties in where and how much population, agricultural and industrial growth will occur. Based on current zoning, water use could increase by as much as 57 percent by 2025 (Tetra Tech, 2007). However, medium growth projections for Spokane County alone predict an increase of about 29 percent by 2025.

### Recommendations

- Consider regional coordination for West Plains water supply
- Spokane Tribe water system improvements
- Form Chamokane Basin Watershed Council to resolve water-related issues in Chamokane Basin.
- Local governments and water purveyors assess subarea water supply needs, identify appropriate measures from a range of options, and facilitate options that are economically viable and provide long term sustainability of the resource.
- Identify and evaluate areas where permit-exempt wells are a concern. Develop management options.
- Explore water rights trusts, banking, water leasing and acquisition.
- Legislature should amend laws to allow water banking throughout the state.

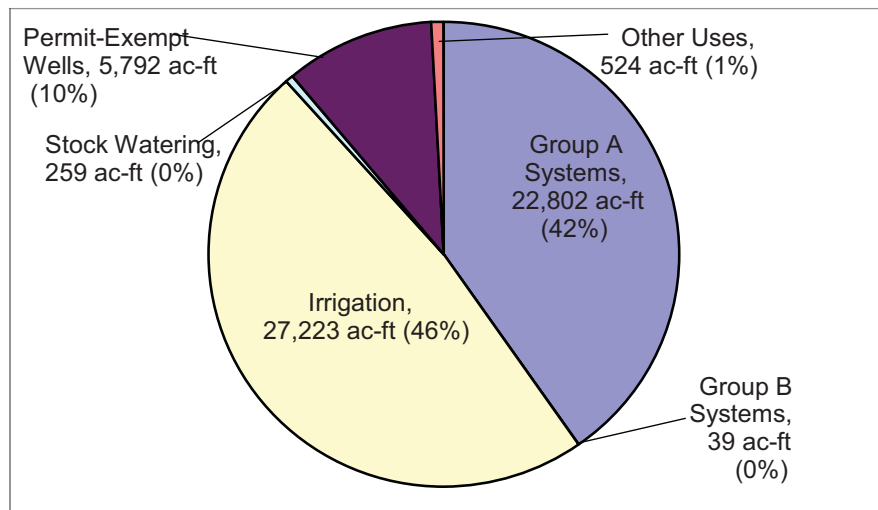


Figure 6-1. Estimated Annual Volume of Water Use in WRIA 54 by Category

Another difficulty in estimating future water needs is reconciling the quantity of water allocated already through water rights with how much water is actually being used. Excluding City of Spokane water rights, WRIA 54 water-right records indicate that 147,411 acre-feet of water per year is allocated, with actual water use estimated at 56,639 acre-feet per year (Tetra Tech, 2007). This amounts to about 62 percent of the water allocated in WRIA 54 not being used.

The unused allocation includes municipal inchoate water rights, held by most water purveyors to accommodate future population increases. An accurate quantity of inchoate rights for WRIA 54 cannot be confirmed because of legal issues surrounding these rights (the validity of municipal inchoate rights is under review by the Washington Supreme Court), but a rough tally of inchoate water rights is as follows:

- 6,700 acre-feet in certificated rights for Group A water systems, excluding the City of Spokane;
- Approximately 5,100 acre-feet in claims (primarily Fairchild Air Force Base); and
- Approximately 49,300 acre-feet in certificates held by the City of Spokane for the three wells that are currently connected to service WRIA 54 (Well Electric, Parkwater, and Nevada wells). Only the Nevada well is actually located within WRIA 54. These three wells also provide water to areas outside WRIA 54.

## **Areas of High Demand or Possible Strained Water Resources**

Strategies for future water needs in WRIA 54 must be tailored to specific needs of the area (see Figure 6-2). Water demand is expected to increase significantly for residential domestic and other municipal needs in two areas—the West Plains and along the Spokane River downstream from the City of Spokane (Lake Spokane urban growth area (UGA)). In other parts of the WRIA, the challenges associated with meeting future water demand revolve primarily around limited water availability (both lack of water and inability to get water rights).

### ***West Plains***

A lack of coordinated water supply planning and infrastructure development is creating a fragmented approach to meeting current and future water needs in the West Plains area, which includes the Cities of Airway Heights and Medical Lake, Fairchild Air Force Base, and numerous smaller water systems. Water purveyors on the West Plains are experiencing difficulty meeting demand from their own wells, and the basalt aquifers that supply their water are becoming strained. Fairchild Air Force Base draws from a productive well field near the Spokane River, but the base is considering other water source options. The West Plains is also a rapidly growing area for self-supplied residents, most of whom presumably draw water from individual permit-exempt wells.

As a backup, Fairchild Air Force Base and the City of Airway Heights use water from the City of Spokane, conveyed by pipeline from Spokane to the West Plains. Use of this intertie varies from year-to-year. Between October 2006 and October 2007, water use via the intertie increased, in part to offset withdrawals from the West Plains aquifer and to accommodate water system maintenance activities at Fairchild Air Force Base. The intertie provides redundancy and mitigation benefits for the users, but the cost encourages purveyors to rely on their own water sources as much as possible. During 2008, the City of Spokane infrastructure will extend to Craig Road and Highway 902 and may provide intertie opportunities for Medical Lake and Four Lakes.

### ***Along the Spokane River Downstream from the City of Spokane***

The area along the Spokane River downstream from Spokane, which includes Suncrest, Nine Mile, and Lake Spokane, is a rapidly growing residential area.

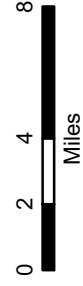
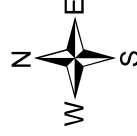
**Figure 6-2**

**Areas of High Demand and Possible Strained Water Resources**

**Legend**

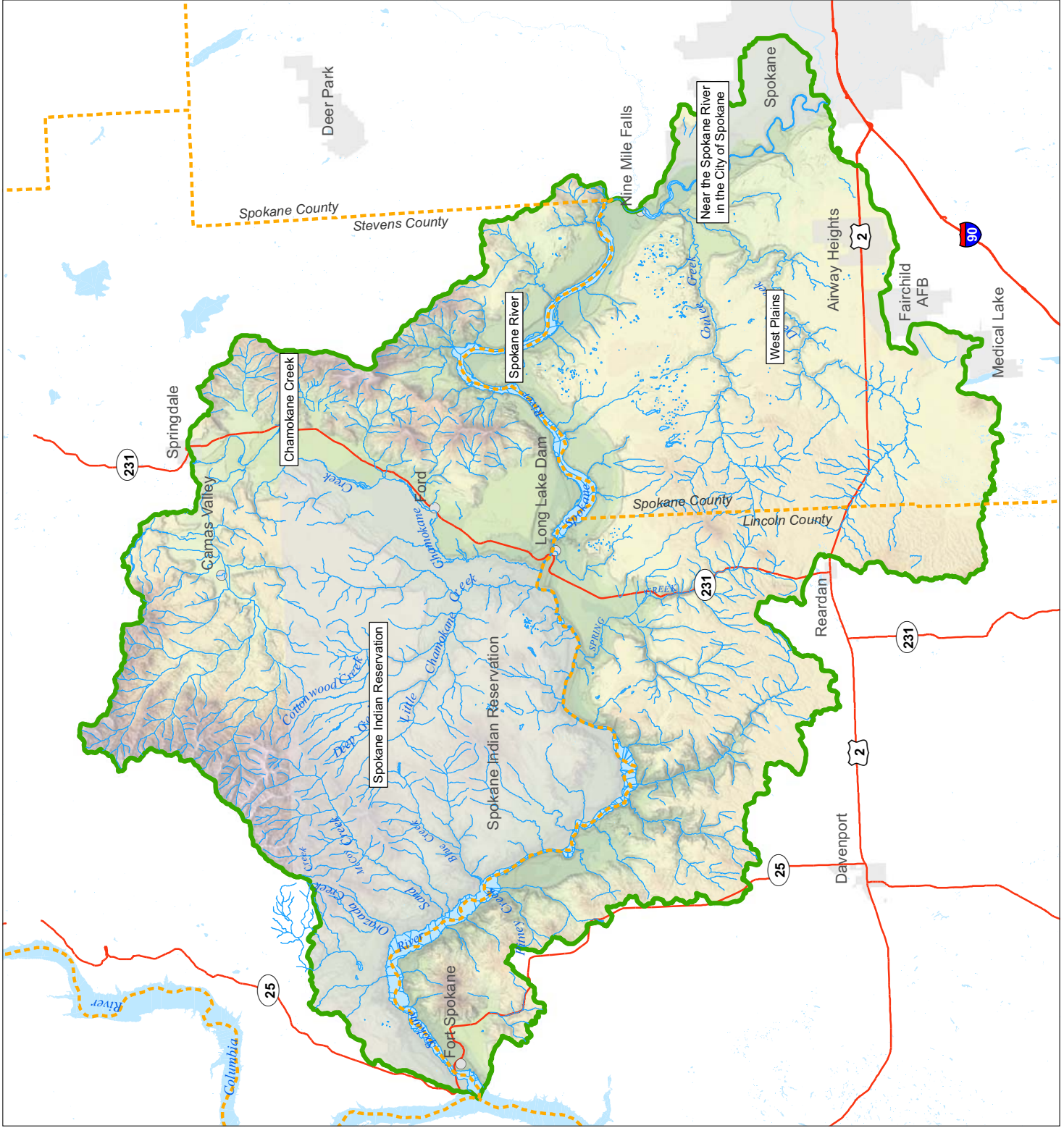
-  Major Road
-  County Boundary
-  Stream
-  WRIA54 Boundary
-  Spokane Indian Reservation
-  Areas of Strained Water Resources/High Demand

*Data Sources:*  
 Streets, Waterbodies, Streams  
 County Boundary, Spokane Indian Reservation - Washington DNR  
 Jurisdictions - County Data  
 WRIA Boundary - Washington DOE  
 Populated Places - USGS



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Water needs are provided through several wells by Stevens County PUD #1 and Spokane County Water District No. 3. Residents outside these water service areas rely on permit-exempt wells for water. Stevens County has recognized a portion of this as a rural urban growth area under the state Growth Management Act and the PUD is pursuing development of the infrastructure needed for the region, recently adding a 2-million-gallon water storage tank to the existing water storage and conveyance system. Currently, there is no indication that water is not available to meet future needs in this area; however, the impact of an increasing density of permit-exempt wells is not known. The potential water quality impacts of increasing urban/suburban development needs to be evaluated (see Chapter 10).

### ***Near the Spokane River Within the City of Spokane***

This narrow slice of WRIA 54 overlies the prolific SVRP Aquifer as described in Chapter 2, and is provided water through the City of Spokane water system. While the demand in this area is expected to increase, there is no indication that water service will be a problem in the future.

### ***Spokane Reservation Water Systems***

The Spokane Tribe operates several small water systems on reservation land in WRIA 54, three of which need attention: the Wellpinit water system in the Little Chamokane subbasin needs additional water sources; and the Ford and Martha Boardman water systems in the Chamokane subbasin are evaluating options to address elevated arsenic through an ongoing Indian Health Service study.

### ***Other WRIA 54 Areas***

Much of WRIA 54 is very dry, and seasonal availability of water may be limited. Recognition of this has led to Ecology policy decisions to limit or deny new water rights in many areas. This has led to a reliance on permit-exempt wells to provide water supply in these areas.

## **Permit-Exempt Wells**

“Permit-exempt well” is the common term for legal small groundwater uses that are exempt from applying for and obtaining a water right permit/certificate. Permit-exempt uses include the following:

- Water for livestock (no gallon per day limit or acre restriction- however there is currently active discussion regarding this use).
- Water for one or more non-commercial lawns or gardens with a total size of one-half acre or less (no gallon per day limit)
- Water for one or more homes (limited to 5,000 gallons per day).
- Water for industrial purposes, including irrigation (limited to 5,000 gallons per day but no acre limit).

Permit-exempt wells are currently the subject of much attention across Washington State because of challenges to the use of the permit exemption for multiple homes and certain industrial/commercial uses, and the general inability to obtain new water rights. Wells used under the permit exemption have the potential to strain water resources and impair other water users in areas with sensitive aquifer systems because limited assessments have been completed on their impact to water resources and other water users. Ecology has convened an exempt well working group—including state representatives, county planners and health officials—that is considering legislative proposals and Ecology/Washington Department of Health policy interpretation for permit-exempt wells.

Information about the number and location of permit-exempt wells is limited in some areas. Estimates are typically based on the assumption that all homes outside a water system service area must be self-supplied

through a permit-exempt well. For WRIA 54, this estimate is 3,600 wells. Based on Ecology's database, between 7,000 and 10,000 new wells are drilled in Washington State each year, with most of them permit-exempt (Washington Department of Ecology, 2007). Of all the Counties in Washington, Spokane County has had the greatest number of new wells drilled (over 4,000 wells drilled between 2000 and 2007, or an average of approximately 570 new wells per year).

The volume of consumptive water use for these permit exempt wells can only be estimated. A conservative estimate for WRIA 54 is 5,792 acre-feet per year, or about 10 percent of the estimated consumptive water use in WRIA 54 in 2007 (Tetra Tech et al., 2007). This estimate is based on an assumed daily usage of 1,412 gallons, based on DOH design guidance. Using methodology developed in the Colville River Watershed (WRIA 59) based on actual usage from four rural water systems, a potentially more realistic estimate is 2,484 acre-feet per year, or 4% of the estimated consumptive water use in WRIA 54. Neither estimate accounts for return flow/groundwater recharge through onsite drainfields, which may return approximately 50% of the withdrawn water to the groundwater system.

## CONSIDERATION OF OPTIONS

Figure 6-3 shows existing public water systems in WRIA 54. In areas of high development and strained water resources, water purveyors should consider the following: the ability of their source aquifers to provide water, the availability of water rights and wholesale water via interties when determining their service areas. Future instream flow assessments, recommendations and rule-making may consider the option of reservations of water for future growth as appropriate.

Across the West Plains, there has been a lack of communication among water purveyors. In 2006 and 2007, Ecology facilitated discussions among the West Plains purveyors to identify potential solutions to lack of water in some areas. In February 2007, the WRIA 54 Planning Unit collaborated with the WRIA 34 and WRIA 56 Planning Units to hold a summit at Eastern Washington University to discuss West Plains water issues. In July 2008, Spokane County started a geophysical study on the West Plains to assess depth to bedrock as an initial study to improve understanding of West Plains hydrogeology. The Planning Unit considered the options of improving coordination among purveyors across the West Plains by the formation of a West Plains Joint Board or updating the Spokane County Coordinated Water System Plan. Actual and potential future importation of water from WRIA 57 to WRIA 54 would increase available water resources, in particular to the West Plains area.

There is a potential for detrimental impacts on groundwater and surface water resources in certain areas of WRIA 54 due to growth of permit-exempt wells, particularly in areas where groundwater and surface water resources are already strained. The potential for impacts is higher if there is a high density of permit-exempt wells. The following areas in WRIA 54 have a potential for detrimental impacts associated with additional permit-exempt well water use if there is a high density of permit-exempt wells:

- West Plains—Currently agreed as a problem area by the Planning Unit as reflected by declining groundwater levels in the Columbia River Basalt Group aquifers.
- Chamokane Creek—Stream flows are declining and the only identified recent increase in water use has been via permit exempt wells. The U.S. Geological Survey (USGS) has begun a study, ordered by a federal court, to develop a groundwater flow model of the Camas Valley and Ford subbasins (the Chamokane drainage). It is expected that this study will characterize the hydrogeology of the basin and evaluate impacts of permit-exempt well water use on Chamokane Creek flows. The basin remains subject to oversight and administration by the federal court.

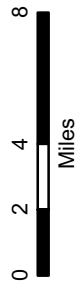
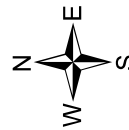
**Figure 6-3**

**WRIA 54  
Public Water  
System Service**

**Legend**

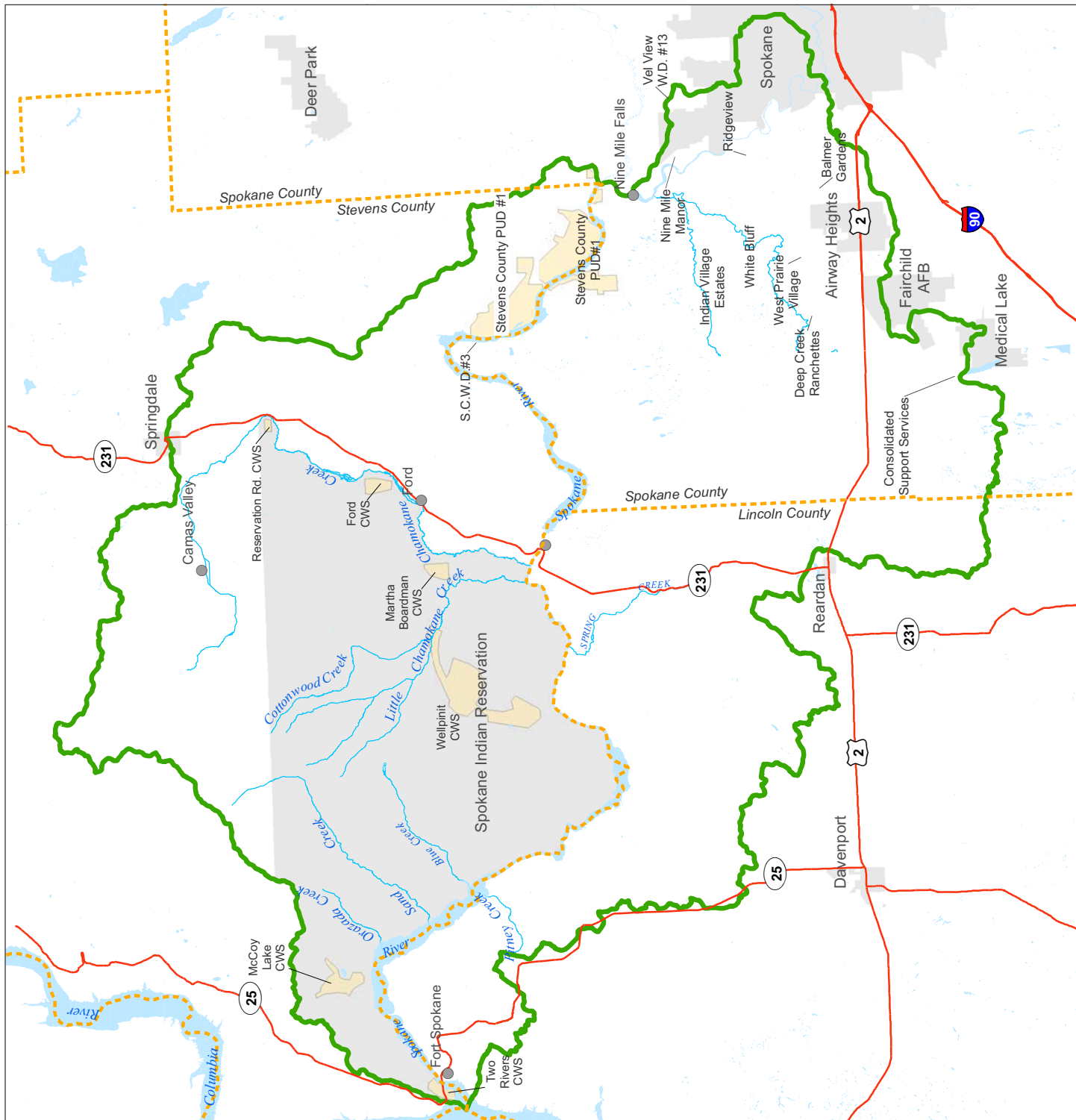
- Major Road
- Stream
- County Boundary
- WRIA54 Boundary
- Public Water Service Area
- Unincorporated Community
- Jurisdiction
- Waterbody

*Data Sources:*  
 Streets, Waterbodies, Streams;  
 County Boundary, Spokane Indian  
 Reservation - Washington DNR  
 Jurisdictions - County Data  
 WRIA Boundary - Washington DOE  
 Water Distribution - Stevens/Spokane County



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- Subbasins that have Surface Water Source Limitations (SWSLs) in place—Main stem Spokane River, Deep Creek, Spring Creek and Mill Canyon Creek. The SWSLs result in an administrative closure of the basins to new water-right appropriations due to low stream flows and fisheries concerns, as determined by the Washington Department of Fish and Wildlife.

Although it is important to proactively address the potential adverse impacts of permit-exempt wells, such wells may be the only water supply option in those areas where public water service is not available because of the water utility's lack of water rights. The use of permit exempt wells should be supported in these areas if public water is not available in a reasonable and timely manner and only where the proposed density is supported by water availability. Lincoln County, a primarily rural county, relies on permit exempt wells for single family homes and to support small (4 lots or less) development proposals. The County strongly encourages the use of engineered Group B water systems for these small development proposals

## RECOMMENDATIONS

The recommendations pertaining to strategies for providing water for future out-of-stream water needs focus on better coordination among water users in water-short areas of the WRIA. This are listed in no priority order:

- **Recommendation WFN-1:** Consider a regional management and coordination organization for water supply on the West Plains. The West Plains bridges WRIAs 54, 43, 56 and 34, Spokane and Lincoln Counties, and several cities, making a planning/management area specific to the West Plains necessary. This organization should encourage improvement of connectivity between water systems located on the West Plains, including Airway Heights, Medical Lake, Four Lakes and Fairchild Air Force Base, as allowed by cost and water right constraints.
  - **Action to Consider in Implementation WFN-1.1:** Groundwater Management Area— Designation of a sub-area, in accordance with RCW 90.44.400, that allows for development of a groundwater management plan that could include components such as water conservation agreements and requirements for new wells (locations, densities, depths, withdrawal rates, etc.), including permit-exempt wells.
- **Recommendation WFN-2:** Complete planning for water usage on the reservation and improvements needed for the Spokane Tribe's water systems.
  - **Action to Consider in Implementation WFN 2.1:** Inventory current water use of the Spokane Indian Reservation.
  - **Action to Consider in Implementation WFN 2.2:** Complete improvements needed to the Wellpinit, Ford, and Martha Boardman water systems.
- **Recommendation WFN-3:** Recommend formation of a Chamokane Basin Watershed Council, to resolve water-related issues in the Chamokane Basin. This Watershed Council may be comprised of, but not limited to, residents of the Chamokane Basin, Stevens County, the Spokane Tribe, and WRIA 54 Planning Unit members.
- **Recommendation WFN-4:** Local governments, the Tribe, and water purveyors should assess subarea water supply needs, identify appropriate measures from a range of options, and facilitate options that are economically viable and provide long-term sustainability.

- **Action to Consider in Implementation WFN 4.1:** Consider possible avenues for potential water use permits through Tribal reserve water rights (e.g., the Spokane Arm systems in Lincoln County).
- **Action to Consider in Implementation WFN 4.2:** Encourage consolidation (Policy 1230) of water rights through Ecology or Conservancy Boards to a water provider when a permit-exempt water right holder connects to the purveyor's system, if the purveyor wants the water right.
- **Action to Consider in Implementation WFN 4.3:** Encourage Ecology and DOH to develop consistent guidance or rules for Group B systems and permit exempt wells. Involve Ecology, stakeholders, and the public in updating the guidance. – **Action to Consider in Implementation WFN 4.4:** Support use of permit-exempt wells in areas where public water service is not feasible, water supply is sustainable and available as shown by well drilling, testing or hydrogeologic investigations and only as consistent with Washington's Growth Management Act (GMA). Note that this can not impair existing water rights.
- **Action to Consider in Implementation WFN 4.5:** Local governments should not allow new permit-exempt wells in water purveyors' service areas unless the purveyor states that it cannot provide timely and reasonable service. Note that the Spokane County Coordinated Water System Plan already specifies this under land use proposals and utility service reviews.
- **Action to Consider in Implementation WFN 4.6:** Water purveyors should be encouraged to extend public water service in rural areas to replace existing permit-exempt well water use where groundwater resources are strained provided that the zoning is consistent with water available, the development is consistent with GMA, and the costs are borne by those profiting from the development and/or getting the new service.
- **Action to Consider in Implementation WFN 4.7:** In subbasins where groundwater resources are proven strained, encourage the development and implementation of project specific mitigation measures to offset impacts from new permit-exempt wells.
- **Recommendation WFN-5:** Establish a program to collect data and evaluate where permit-exempt wells are a concern. Develop management options for problem areas. Affected local governments and Ecology should provide technical support and funding; counties, purveyors, Ecology and Regional Health District should coordinate.
  - **Action to Consider in Implementation WFN-5.1:** Conduct buildout analysis for subbasins and study areas according to current zoning and projected water needs.
  - **Action to Consider in Implementation WFN-5.2:** Develop water supply and demand forecasts for subbasins and study areas, including extending water service into these areas from existing water purveyors.
  - **Action to Consider in Implementation WFN-5.3:** Consider protecting areas of strained water resources through water supply overlay zones if alternate water supply is not feasible.
- **Recommendation WFN-6:** The Planning Unit, Ecology, counties, and Stevens, Spokane and Lincoln County Water Conservancy Boards should explore water-right trusts, banking, water leasing and acquisition as potential solutions to limited availability of new water rights in WRIA 54.

- **Action to Consider in Implementation WFN-6.1:** Encourage the legislature to allow Water Conservancy Boards to establish water banking programs and trust water programs, where the Water Conservancy Board holds the contract for the water.
- **Recommendation WFN-7:** The state Legislature should amend current law to allow water banking throughout the state.



# CHAPTER 7. WATER STORAGE OPPORTUNITIES

## BACKGROUND AND ISSUES

Water storage opportunities were evaluated as a supplemental project under Phase 2 of the WRIA 54 Watershed Plan (*Multi-Purpose Water Storage Assessment*, Tetra Tech et al., 2007). The feasibility assessment included a WRIA-wide screening of water storage opportunities, with a focused evaluation of the West Plains and Suncrest areas, where water demand is expected to increase the most in the coming years. Water storage projects are a significant component of the strategies included in this Watershed Plan for meeting both instream and out-of-stream water demand.

### **Recommendations**

- Continue evaluation of aquifer storage and recovery and enhanced recharge project(s) on the West Plains.
- Promote connectivity between West Plains water systems.
- Promote and support for storage projects initiated by individual entities, especially in Chamokane Creek subbasin.

Water storage projects are based on the principle that stored water from the winter and spring can benefit both instream and out-of-stream needs during the dry summer months. Historically, water storage in open reservoirs has been the predominant type of storage project. Many reservoir projects still exist, and from an engineering point of view they are the most efficient way to store a large volume of water. However, environmental concerns have reduced the ease of constructing new dam and reservoir projects, leading water-resource professionals to seek alternatives that have less environmental impact.

## Columbia River Water Management Program

The Washington Legislature determined that development of new water supplies is a priority for water management in the Columbia River Basin and in June 2006 enacted the Columbia River Basin Water Supply Act (codified as Chapter 90.90 RCW). The act provides funding and directs Ecology to aggressively pursue development of new water supplies to benefit both instream and out-of-stream uses through storage, conservation and voluntary regional water management agreements. Water supply projects in the tributaries to the Columbia River (such as the Spokane River and its tributaries in WRIA 54) are eligible for funding if they create new storage capacity that can be used to supply water to the Columbia River in summer months. One third of the newly created storage must be used for Columbia River instream flows, and two thirds may be used for other purposes. Ecology began accepting pre-applications for its second Columbia River Basin Water Management Grant Program in January 2009.

## CONSIDERATION OF OPTIONS

Water storage options can be structural or nonstructural. Depending on the volume of the potential water storage, the opportunities may also be classified as large-scale or small-scale.

### Structural Alternatives

#### **Enhanced Surface Storage**

Structural alternatives that enhance surface storage make use of modifications to existing features to increase the capacity of those features for storing water. Alternatives include the following:

- **Instream reservoirs and impoundments**—Three dams already exist on the main stem Spokane River in WRIA 54. Construction of new dams on these reach is not considered

practical. Sorenson Canyon and Swamp Creek, tributaries to Chamokane Creek have been identified as having reasonable potential for an instream reservoir. Other, yet to be identified sites may also be feasible.

- **Off-channel reservoirs**—Off channel reservoirs could be constructed in numerous locations throughout WRIA 54. The primary feasibility and siting considerations are proximity to an available water source for filling and distribution to where water is needed. Several options in the West Plains were identified in the Multi-Purpose Water Storage Assessment, including two existing gravel pits. Above-ground tanks are also an option.
- **Modification of existing reservoirs**—Although three major reservoirs exist in WRIA 54 (Nine Mile, Lake Spokane, and Little Falls Pool), physical modification of the dam/reservoir infrastructure or modification to the operating rules for these dams for increased water storage was determined to be impractical.
- **Natural lakes**—Medical Lake is currently used for water storage by the City of Medical Lake. No other lakes were identified as candidates for storage projects.
- **Wetlands**—Water storage in wetlands offers many benefits, including water quality, and habitat benefits. Wetland storage projects will not provide large volumes of stored water, and are valued mainly for instream flow/shallow groundwater enhancement. Many possible wetland storage sites exist in WRIA 54; this was recommended in particular for the West Plains area, where a large number of historical wetlands exist. Any wetland restoration projects on the West Plains would need to consider proximity to the two air fields located on the West Plains—Spokane International Airport and Fairchild Air Force Base.
- **Beaver ponds**—As beavers create dams they can also enhance water storage within a watershed. Beaver dams flood low-lying areas upstream of the dam, creating wetlands. Promoting beaver activity to increase water storage should only be attempted in parts of the watershed where there is little human activity or development. This could benefit the headwater region of Chamokane Creek. The Lands Council has received a grant through the Columbia River Management funds to evaluate beavers to improve water storage across northeast Washington.
- **Balancing basins**—Balancing basins are shallow excavations that retain water for later release to streams to augment flow during low-flow periods. Infiltration is not a goal of balancing basins, so they can be used where soil or aquifer characteristics are not favorable for infiltration. If water quality considerations can be addressed (especially temperature), these could be used in numerous locations to augment stream flow during low-flow periods.

### ***Enhanced Surface Water Recharge to Groundwater***

The purpose of enhanced surface water recharge to groundwater is to raise groundwater levels and increase the residence time of water in the watershed. Alternatives include the following:

- **Aquifer storage and recovery**—Aquifer storage and recovery (ASR) is the storage of water in an underground geological formation through injection, surface spreading or infiltration, with subsequent withdrawal and use of the stored water. Deposits are made in times of surplus, typically during the rainy season, and withdrawals occur when available water falls short of demand. Two areas were identified where ASR projects may be feasible—West Plains (basalt or paleochannel aquifers) and Suncrest (cataract deposits). The lower Chamokane Creek aquifer is a potential site as well, although further investigation into the extent and character of the aquifer is needed prior to a preliminary feasibility determination.



The Spokane Tribe is currently evaluating the possibility of drawing irrigation water from the Spokane River for irrigation in the Chamokane Basin. This concept has the potential to recharge the shallow aquifer and ultimately Chamokane Creek (augmenting flows), and also relieve the current demand on the shallow aquifer for irrigation water.

- **Direct injection to groundwater without recovery (or aquifer recharge)**—Direct injection to groundwater is similar to ASR except that water injected into the aquifer is not removed directly from the aquifer for use but is allowed to raise the groundwater levels. The purpose of direct injection without recovery would be to allow the injected water to augment stream flow during low flow periods. This technology is best suited to locations close to streams and for aquifers where the discharge path to the stream is well understood. It could be implemented in many locations in WRIA 54 where an alluvial aquifer exists. As a flow augmentation method, direct injection to groundwater eliminates the water temperature concerns associated with balancing basins, but relies on a clean water source for injection, which probably means some level of treatment.
- **Farm field flooding**—Farm fields with nearby streams can be flooded during periods of high stream flow when the fields are lying fallow. Spreading stream water over fields allows the water to infiltrate and recharge underlying aquifers. Water that recharges underlying aquifers can be recovered from the aquifer later or allowed to discharge to streams to augment flows during low flow periods. This method is most applicable where enhanced infiltration and recharge of shallow groundwater will benefit stream flow.
- **Distributed small-scale catchment basins**—Small-scale catchment basins are shallow excavations (less than 4 feet deep) in areas adjacent to or near streams. Catchment basins are designed to capture surface water runoff from adjacent hillsides and allow it to infiltrate to groundwater. These are similar to balancing basins, except the objective is to infiltrate the water for increased stream flow.
- **Stormwater infiltration, including low-impact development**—Instead of allowing stormwater to enter a municipal sewer system, stormwater can be allowed to infiltrate into the ground, recharging local aquifers. Low impact development (LID) has emerged as a highly effective and attractive approach to controlling stormwater pollution and protecting developing watersheds and already urbanized communities throughout the country. Water quality concerns associated with stormwater must be addressed prior to infiltration to ensure no contamination of groundwater.

### ***Direct Pumping to Surface Water***

Direct pumping of groundwater to surface water would be used to augment stream flow during low flow periods. Augmenting stream flow during critical periods could reduce the chance that instream water rights would be cut off for more junior water users. Groundwater could also be pumped to lakes, ponds, or wetlands to maintain water levels in those surface water bodies. Water rights would be needed for any groundwater withdrawal.

### ***Reclaimed Water Use***

Reclaimed water is effluent derived in any part from sewage from a wastewater treatment system that has been adequately treated so that it is no longer considered wastewater and is suitable for a beneficial use (not potable water uses) that would not otherwise occur. Water reuse is the use of reclaimed water. The use of reclaimed water reduces the need for new water supplies. Although reclaimed water cannot be used in all situations, it may be used in several types of irrigation, supplementing groundwater, and recharging wetlands. The major advantage of using reclaimed water is that it frees up existing water supplies for

potable uses. Development and implementation of reclaimed water uses is encouraged by the Planning Unit, as described in Chapter 5.

### **Increased Connectivity**

Increased connectivity involves physically connecting water purveyors via pipelines. Simply using existing water more effectively could delay the need for additional physical storage or new water sources for a long time. Several areas are already connected via interties, both for emergencies and for regular use. Increasing the ease of moving water among systems could allow for current water storage volumes to serve a much wider area. This solution is particularly applicable to the West Plains area.

## **Nonstructural Alternatives**

The following nonstructural alternatives were assessed for WRIA 54:

- **Water conservation policies and projects**—Water conservation is a critical component of meeting existing and future water needs, including instream and out-of-stream uses. Increased conservation reduces the amount of water being withdrawn from surface water and groundwater sources, leading to reduced impact on water supply sources. The most beneficial reason for water conservation is that existing water resources can be extended for many more users and into the future. Water conservation recommendations are discussed in Chapter 5.
- **Water rights transfers**—Water-right transfers are the buying and selling of water rights among users. A user may be willing to cease using a water right or may have a significant inchoate water right while another user in the area is in need of water. Transferring water rights is closely tied with increased connectivity, because the transferred water right must come from the “same body of public water” (see 90.44.100 RCW) and often this water must be piped once it is pumped. A water rights transfer may be permanent or temporary. Water rights transfers can be negotiated individually between parties or be facilitated through an established water bank if this option becomes available statewide. Any water rights transfer must receive approval through Ecology or a local Water Conservancy Board.

## **RECOMMENDATIONS**

Any of the storage opportunities described above could benefit water resources management in WRIA 54. The Planning Unit will consider supporting projects brought forward by individual entities. Based on the *Multi-Purpose Water Storage Assessment*, three projects are recommended for continued evaluation:

- **Recommendation WS-1:** Evaluate aquifer storage and recovery (ASR) and enhanced recharge for the West Plains, considering reclaimed water as a priority source but not excluding other water sources.
- **Recommendation WS-2:** Promote the connectivity of the West Plains water systems so that water can be efficiently distributed where it is needed. Increased connectivity could consist of building more infrastructure for intermittent buying and selling of water or for permanent water rights transfers.
- **Recommendation WS-3:** Promote and support water storage projects initiated by individual entities throughout the watershed to meet instream flows and to provide water for residents, business and projected growth in Spokane, Lincoln, and Stevens Counties and the Spokane Indian Reservation. Several projects have been identified in the Chamokane Creek watershed.
  - **Action to Consider in Implementation WS-3.1:** Stevens County (could include other counties, tribe, or entities) establish a storage project database as a management tool for future water supply needs.

# CHAPTER 8. INTEGRATING LAND USE AND WATER SUPPLY PLANNING

Current land use and future land use changes have the potential to impact the Lower Spokane River Watershed in a number of ways. These include changes in the timing and volume of stream flows, changes in groundwater levels and changes in surface water and groundwater quality. The sections that follow provide background information on each of the land use issues identified for this watershed plan, along with lists of potential solutions agreed to by the Planning Unit.

## CONNECTION BETWEEN LONG-RANGE LAND USE PLANNING AND WATER AVAILABILITY

### Background, Issues and Consideration of Options

Land use planning is conducted by county, city and tribal planning departments. Water supply planning is conducted by water purveyors under the guidance and regulation of the Washington State Department of Health (DOH). On the Spokane Reservation, water supply planning is conducted by the Spokane Tribe Public Works with technical assistance provided by the Spokane Tribe Department of Natural Resources and Indian Health Service.

The Planning Unit believes that processes could be modified to improve the connection between land use planning and water system planning so that future land uses and available water supply are better coordinated. Water supply includes water available from surface water and groundwater resources in the vicinity of the land use as well as water available from other locations via transmission lines.

### ***Water System Plans***

Most, not all, water systems are required to have approved water system plans on file with the Washington Department of Health (DOH). The Washington Department of Ecology conducts review of water rights and expansion of water system service areas via a Memorandum of Understanding (MOU) with DOH to review water system plans and plan updates. Under the MOU, it is Ecology's responsibility to determine if expansion of a water system service area boundary is "not inconsistent" with Watershed Plans.

### ***Recommendations***

- Water system plans and other local land use plans should be consistent.
- Entities involved in long range land use planning evaluate "carrying capacity" of land related to available or proposed water supply to support responsible development.
- State should provide technical support and funding to identify areas of strained water resources.
- Counties and cities should identify and consider adding areas of strained water resources to comprehensive land use plans and development regulations.
- Collaborate to develop guidelines for demonstration of water supply availability and sustainability.
- Ecology provide technical assistance and funding for ongoing support in the implementation of guidelines developed in above recommendation.
- Spokane County require Comp Plan amendment sponsors to demonstrate sufficient water availability
- Pursue funding to conduct regional water supply availability studies

*(continued on next page)*

Currently, water purveyors are required to provide copies of water system plan updates for review to DOH and to neighboring water systems. It would be beneficial to include the WRIA 54 Planning Unit on the review list so that the Planning Unit has an opportunity to comment on water system plans, including water conservation.

### **Coordinated Water System Plan**

Spokane County completed its first Coordinated Water System Plan (CWSP) in 1982. The CWSP was updated in 1989 and again in 1999. Coordinated Water System Planning in Spokane County includes the purveyors in the northern two-thirds of the County, including the following purveyors in WRIA 54: Fairchild Air Force Base, Medical Lake, Airway Heights, City of Spokane, Indian Village Estates, Stevens County PUD, and a number of smaller water systems. The primary objective of the 1999 CWSP update was to meet the public drinking water supply needs of the planning area and to achieve coordination between water service and the Growth Management Act (GMA).

### **Growth Management, Development Regulations and Water Supply**

The GMA (Chapter 36.70A RCW) provides guidance to local governments on considering water availability for projected growth. It provides guidance on planning over a 20-year timeframe but does not specifically stipulate a planning horizon for natural resources or water. The GMA requirements provide a framework under which counties can develop comprehensive plans to achieve water resource goals whether planning under the GMA or not. Under the planning goals of RCW 36.70A.020, local governments should consider natural resources, including water, in planning. Two of these goals are particularly relevant to growth and water:

- (10) Environment. Protect the environment and enhance the state’s high quality of life, including air and water quality, and the availability of water.
- (12) Public facilities (including domestic water systems) and services. Ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use without decreasing current service levels below locally established minimum standards.

The mandatory elements of a comprehensive plan (RCW 36.70A.070) include the following references to water quality and quantity:

- The land use element “shall provide for protection of the quality and quantity of groundwater used for public water supplies.”

### **Recommendations (cont’d.)**

- Spokane County identify barriers and plan for implementation of Comp Plan goals and policies aimed at securing adequate water supply.
- Evaluate review process and methodologies used to determine water availability for proposed development projects.
- Spokane County add plat approval conditions confirming water supply
- Spokane County add requirements for exemption from subdivision ordinance that will better ensure a secure water supply.
- Evaluate land use impacts of beavers on Lake Spokane

### **Statements of Support**

- As part of any Coordinated Water System Plan update, address use of consistent population estimates; consistency with approved Comprehensive Plans; planning to provide water for current and future needs on the West Plains; evaluation of transferring water from the SVRP Aquifer to the West Plains; sharing, leasing and acquisition of water rights; sharing of water system plans with adjacent purveyors; water-right transfers; connectivity; infrastructure improvements; and conservation.
- Support sustainable agriculture, including forestry.
- Support efforts to provide public access to water-related recreation areas.

- The rural element requires provisions for essential public facilities and for the protection of surface water and groundwater resources.

The GMA requires all local governments in Washington to identify, classify and adopt regulations to protect “critical areas,” including areas with a critical recharging effect on aquifers used to supply drinking water (RCW 36.70A.060).

Analyzing water availability and including this information in comprehensive plans is an additional proactive way for local governments to reduce conflict and uncertainty related to future determinations of whether there is adequate water supply. However, there is often insufficient funding for local governments to conduct comprehensive water resources studies to support zoning. Given the shared state and local responsibilities, the need to characterize the water resources, and the link between water resources, growth management and economic vitality, it is important for state and local government to collaborate to achieve growth management and long-term sustainability of water resources.

### ***WRIA 54 Growth Management Act Participation***

Spokane County and Stevens County are “fully planning” under the GMA and, as such, are required to adopt comprehensive land use plans and development regulations and designate urban growth areas subject to GMA requirements. Incorporated municipalities within these counties are also required to plan under GMA. Lincoln County is not a “fully planning” GMA County, reflecting the low and primarily rural population base of the County. Lincoln County planning includes development codes and regulations. Lincoln County is not required to designate UGAs.

County planning representatives in WRIA 54 (including representatives from Spokane County, Stevens County and Lincoln County) acknowledge that land use planning must consider water availability to guide sustainable land use development. However, there is often insufficient technical information on surface water and groundwater availability to support land use decision-making. Demonstration of water availability through reviewing area well logs, drilling wells and performing a pump test is often the method of proving adequate water supply for development, though it provides little insight on long-term sustainability of water supply and the overall impact of development on water resources.

The Spokane County Comprehensive Plan natural environment chapter identifies goals and policies that are consistent with the WRIA 54 Watershed Plan:

- Goal NE.5—Spokane County will determine the carrying capacity (the level of population and activity that the natural resource base can healthfully support) and will use that information in its land use decisions regarding critical areas. In some cases, critical areas are fragile and public access should be controlled.
- Goal NE.18—Secure adequate water quantity for the residents of Spokane County:
  - Policy NE.18.1 Manage surface- and- ground waters throughout the county to stay within recharge capabilities.
  - Policy NE 18.2 Define the limits of all aquifers in Spokane County together with their primary source of recharge, as soon as possible.
  - Policy NE 18.3 Identify and map those aquifers, if any, from which annual withdrawals exceed annual water recharge and implement density control limitations, water importation, or other means to prevent further depletion of the water resource.
  - Policy NE 18.7 Discourage new water wells or increases in the extraction of water from existing wells in aquifers where water withdrawals exceed aquifer recharge, especially in

the Little Spokane River Basin and the West Plains area. The provision of public water service to these areas from sources outside the area shall be encouraged.

- Policy NE 18.9 Support efforts to limit water use allowed under the state domestic exemption rule to provide supplies for single family residences
- Policy NE 18.10 Water-conserving landscaping and other conservation practices should be encouraged. Incentives should be used to reduce water consumption.

Due to barriers such as limited staff resources and an insufficient technical information base these goals have not been reached and these policies have not been implemented.

### **Spokane Tribe**

The Spokane Tribe considers land use planning and water availability as a component of its Integrated Resource Management Plan (IRMP). Land use planning on the Spokane Reservation has been reviewed as a component of the recent IRMP update. Areas are designated within the IRMP for housing and growth and allow for clustered development and community water systems. Home sites proposed outside designated housing areas are reviewed by the Spokane Tribe’s Inter-Disciplinary Team and approved on the basis of water availability (as well as the availability of other services such as power). The Spokane Tribe is currently considering development regulations for fee land (i.e., land within the Spokane Indian Reservation that is owned by non-tribal members).

The Spokane Tribe is currently involved in a study of the Chamokane watershed. The objective of the study, which is being conducted by the U.S. Geologic Survey (USGS), as ordered by the federal court, is to characterize hydraulic continuity and to evaluate the impacts of groundwater withdrawals on the flows of Chamokane Creek. The study results will be used by the Spokane Tribe and others to guide future development and water supply in the Chamokane watershed. This basin remains subject to oversight and administration by the federal court.

### **Recommendations**

The following recommendations address the need for better connection between long-range land use planning and water availability:

- **Statement of Support LU-1:** The Washington Utilities Coordinating Council (WUCC) has initiated a review of the Coordinated Water System Plan and determined not to conduct a complete update at this time. If an update is initiated, the Planning Unit supports addressing such issues as: use of consistent population estimates; consistency with approved Comprehensive Plans; improvements to the way commitments to provide water are managed for plats that may not develop for several years, planning to provide water for current and future needs on the West Plains; evaluation of transferring water from the SVRP Aquifer to the West Plains; sharing, leasing and acquisition of water rights; sharing of water system plans with adjacent purveyors; water-right transfers; connectivity; infrastructure improvements; and conservation.
- **Recommendation LU-2:** Water system plans and other local land use plans should be consistent.
  - **Action to Consider in Implementation LU-2.1:** Encourage purveyors to participate in county comprehensive plan updates.
  - **Action to Consider in Implementation LU-2.2:** Encourage water purveyors to keep their water system plans current with DOH and to contact DOH for a pre-planning



- meeting prior to preparing water system plans and updates (DOH: 509-456-3115). Note that not all purveyors are required to submit plans to DOH
- **Action to Consider in Implementation LU-2.3:** Encourage water purveyors to consider only their current legally available water in designations of service areas in water system plans and updates (i.e. water rights, aquifer and watershed source capacity, and wholesale water via interties).
  - **Action to Consider in Implementation LU-2.4:** Encourage purveyors to make available water system plans and water system plan updates to active watershed planning units and encourage DOH to list the active watershed planning units on the list of entities in Water System Plan Submittal Form (Form #331-040).
  - **Recommendation LU-3:** Entities involved in long range land use planning within WRIA 54 should evaluate the “carrying capacity” of land related to available or proposed water supply to support responsible development consistent with comprehensive planning. If water is not available, there needs to be a plan to provide water to the area. Funding assistance will be necessary to implement this recommendation.
    - **Action to Consider in Implementation LU-3.1:** Counties, cities and the Spokane Tribe should integrate information on WRIA 54 water resources technical information and current and projected water supply and demand with land use planning.
    - **Action to Consider in Implementation LU-3.2:** The WRIA 54 Watershed Planning Unit should comment on Comprehensive Plan amendments and land use regulation changes to strive for consistency between Watershed Planning and land use planning.
  - **Recommendation LU-4:** The state should provide technical support and funding to counties and cities to identify areas of strained water resources.
  - **Recommendation LU-5:** Counties and Cities should identify and consider adding areas of strained water resources to comprehensive land use plans and development regulations (through for example, a water supply overlay zones).
  - **Recommendation LU-6:** Recommend that Counties, purveyors, Ecology, and interested Planning Unit members collaborate to develop flexible local guidelines for demonstration of water supply availability and sustainability. Methods may include but are not limited to hydrogeologic investigation and characterization reports.
  - **Recommendation LU-7:** Recommend that Ecology provide technical assistance and funding for ongoing support in the implementation of guidelines developed in Recommendation LU-6 to demonstrate sufficient water availability and sustainability for proposed and existing uses for Comprehensive Plan amendments and associated zoning changes.
  - **Recommendation LU-8:** Recommend that Spokane County require applicants to demonstrate sufficient water availability and sustainability for proposed and existing uses for Comprehensive Plan amendments and associated zoning changes.
  - **Recommendation LU-9:** Pursue funding to conduct more regional water supply availability studies through WRIA 54 Watershed Plan implementation.
  - **Recommendation LU-10:** Spokane County should identify barriers and plan for the implementation of the Comprehensive Plan goals and policies discussed above, which are aimed at securing adequate water quantity for the residents of Spokane County. This will require development of methodologies to accurately evaluate the “carrying capacity” of land related to water supply, and application of these methodologies to ensure responsible development consistent with the Comprehensive Plan. Spokane County and Ecology could

collaborate to develop guidelines for demonstration of water supply availability and sustainability. Methods may include but are not limited to hydrogeologic investigation and characterization reports.

## **CONNECTION BETWEEN LAND USE REGULATIONS AND WATER SUPPLY EVALUATION**

### **Background, Issues and Consideration of Options**

State law and local government codes require that local governments make determinations of adequate water supplies when reviewing plat applications and building permit applications (RCW 58.17.110 and RCW 19.27.097). However, local governments are unclear as to whether state law requires them to include in their subdivision codes a water supply evaluation that extends beyond short-term yield to long-term water availability. Long-term water availability may be implied by possession of a senior water right or permit-exempt well (RCW 90.44.130), but the responsibility for providing water lies with the water right holder or landowner. Sustainability of the physical water availability should have been considered in the planning that established the regional planning parameters (density, critical areas, etc.) under which the application is being considered.

Plat applications and building permit applications are reviewed by regional health districts (RCW 58.17.110 and RCW 19.27.097). Regional health districts or planning/building departments make the determination of adequate water supply and pass on this information to the local governments. If a subdivision is to be served by a new or existing public water system, the regional health district requires approval from DOH. If the subdivision is to be served by individual wells, regional health districts require that the application be supported by a water right permit from Ecology or by well drilling and testing and/or by a report prepared by a qualified hydrogeologist. If the development proposes to be served by permit-exempt wells, the regional health district requires the applicant to contact Ecology to verify water-right requirements. Ecology is involved in this process through analysis of the State Environmental Policy Act (SEPA) documentation provided by local governments and resulting from an application for a subdivision under RCW 58.17.110.

In Spokane County, there is a reasonable process to assess water availability through platting and review for areas within existing public water service areas, since the water purveyors are involved in the review process (via Spokane County Coordinated Water System Planning). Outside of water service areas, however, the Regional Health District is the only agency that reviews Comprehensive Plan amendments, zoning changes and platting in terms of water supply. In addition, Spokane County does not currently require proof of water availability for division of land through an exemption from the subdivision ordinance. Exemptions are granted through a Planning Department administrative process called a certificate of exemption. Most rural development in Spokane County is accomplished through certificates of exemption.

In Stevens County, lower development densities have been assigned to areas that appear to have water availability problems (as identified using well logs on file with Ecology, regional soils and geology, and public comments). In addition, proof of potable water supply is required for dividing parcels into units of less than 20 acres. Proof of water supply includes well drilling and testing or a hydrogeologic report and must be approved by the Land Services Department.

In Lincoln County, proof of potable water supply is required for dividing parcels into units of less than 20 acres. The project proponent must prove adequate potable water supply to the Lincoln County Health District before plats are approved. Proof of water supply includes well drilling and testing.

It is important to note that in all three counties the health district's main objective is protection of human health and not regional long-term water supply concerns, nor legal availability.

## Recommendations

- **Recommendation LU-11:** The Planning Unit recommends an evaluation of methodologies and the review process used to determine water availability for proposed development projects, in order to better determine that permitted projects have a viable water supply.
  - **Action to Consider in Implementation LU-11.1:** When requested, Ecology should consistently review and comment as appropriate on legal and physical water availability in support of local jurisdiction implementation of the Growth Management Act. Comments may be related, but are not limited to, SEPA reviews and land use actions, including preliminary plats, land use decision appeals, and land use regulation changes.
  - **Action to Consider in Implementation LU-11.2:** Review the Spokane Regional Health District's hydrogeological report criteria utilized to demonstrate adequate potable water supply for subdivision applications.
- **Recommendation LU-12:** Recommend Spokane County add the following condition for the approval of a final plat: "Prior to filing the final plat, the applicant will demonstrate provision of adequate potable water supply by providing one of the following:
  - A letter from a water purveyor stating they will serve the proposed subdivision. If a plat is not developed for a specified amount of time, this commitment may need to be reconfirmed by the water purveyor.
  - A copy of a water right permit from the Department of Ecology with adequate quantity to serve the proposed subdivision;
  - A plan to supply the proposed subdivision within the groundwater exemption specified in RCW 90.54.050 that complies with the 1997 Attorney General Opinion, Washington State Supreme Court Decision *Department of Ecology vs. Campbell and Gwinn, LLC* and Washington State Department of Health guidelines for residential water use."
- **Recommendation LU-13:** Recommend that Spokane County add one or more of the following to the requirements for exemption from the subdivision ordinance:
  - Demonstration of water supply
  - Only 3 parcels can be created
  - Parcels must be 40 acres or greater
  - Public notice of proposed land division.

## IMPACTS OF LAND DEVELOPMENT ON WATER QUANTITY, WATER QUALITY AND HABITAT

Land development and associated impacts include but are not limited to shoreline development, timber harvest, vegetation removal for land development, impacts on wetlands and impacts on and from stormwater and wastewater systems.

Various forms of land development have the potential to detrimentally impact water quantity (i.e., stream flows and groundwater levels) and water quality (both as a result of decreased water quantity and as a result of contaminated water discharges). Land development in urban areas has resulted in creation of impervious surfaces and production of stormwater; along shorelines, development may result in loss of

habitat and increased water temperatures if riparian vegetation is removed; land clearing for construction can result in discharge of turbid water to surface water; septic systems and runoff from fertilizer-treated lawns can adversely impact water quality; and, improper timber stand management can have impacts on runoff timing and water quality.

These issues are addressed under a number of processes and jurisdictions:

- Shoreline Master Programs
- Comprehensive Planning and Critical Areas Ordinances
- Ecology's Environmental Assessment Program
- County and City sewer and stormwater planning
- Regional health districts (for drinking water quality and septic systems)
- DOH (protection of public health)
- Washington Department of Natural Resources (WDNR) (regulation of state forest lands through the State Forest Practices Act)
- Spokane Tribe Integrated Resource Management Plan (IRMP).

The Planning Unit has no recommendations to supplement the actions under these existing regulations and programs.

## **MAINTAINING AND ENHANCING AGRICULTURE**

### **Background, Issues and Consideration of Options**

Farmland and silviculture are important land uses in WRIA 54. Farming produces food, fiber, and other products and does not use chemicals as intensively as urban land uses. Conversion of agricultural land to developed land is occurring in WRIA 54, primarily along the margins of urban areas. The Planning Unit supports maintaining agricultural land but acknowledges that agricultural land owners may decide to stop farming and may sell their land and water rights or may consider trusts, banking or leasing their water (if these options are available).

### **Recommendations**

- **Statement of Support LU-14:** The Planning Unit recommends support for sustainable agriculture (including forestry).
  - **Action to Consider in Implementation LU-14.1:** Support for agricultural practices that reduce runoff and increase infiltration.
  - **Action to Consider in Implementation LU-14.2:** Tax incentives should be considered for agricultural land where practices promote sustainable agriculture and/or sustainable communities.
  - **Action to Consider in Implementation LU-14.3:** When development is proposed for existing farmland, encourage cluster development to preserve farmland and maintain rural character. The development should be consistent with other recommendations in this Watershed Plan with respect to availability of water. If proposed in a water service area, approval of the water purveyor is necessary.
  - **Action to Consider in Implementation LU-14.4:** Discourage the promotion of purchase of agricultural water rights to support development and for water rights mitigation.

- **Action to Consider in Implementation LU-14.5:** Support placement of agricultural water rights into the trust water program (can be temporary for a specified period of time) or water bank if it becomes available, to avoid relinquishment.
- **Action to Consider in Implementation LU-14.6:** WDNR should consider the impact of preserving forest on delayed surface water yields in management of state trust lands.
- **Action to Consider in Implementation LU-14.7:** Consider use of reclaimed water for agricultural purposes

## **PUBLIC ACCESS TO WATER-RELATED RECREATION AREAS**

### **Background, Issues and Consideration of Options**

Public access to water for recreation is addressed through Shoreline Master Programs and through Avista's Federal Energy Regulatory Commission (FERC) licensing of the Spokane River Project. In WRIA 54, the primary shorelines are associated with the Spokane River and include Lake Spokane and the Spokane Arm of Lake Roosevelt.

### **Recommendation**

- **Statement of Support LU-15:** Support efforts to provide public access to water-related recreation areas.
  - **Action to Consider in Implementation LU-15.1:** Identifying potential sites for public access to water for recreation that could be acquired or improved.
  - **Action to Consider in Implementation LU-15.2:** Recommending that cities, counties and the state acquire and improve public access to water for recreation.

## **LAND USE IMPACTS ASSOCIATED WITH BEAVER ACTIVITIES**

### **Background, Issues and Consideration of Options**

The Planning Unit discussed damage to trees and landscaping by beavers in some areas of the WRIA. The extent of this problem is not well documented. Management of beaver activities is the jurisdiction of Washington Department of Fish and Wildlife (WDFW) and the Spokane Tribe (on the Reservation).

### **Recommendation**

- **Recommendation LU-16:** A study is recommended to evaluate the land use impacts of beavers on Lake Spokane and to consider relocation of beavers to the properties of willing landowners. This could potentially be coordinated with the Lands Council project to evaluate the role of beavers in providing water storage.





# CHAPTER 9. INSTREAM FLOW

The terms “instream flow” and “minimum flow” are used by Ecology to describe a type of water right for a stream or river. The purpose of defining instream flow is to ensure that stream flow remains in the river to support instream water needs, usually focused on fish, but also supporting aesthetic, recreational and other instream benefits. These instream flow water rights do not affect rights for out-of-stream uses that existed before the instream flow was set (with the exception that any request for change to an existing water right could only be approved if it were shown not to impact any other water rights, senior or junior, including the instream flow), however they do impact water rights established after the instream flow is set. These “junior” water rights may be asked to curtail water usage during times when stream flows drop below the established instream flow.

Ecology has established instream flows for many rivers and streams in the state, including the Little Spokane River. Chamokane Creek has an established instream flow, set through a federal adjudication. There is no instream flow set for the main stem Spokane River or any other WRIA 54 tributaries. As an optional element in watershed planning, planning units may conduct technical studies and develop instream flow recommendations, which Ecology will consider as a basis for setting the instream flow into rule. The WRIA 54 Planning Unit did elect to take on the optional instream flow element, as did upstream WRIA planning efforts for WRIA 55/57 (middle Spokane), and WRIA 56 (Hangman). However, the WRIA 54 Planning Unit has not made a recommendation to Ecology to set the instream flow on any water body in the WRIA. The process of determining the minimum flows and other associated components of a rule may continue into the implementation phase.

## **Recommendations**

- For tributary subbasins—phased pursuit of instream flow rule for prioritized subbasins

## **Statements of Position**

- Spokane River main stem above Nine Mile Dam—Control point at Spokane gage Prior to Ecology initiating rule-making, support broad community-based process that incorporates the flexibility needed to the varied water needs of the region. The WRIA 54 Planning Unit recommends considering the option of a water right reservation from the “West Arm” of the SVRP Aquifer.
- No control point recommended at Little Falls at this time

## **SPOKANE RIVER MAIN STEM ABOVE NINE MILE DAM**

### **Background, Issues and Consideration of Options**

Recognizing the need for an integrated approach to instream flows for the main stem Spokane River, the WRIA 55/57 Watershed Plan recommended that an integrated flow recommendation be developed with WRIA 54. In August 2007, the Spokane River Instream Flow Work Group convened to begin work on developing an integrated instream flow recommendation. The Work Group discussed possible control point locations, water subject to those control points, and possible flow levels. The results of these efforts were documented in an *Instream Flow Recommendations Memorandum for WRIA Planning Units 54 & 55/57*, dated June 9, 2008 (see Appendix A). Regarding control points and flows, the Work Group recommended the following:

- **Barker Road gage**—Control point for surface water from Sullivan Road Bridge to the Idaho state line. A minimum flow of 500 cfs from June 16 through September 30 was recommended in the WRIA 55/57 Watershed Plan for this site. The Work Group elected not to reevaluate this recommendation.

- **Spokane gage**—Control point for surface water between Seven Mile Bridge and Sullivan Road Bridge, and groundwater within the SVRP Aquifer within Washington to the Idaho state line (except a portion of the Hillyard Trough area, which may contribute to the Little Spokane; Ecology is currently working on a delineation for this boundary, pending completion of aquifer model software tools in FY2009.). A range of flows was proposed and discussed for this control point throughout the year; no consensus agreement was reached on a single Work Group recommendation. For the summer low flow period from June 16 to September 30, flow proposals ranged from 565 cfs to 1,350 cfs for the minimum instream flow. Ecology is continuing to evaluate the technical data, and will propose revised stream flows for the spring season.

Additionally, the Work Group expressed interest in establishing a gage at Nine Mile (below the dam). A gage at this location would capture Spokane River flow plus all inflow from the SVRP Aquifer, which is significant in this reach of the river. The site may be problematic for a stream flow gage however, and there is no immediate plan to install a gage at Nine Mile.

## Recommendation

- **Statement of Position ISF-1:** The Spokane River Instream Flow Work Group’s memorandum, described above and provided in Appendix A, documents the WRIA 54 Planning Unit’s position regarding instream flow for the main stem Spokane River above Nine Mile Dam, with the one addition of requesting that the option of a water right reservation be considered from the “West Arm” of the SVRP Aquifer.

The recently available Bi-State Aquifer Model for the SVRP Aquifer (Hsieh, Paul A., et al, 2007) allows prediction of flow impacts on the river from various groundwater pumping scenarios. Several model runs conducted by Spokane County did not show a measurable impact on the river at the Spokane gage from groundwater pumping in the western portion of the SVRP Aquifer, known as the “West Arm”. However the model runs of groundwater pumping in the “West Arm” do measure reduced flows downstream. Ecology staff believe that pumping from the “West Arm” does have an impact on the river at the ‘at Spokane’ gage, however the current version of the model cannot measure that impact.

The WRIA 54 *Final Technical Report, Spokane River Instream Flow Studies* (EES Consulting, 2007) identified lower flow needs for the Spokane River reach below Latah Creek than further upstream near the Spokane gage. This lower reach receives a large influx of groundwater discharge, on the order of 200 cfs, from the SVRP aquifer. The state caucus’ instream flow recommendation (see Appendix A) accounts for this inflow by integrating flow and habitat data for the ‘at Spokane’ and ‘Gun Club’ (or Seven Mile) sites.

When Ecology undertakes setting an instream flow for the Spokane River, the WRIA 54 Planning Unit recommends considering the option of a water right reservation from the “West Arm” of the SVRP Aquifer. Prioritization of water uses for future allocation within WRIA 54 could be applied if a reservation for future water use were included in an instream flow rule, by reserving water for certain purposes such as, in no order of priority, environmental enhancement, agriculture, domestic or municipal supply, stock watering or commercial and industrial purposes. The Planning Unit understands that the state caucus will not currently support a reservation of water for municipal water supply due to existing inchoate water rights in the Spokane River watershed that can meet future water demand. Other concerns include declining summer low flows, water quality issues, and impacts to senior water right holders.

Prior to Ecology undertaking rule-making for this reach, the Planning Unit would like a broader community-based process that incorporates the flexibility needed to meet the varied water needs of the region and presents a complete set of the information that was developed

through the Watershed planning process. This is likely to require a minimum two-year effort. If Ecology is prepared to support this effort, the Planning Unit urges Ecology to initiate this work as soon as possible.

## **SPOKANE RIVER MAIN STEM BELOW NINE MILE DAM**

### **Background, Issues and Consideration of Options**

Very little free-flowing river exists below Nine Mile Dam on the Spokane River. The river flows a short distance before encountering backwater from Long Lake Dam, which impounds Lake Spokane. Below Lake Spokane is the pool for Little Falls Dam, and below Little Falls Dam lies the Spokane Arm of Lake Roosevelt, which is contained by Grand Coulee Dam on the Columbia River. Depending on the time of year and pool elevations, the riverine/lacustrine boundaries in these reaches migrate upstream and downstream.

Instream flow needs are not well defined in this reach. The Spokane Tribe is currently conducting water quality modeling for the Spokane Arm of Lake Roosevelt, which will assist in better defining instream flow needs and assist in deciding whether a control point should be established at Little Falls. This portion of WRIA 54 is much more closely connected to Lake Roosevelt pool elevation than to Spokane River flow. There is also no stream flow gauging at Little Falls; flow rates from the dam are calculated, rather than measured.

Ecology requested that the Planning Unit consider recommending a control point below Little Falls Dam from which Ecology could base its evaluation of water right applications for surface water diversions and potentially groundwater withdrawals in this river reach. Currently, flow from Little Falls is managed by Avista under an agreement with the Spokane Tribe—the “Little Falls Agreement.” Under this agreement, Avista maintains discharge from the dam at 200 to 500 cfs, depending on Lake Roosevelt pool elevation. Under the new Lake Roosevelt lake level management protocol, lower lake levels will occur more frequently, requiring the higher (500 cfs) discharge from Little Falls Dam.

Avista also holds water rights for 7,500 cfs for power generation from Little Falls Dam; this is more flow than typically exists in the river during the summer months. Ecology has issued a few water rights in this reach of the river, conditioned to the 200 cfs flow specified in the Little Falls Agreement, and based on limited biological assessment of instream flow needs in this reach. Some Planning Unit members believe that because the flows are set by this agreement, water rights conditioned to it will not be interrupted. Thus these rights may not satisfy the senior right impairment test. However, any new water rights would be junior to established water rights, including the Spokane Tribe’s (unquantified federal reserved water rights) and Avista’s (hydroelectric power generation of about 7,500 cfs) and could be interrupted if insufficient water is available to fulfill those established water rights. It was suggested that Ecology regulate water rights in this river reach based on the Spokane Gage. Ecology does not agree with managing the river below the Seven Mile Bridge to the ‘at Spokane’ gage because the river is a lacustrine (pool, or lake-like) environment from this location downstream. Consensus on this approach was not reached, and further evaluation by Ecology was suggested. Other options discussed for management of the river below Seven Mile Bridge include maintaining lake or dam pool elevations for water quality or recreational purposes, or other purposes that the Spokane Tribe might identify.

### **Recommendation**

- **Statement of Position ISF-2:** The Planning Unit chose not to recommend a control point at Little Falls at this time.

## WRIA 54 TRIBUTARIES

### Background, Issues and Consideration of Options

Deep, Coulee, Spring, Mill Canyon, Harney, Chamokane, Little Chamokane, Blue, Sand, and Orzada Creeks are all minor tributaries to the Spokane River in WRIA 54. Very little flow and biological data exist for these creeks, except Chamokane and Blue Creeks where regular monitoring has been done. For the most part, these creeks (except Chamokane and Little Chamokane) do not have surface flow to the Spokane River; their flow infiltrates into the alluvial gravels in the lower reach of each stream, and flows to the Spokane River as groundwater.

Chamokane Creek has an existing instream flow of 24 cfs set through federal adjudication. Several water rights that existed at the time of the adjudication were named in the adjudication documents as conditioned to this instream flow, but the instream flow also applies to all other water rights. The impact of permit-exempt wells on instream flow in Chamokane Creek is currently being studied through a multi-year USGS study.

As part of developing this Watershed Plan, a toe-width study was conducted for Deep, Coulee, Spring, and Little Chamokane Creeks to obtain a preliminary identification about instream flow needs (EES Consulting, 2007). The toe-width method of evaluating instream flow needs is a simple method that relies on field identification and measurement of the active stream channel width, and calculating estimated flows.

With the exception of Little Chamokane Creek which is under the jurisdiction of the Spokane Tribe, Ecology evaluates water right applications in these tributary subbasins under surface water source limitation (SWSL) policy documents. Under these SWSLs, which are intended to be interim measures until a final evaluation of water availability is completed, Ecology will not issue surface or groundwater rights in these subbasins.

The Planning Unit considered the merit of recommending pursuit of instream flow rules for these tributary subbasins versus staying with the status quo of water management through SWSLs. Although additional analysis and rule development is not likely to result in additional surface water rights from these small streams, the Planning Unit felt that there may be other flexible approaches to meeting both instream and out-of-stream water needs that could be identified through development of an instream flow rule. Examples of this include seasonal water withdrawal combined with water storage during the dry season, or limited new water withdrawals in exchange for riparian and stream restoration projects.

### Recommendation

- **Recommendation ISF-3:** The Planning Unit recommends a phased pursuit of instream flow rules for tributary subbasins. A phased approach is recommended, such that the effort could be discontinued if it is found that development of a rule does not provide water management benefits for the tributary basin.
  - Initial steps would include:
    - Collect flow data to better understand flow regime
      - Prioritized regular flow measurements (quarterly or monthly)
      - Document where and when flow exists in these streams
    - Collect other relevant data
      - Channel and riparian conditions, shade, etc.
      - Groundwater conditions—continuity, hydrogeology

- Water uses (fisheries, permit-exempt, stock water, other water rights). The Spokane Tribe, Ecology, and WDFW have indicated a willingness to research additional data on flow and fish uses.
  - Reconfirm toe width study results
  - Consider probable importation of water for Deep/Coulee Creek watersheds
- Milestone Decision: Continue to pursue instream flow rule?—This decision is expected to be case-by-case for each prioritized tributary. If it does not appear that there is value to the Planning Unit to continue developing an instream flow rule, it may choose to discontinue work in the subject subbasin.
- If the Planning Unit chooses to continue developing recommendations for an instream flow rule, it would need to agree on control point(s), water subject to regulation based on the instream flow (including groundwater in hydraulic continuity ), and flows throughout the year. It also may choose to make recommendations regarding permit-exempt wells, water reserves and mitigation.



# CHAPTER 10. WATER QUALITY

Water quality problems identified in WRIA 54 include low dissolved oxygen throughout entire length of the Spokane River, elevated metals concentrations in Spokane River sediment, aquatic weed growth in Lake Spokane, elevated PCB levels in fish tissue, and possible groundwater contamination on the West Plains. Several of these problems are being addressed through non-WRIA actions. For example, the low dissolved oxygen in the river and Lake Spokane and metals in sediment are being addressed through state administered total maximum daily load (TMDL) assessments (water quality cleanup plans). This chapter provides a brief description of water quality issues and current status in the WRIA, and presents recommendations for water quality-related actions.

## LOW DISSOLVED OXYGEN LEVELS IN SPOKANE RIVER AND LAKE SPOKANE

### Background, Issues and Consideration of Options

The Spokane River water quality criterion for dissolved oxygen is that it shall exceed 8.0 mg/L unless “natural conditions” are below that level. The criterion for Lake Spokane is no less than 0.2 mg/L below “natural conditions”. In the past, dissolved oxygen levels have been as low as 3.0 mg/L, with recurring minimums below 4.0 mg/L.

To address the problem, Ecology began developing a TMDL in 1998. Based on field sampling and numerical modeling of different pollutant loading scenarios (CE-QUAL-W2 model), Ecology released the *Draft Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load Water Quality Improvement Report* (September 2007). In September, 2008 the U.S. Environmental Protection Agency (EPA) announced that it would be revising some of its earlier TMDL-related decisions, which also impact the Ecology 2007 draft Water Quality Improvement Report (cited above). Currently Ecology is evaluating how and what revisions to the 2007 draft Water Quality Improvement Report will be necessary. Resolution of this issue is likely to take at least a year.

The 2007 draft Water Quality Improvement Report describes the causes of the pollution and specifies how much pollution needs to be reduced or eliminated to achieve clean water. It lays out an overall approach to control the pollution and a monitoring plan to assess the effectiveness of the water quality improvement activities. It recommends three categories of actions:

- Phosphorus reductions for wastewater dischargers permitted through the National Pollutant Discharge Elimination System (NPDES)
- Regional non-point source pollution reduction program

### **Obligations**

- Ecology keep Planning Unit informed on TMDL (Water Quality Improvement Plan) activities in WRIA 54

### **Recommendations**

- Implement the monitoring program described in the Non-Point Source Monitoring Quality Assurance Project Plan for Lake Spokane
- 
- Implement the monitoring program described in the Quality Assurance Project Plan for the Paleochannel Water Quality Monitoring Study
- Local governments retain qualified wetlands scientists to review wetland delineations and administer the wetlands portion of critical areas ordinances.

### **Statements of Support**

- Support monitoring efforts
- Support non-point source assessments, monitoring, and reduction efforts.

### **Statement of Position**

- Support implementation of the City and County stormwater management plans



- Septic tank elimination program (for those located over the SVRP Aquifer).

The Water Quality Improvement Report focuses on corrective actions upstream from Lake Spokane (Long Lake), in part relying on the assumption that these actions will resolve dissolved oxygen problems downstream throughout the Spokane River system. The Spokane Tribe is conducting separate modeling (CE-QUAL-W2) on the Spokane Arm of Lake Roosevelt to evaluate the potential effectiveness of Spokane River and Lake Spokane Dissolved Oxygen TMDL implementation on resolving downstream dissolved oxygen problems and to determine if additional corrective actions are needed.

Dissolved oxygen levels at the Long Lake Dam discharge are also being addressed through the FERC relicensing process for the Spokane River Project. Ecology has issued the 401 certification that includes additional recommendations related to dissolved oxygen in Lake Spokane. Related to this, Avista's FERC license calls for a Sediment Management Plan for Nine-Mile and Long Lake Reservoirs to address accumulating sediments in the reservoirs. Since some of the dissolved oxygen problems in Lake Spokane may be caused by oxygen demand from the accumulated sediments, this will also contribute to solving the dissolved oxygen problem.

Several data gaps were identified by the WRIA 54 Planning Unit; these are areas that may not have been fully evaluated and addressed through the proposed dissolved oxygen TMDL:

- What is the contribution of non-point source pollutants to Lake Spokane
- What is the baseline non-point contribution from tributaries
- What is the contribution of surface flow to the Spokane River from a number of natural springs
- How would flow affect dissolved oxygen levels in the Spokane Arm of Lake Roosevelt?
- What is responsible of the anoxic conditions in the lower Spokane Arm of Lake Roosevelt?
- Do the tributaries below Lake Spokane make a significant contribution of nutrients to the lake?

## Recommendations

Because the non-point source data gaps affect WRIA 54 and are not addressed in the TMDL, the Planning Unit makes the following recommendation to address these needs, presented in no priority order:

- **Recommendation WQ-1:** Implement the monitoring described in the Quality Assurance Project Plan (QAPP) for Nine Mile Area Non-Point Source Monitoring Study: Water Quality Monitoring Study (Tetra Tech, 2009). and proceed with a study to monitor and assess non-point sources from the surface water and groundwater that drain directly to Lake Spokane from adjacent and nearby land. The QAPP was developed as a supplemental component to this Watershed Plan; implementation is recommended as an early action or Phase 4 action.
  - **Action to Consider in Implementation WQ-1.1:** When housing density increases in the study area to a point where it is desirable to provide sewer service, the Planning Unit may consider supporting efforts to convert individual onsite septic systems to sewer service.
- **Statement of Support WQ-2:** Support monitoring efforts undertaken by individual entities, regional groups or the Planning Unit. Current applicable monitoring programs include new Ecology ambient surface water quality monitoring stations that do not currently have secure long-term funding, and sediment oxygen demand sampling in Lake Spokane, which was conducted by the City of Spokane in 2007 and is funded for 2008.

- **Obligation WQ-3:** Ecology will keep the Planning Unit informed about progress on all TMDLs (Water Quality Improvement Plans) in WRIA 54, either through verbal updates at Planning Unit meetings or email updates to those on the email distribution list. Encourage all members to be on the email list.

## **DISSOLVED METALS IN SPOKANE RIVER**

Historical mining activities in Idaho have resulted in elevated levels of dissolved metals such as lead and zinc in Spokane River water, including in WRIA 54. An EPA-approved TMDL, dating from 1999, is currently being implemented to correct this problem. The cleanup approach relies primarily on source control and cleanup of selected Spokane River beaches upstream from WRIA 54, where contaminated sediments had accumulated. The Planning Unit makes no recommendations regarding this issue.

## **ELEVATED PCB LEVELS**

### **Background, Issues and Consideration of Options**

All reaches of the Spokane River have been found to have polychlorinated biphenyls (PCBs) well above the National Toxics Rule (NTR) criterion. The NTR set the PCB criteria at 5.3 ng/g in fish tissue samples, 170 pg/L water concentration, and 0.0065 kg/day fish consumption rate. The Spokane Tribe Water Quality Standards set PCB criteria at 0.1 ng/g in fish tissue samples, 3.37 pg/L water concentration, and 0.0863 kg/day fish consumption rate.

Ecology is in the process of developing a TMDL to address PCBs in the Spokane River system (*Draft Spokane River PCBs Total Maximum Daily Load Water Quality Improvement Report*, June 2006). In the draft report, Ecology proposed a PCB loading scenario based on meeting the Spokane Tribe water criterion for PCBs. This work is still in draft form, and it is uncertain when the TMDL will be finalized.

### **Recommendation**

See Obligation WQ-3 above.

## **TEMPERATURE, TURBIDITY, pH AND FECAL COLIFORM IN THE LITTLE SPOKANE RIVER**

The Little Spokane River is the largest tributary to the Spokane River in WRIA 54. To address its water quality concerns, a TMDL study was begun in 2004. Washington State University, the Spokane County Conservation District, and the Little Spokane Water Quality Management Plan Committee are participating in the study and development of a water quality management plan. Once the assessment work is completed, a TMDL advisory group will be formed to work on the TMDL Water Quality Improvement Plan and Implementation Strategy.

### **Recommendation**

See Obligation WQ-3 above.

## **AMMONIA, DISSOLVED OXYGEN, FECAL COLIFORM, pH, TEMPERATURE AND TURBIDITY IN LATAH CREEK**

Spokane County Conservation District is leading development of a TMDL water quality improvement plan for water quality problems in Latah Creek. Latah Creek is a tributary to the Spokane River at the

upstream boundary of WRIA 54. The TMDL assessment began in 2004, and an advisory committee is actively contributing to development of the draft plan, expected to be released in 2009.

## **Recommendation**

See Obligation WQ-3 above.

## **TOTAL DISSOLVED GAS**

Total dissolved gas (TDG) levels exceed state and tribal water quality standards in reaches of the Spokane River below Long Lake and Little Falls Dams. Washington State and Spokane Tribal Water Quality Standards establish that TDG levels should not exceed 110 percent.

Avista Utilities has commissioned analysis to address the high TDG levels below Lake Spokane and Little Falls Dams. A process for resolving the TDG problem is addressed in the 401 Water Quality Certification issued by Ecology as part of Avista's FERC relicensing. This document is currently under appeal. The Planning Unit chose not to make recommendations regarding this issue at this point in time.

## **MIDNITE AND SHERWOOD MINES, DAWN MINE PROCESS FACILITY**

Midnite Mine is an open-pit, hard-rock uranium mine that was active between 1956 and 1982. Reclamation has been difficult because the mining operations had penetrated the aquifer. This has led to perpetual seepage, creating two lakes of standing contaminated water, which flow into Blue Creek and the Spokane River. The Midnite Mine site contamination has spread beyond its 466-acre area. Contaminants include the radionuclides radium-226, lead-210, uranium-234, and uranium-238. Non-radioactive metals are also present, as well as high sulfate levels, an indication of acid mine drainage.

The EPA began investigating the site in 1999 and issued a Record of Decision for the superfund site in 2006. Site remediation activities will include the following:

- Remove mine waste from the surface.
- Contain the waste in two open pits at the site.
- Slope and cover the waste with clean soil.
- Cover waste in existing waste-filled pits with clean soil.
- Plant native plants on the cover and in areas where waste was removed.
- Pump water entering the pits to a water treatment plant at or near the site.
- Treat water to remove contaminants and pipe it to the Spokane River.
- Dispose of sludge from the treatment plant in an engineered facility.
- Protect and maintain the soil covers.
- Prevent human exposure to contamination in water until cleanup levels are met.

Five miles from Midnite Mine, another uranium mine, the Sherwood Mine was operated by Western Nuclear from 1978 until 1984 and has since been successfully reclaimed.

The Dawn Mining Company uranium mill site near Ford and alongside Chamokane Creek is a third uranium mining-related cleanup site in WRIA 54. From the mid-50s to the early 80s, Dawn Mining Company conducted uranium milling at this 820 acre site. Most of the uranium ore processed at the site was obtained from the Midnite Mine. Since the mill was shut down, Dawn Mining Company has been in

the process of cleaning up the mill site, including demolition and burial of site buildings, contaminated soil removal and disposal, and contaminated ground water remediation. During the late 1980's, groundwater contamination was found in seeps and springs discharging to Chamokane Creek. Cleanup and reclamation activities are ongoing at the site, with a targeted completion date in 2013 (Washington Department of Health, 2008).

Because the Midnite Mine and Dawn Mining Company Mill Site are active remediation sites overseen by the EPA and Washington Department of Health respectively, and remediation has been completed at the Sherwood Mine, the Planning Unit makes no recommendations regarding these issues at this time.

## **WEST PLAINS MISSILE SITE**

Trichloroethylene (TCE), perchlorate, and N-nitrosodimethylamine (NDMA) have been detected in several West Plains wells. This is a unique combination of chemicals associated with rocket motor facilities. TCE levels were as high as 210 parts per billion, with EPA's maximum contaminant level at 5 parts per billion. Perchlorate levels were up to 2.1 parts per billion, below the preliminary remediation goal of 3.6 parts per billion. NDMA was found to be up to 2.6 parts per trillion with a tentative remediation goal at 1.3 parts per trillion; the EPA has not determined a maximum level considered safe for NDMA.

Thus far, the Spokane Regional Health District states that the long-term health risks appear to be low at those levels, but filters have been installed at wells where elevated contaminant levels were found. EPA and the U.S. Army Corps of Engineers are managing this site, and have not concluded their investigation at this time.

The Planning Unit makes no recommendation regarding this issue.

## **POTENTIAL ARSENIC CONTAMINATION IN CHAMOKANE VALLEY GROUNDWATER**

Reports of arsenic contamination in groundwater wells are known to exist in the Chamokane Valley of WRIA 54. Currently, there is no published information regarding the nature, extent, and cause of this problem, however the Spokane Tribe and several residential domestic wells have tested for arsenic levels of above an acceptable level for drinking water. A recommendation to assist the Spokane Tribe with water system upgrades is included in Chapter 4, in part to address this issue.

## **NON-POINT SOURCE POLLUTION**

### **Background, Issues and Consideration of Options**

Non-point source pollution is pollution that cannot be traced back to a single origin or source. Sources can be natural, such as eroding stream banks contributing sediment to streams, or human-caused, such as polluted stormwater washing off streets and parking lots. In WRIA 54, non-point source pollution contributes to the low oxygen condition of the Spokane River and Lake Spokane.

Spokane County recently initiated a study to evaluate non-point source phosphorus loading in the Spokane River and Lake Spokane watershed. This study will be the first step in implementing the non-point source reduction component of the dissolved oxygen TMDL, and will consider the entire Spokane River watershed, including the portion within Idaho (over two-thirds of the watershed is in Idaho).

The only completed non-point source assessment lies in work done by Stevens County Conservation District for the Chamokane Creek watershed. The *Chamokane Creek Watershed Management Plan*

(Stevens County Conservation District, 2000) was developed to be used as a tool in protecting, maintaining, and improving the quality of surface water in the Chamokane Creek Watershed, both on and off the Spokane Reservation. The Plan addressed all identified potential water quality concerns; most of these were related to non-point sources. The *Chamokane Creek Watershed Management Plan* provides specific recommendations to correct the identified water quality concerns, mostly related to non-point source pollutants.

As part of the WRIA 54 watershed planning project, non-point source monitoring plans were developed for the Lake Spokane (see above) and West Plains regions. The *Quality Assurance Project Plan for the Paleochannel Water Quality Monitoring Study* (Tetra Tech and GeoEngineers, in press) focused on the paleochannel features that are believed to be vulnerable to contamination from non-point source pollution because of their permeable geology. Because the West Plains is a rapidly developing area and several local water resource and wastewater projects are proposing to use the paleochannels (for stormwater infiltration, reclaimed water infiltration or water supply wells), it is important to put in place a monitoring program so that any non-point source impacts can be identified and corrected.

## Recommendations

The following are recommended to address non-point source pollution in WRIA 54:

- **Recommendation WQ-4:** Implement the monitoring program described in the Quality Assurance Project Plan for the Paleochannel Water Quality Monitoring Study (Tetra Tech and GeoEngineers, March 2009).
- **Statement of Support WQ-5:** The Planning Unit will support non-point source assessments, monitoring, and reduction efforts, including non-point source reduction efforts recommended in the Chamokane Creek Watershed Plan.

## STORMWATER

### Background, Issues and Consideration of Options

Stormwater runoff occurs during and following precipitation and snowmelt events. Common pollutants that are released and carried with stormwater include the following:

- Nutrients (phosphorus and nitrogen)
- Sediment
- Organic matter
- Bacteria
- Oil and grease
- Heavy metals
- Temperature
- Toxic substances.

Both the City of Spokane and Spokane County have regulations and programs designed to prevent drainage and water quality problems associated with stormwater runoff.

### ***City of Spokane Stormwater Management Plan***

The City of Spokane completed its Stormwater Management Plan in 2004. This plan offers a comprehensive program to guide stormwater activities. The existing City drainage system is composed of combined sanitary/storm sewers, separated storm sewers, dry wells, and regional infiltration basins. Initially, stormwater runoff flowed into a combined sanitary/storm sewer system. In 1992, the City of Spokane separated substantial portions of its combined sewer system. Under WAC 173-245, the City was required to develop a plan to address the combined sewer overflows that remained in operation. The City of Spokane Stormwater Management Plan provides guidelines for the evaluation of separation projects in order to ensure that they comply with stormwater goals and policies.

### ***Spokane County Stormwater Management Plan***

The Spokane Board of County Commissioners established the Stormwater Utility in 1992 to manage stormwater discharge in developing areas of unincorporated Spokane County. The Stormwater Utility develops stormwater management plans for the major planning areas within the county. Included in these management plans is the West Plains Stormwater Management Plan. The West Plains Stormwater Management Plan recommends the following actions:

- Gravity flow to regional infiltration site located in paleochannel north of Spokane International Airport. In 2001, this paleochannel was investigated as a possible stormwater infiltration site. This was done to study the depth, extent, and permeability of the paleochannel with the intent of placing an infiltration facility in this area. Because infiltration rates varied from less than 1 inch per hour to over 200 inches per hour, additional investigation is needed to determine the optimal location for the infiltration facility as well as the standard infiltration rate to use for the design.
- “Spot drainage” improvements will be conducted to address drainage complaints, such as short-term road flooding, damaged culverts, etc. This recommendation coincides with existing county practices.
- Pre-application meetings to present information to developers.
- Information management to continue tracking areas of known drainage and flooding problems with continuously updated database and GIS files.
- Basin-specific stormwater control ordinances with requirements for:
  - Preservation of natural locations and drainage systems
  - Major land-disturbing activities
  - Establishment of regional facilities
  - High risk drainage problem areas.
- Design reviews and site inspections by County Stormwater Water Utility staff for proposed private and public projects for identification of potential surface water problems.

### **Recommendations**

- **Statement of Position WQ-6:** The Planning Unit recommends implementation of the existing City and County stormwater management plans and development of stormwater programs where none currently exists in the WRIA. The Planning Unit emphasizes the following elements in managing stormwater:

- Improve coordination between land use regulators (counties, cities and WDNR) and Ecology regarding stormwater permits so that land use regulators have improved understanding of when this type of permitting is required.
- Encourage counties and cities to develop land clearing and grading incentives or ordinances such as best management practices (BMPs) that are based on NRCS FOTOG and *Eastern Washington Stormwater Manual* BMPs. All agricultural activities are exempt (please explain or provide a statutory reference for the exemption).
- Encourage counties and cities to consider incentives for low impact development that incorporates measures such as pervious surfaces and on-site stormwater treatment.
- Encourage counties to consider land use policies that preserve vegetation in natural (undeveloped) drainages.
- Recommend that that cities and counties, DOH, Ecology and health districts address inadequate wastewater and stormwater systems (e.g., combined sewers, septic systems and stormwater overflow systems).

## WETLANDS

### Background, Issues and Consideration of Options

Wetlands play an important role in water quality, water quantity and habitat protection. WRIA 54 wetlands include riparian zone wetlands adjacent to the Spokane River and Lake Spokane, as well as along tributary streams, and isolated wetlands, particularly in the West Plains region. In some locations, wetlands have been drained to make the land suitable for agriculture or development projects. Destruction of wetlands and wetland impacts are regulated through critical areas ordinances and shoreline master programs.

### Recommendation

- **Recommendation WQ-7:** The Planning Unit recommends that local governments retain qualified wetlands scientists to review wetland delineations and administer the wetlands portion of critical areas ordinances.



# CHAPTER 11. TECHNICAL INFORMATION BASE

## BACKGROUND AND ISSUES

Technical information and studies are needed to adequately resolve many of the water quantity, instream flow, and water quality issues identified in this watershed plan. These data needs include monitoring (e.g., stream flow) and analytical studies (e.g., hydrogeology characterization or water demand forecast). While the perceived need for additional information can be an endless quest, the Planning Unit has identified the key information needs considered below, to develop a list of the most critical data to address the most urgent water resources issues in the WRIA.

## CONSIDERATION OF OPTIONS

Table 11-1 was developed by the Planning Unit in considering the technical information that was unavailable for developing informed water resources recommendations for WRIA 54.

### **Recommendations**

- Basalt aquifer groundwater study
- Identification of areas of strained water resources
- Develop water supply and demand forecast for prioritized areas.
- Stream flow monitoring for tributaries
- Evaluate feasibility of stream flow gauge below Nine Mile Dam.
- Recommend increased level of staffing for water and natural resource functions.
- Recommend funding for ambient groundwater monitoring

### **Statement of Support**

- Support collection of water resources data

**TABLE 11-1.  
WRIA 54 TECHNICAL INFORMATION MATRIX**

Information	Why Information Is Needed	Possible Sources or Ways to Resolve
<b>Groundwater Water Resources</b>		
Aquifer characteristics: Columbia River Basalt Group aquifers—West Plains and western WRIA 54	Potential water source	New study, continued geologic mapping
	Potential aquifer storage projects Resolve groundwater mining/well interference problems	Geophysics study—basalt/basement interface could be more widely applied Hydrogeologic characterization Development of groundwater model
Aquifer characteristics: Paleochannel aquifers	Potential water source	New study, continued geologic mapping, monitoring (begun with Paleochannel QAPP)
	Potential aquifer storage projects Prevent water quality impacts	Airway Heights data collection

**TABLE 11-1 (continued).  
WRIA 54 TECHNICAL INFORMATION MATRIX**

Information	Why Information Is Needed	Possible Sources or Ways to Resolve
Aquifer characteristics: Chamokane Creek unconsolidated aquifer(s)—upper and lower aquifers within the Ford Subbasin of the Chamokane Creek Watershed	Stream impacts Potential use of lower aquifer for water supply	USGS study should provide much of this information. However, may not be looking at lower aquifer. Look at recharge/water balance for lower aquifer
What-if scenario modeling of SVRP aquifer	To evaluate options for meeting water demands Well locations Out-of-basin transfer	Utilize Bi-State Aquifer Model. Note that gaps exist in bi-state study (Trinity trough unaccounted 23 cfs; precipitation issues; water usage estimates—per capita residential, in-city, out-of-city)
<b>Groundwater Water Resources (continued)</b>		
Hydraulic continuity, especially in tributaries—where projected future water needs are large	Assess whether shallow groundwater can be used without impacting/impairing streams	Hydrogeologic study
Impacts of permit-exempt wells in some areas	Identify areas where these may create a problem (health, groundwater mining, stream flow impacts)	In Chamokane—USGS study Other areas—would need well inventory, land use data, GIS analysis Possibly apply similar study methodology as in Little Spokane—data gaps analysis based on complaint database. Identify areas where purveyors have been asked to help with providing water. Driven by GMA Comprehensive Plan. Note: 1996 report related to Comprehensive Plan estimated 10 acres recharge need for one house.
<b>Magnitude of Water Use</b>		
Actual water use Unmetered uses Permit-exempt Tie to specific areas: Spokane Reservation	More accurate water budget/forecasting	Voluntary pilot field study that could include spot metering, inventory, monitoring, estimating; GIS component
Use of Group B water systems (also relates to row above)	May relate to permit-exempt wells—better understanding of actual water use	Inventory, field investigation, relate to wells (well log database); water use estimates

**TABLE 11-1 (continued).  
WRIA 54 TECHNICAL INFORMATION MATRIX**

Information	Why Information Is Needed	Possible Sources or Ways to Resolve
<b>Water Appropriation</b>		
How much water legally allocated	More accurate water needs projections –need to know how much water is already committed.	Pre-adjudication water rights mapping Water rights database cleanup—water right claims evaluation, WRATS database review; investigate water rights; eventually adjudication will resolve these questions.
Overlap between claims and permit-exempt water rights	More accurate water needs projections –need to know how much water is already committed.	Map claims and known wells, incorporate land use information. Probably some need for field truthing. Could take on pilot study first.
Magnitude of inchoate water rights	Must be done in Phase 4	Municipal water right review, relates to service areas, joint Ecology/DOH review policies, will be affected by outcome of Municipal Water Bill lawsuit.
<b>Future Water Needs</b>		
Projected water needs—may be tied to build-out analysis and/or growth projections. Include hydraulic continuity	Necessary to enable planning for future water needs	Water demand forecast. Use growth projections, zoning, building/permit activity. Relate to parcel data, water service areas, and water sources. Primarily GIS exercise. Note possible use of Corps model
Areas of strained water resources—Known areas of declining water levels or trouble obtaining water, or areas likely to experience population growth where water sources are not robust.	Necessary to enable planning for future water needs	Possibly apply similar study methodology as in Little Spokane—data gaps analysis based on complaint database. Identify areas where purveyors have been asked to help with providing water. Driven by GMA Comprehensive Plan. Note: 1996 report related to Comprehensive Plan estimated 10 acres recharge need for one house.  Stevens County has also developed methodology for this based on areas known to have limited water available, and integrating with zoning
Feasibility of reclaimed water use	Meeting future water needs, instream and out-of-stream	Support project-specific studies
Feasibility of water storage projects West Plains Aquifer Storage and Recovery Chamokane Creek watershed (surface storage) Lower Chamokane Aquifer Storage and Recovery	Meeting future water needs, out-of-stream and instream	Support project-specific studies

**TABLE 11-1 (continued).  
WRIA 54 TECHNICAL INFORMATION MATRIX**

Information	Why Information Is Needed	Possible Sources or Ways to Resolve
Water conservation effectiveness	Meeting future water needs, instream and out-of-stream	Surveys Demonstration projects
Market research on public acceptance of water conservation measures and practices.		Education efforts
Tributary stream flow	Instream flow, water availability, meeting future water needs	Stream flow monitoring program
Instream flow assessment for Mill Canyon Creek	Fish and other instream flow needs	Toe width study
<b>Water Quality</b>		
Water quality, riparian and channel conditions in tributaries	Relates to new water rights, instream flow, possible future 303(d) listings, and habitat.	Monitoring and assessment; surveys
Accurate wetland maps, including restoration opportunities	Relates to water storage, instream flows, habitat, water quality	Wetland mapping
Non-point source pollution contribution—general	Data gap associated with TMDLs	Monitoring and assessment (begun with Paleochannel and Nine-Mile QAPPs)
Non-point source pollution contribution—Lake Spokane	Data gap associated with TMDLs	Implement monitoring described in Nine-Mile QAPP ( <i>note: this is recommended in Chapter 10</i> )
Non-point source pollution contribution—West Plains/paleochannel region	Water quality area of interest because of urban land use growth and potentially vulnerable aquifers. Ultimately contributes to Spokane River, so also associated with Spokane River water quality problems	Implement monitoring described in Paleochannel QAPP ( <i>note: this is recommended in Chapter 10</i> )
Impacts of Spokane River water quality on Lake Roosevelt	Sediment oxygen demand, and nature and extent of phosphorus amount in bottom of pool  Spokane Tribe concern  Also relates to TMDLs and future actions in Lake Roosevelt	Monitoring program CE-QUAL-W2 model

<b>TABLE 11-1 (continued).</b> <b>WRIA 54 TECHNICAL INFORMATION MATRIX</b>		
Information	Why Information Is Needed	Possible Sources or Ways to Resolve
Groundwater quality—general	Relates to future water supply and water quality conditions	Ecology’s ambient groundwater monitoring program. Add West Plains to ambient groundwater monitoring program
<b>Land Use</b>		
High resolution land use data	Would improve GIS analysis capabilities	New data acquisition—remote sensing
Impacts/management of beavers	Beavers can play an effective role in natural water storage. Also can create problems for nearby landowners.	Field assessment

## RECOMMENDATIONS

While all the technical information needs identified in Table 11-1 are important, the Planning Unit has selected the projects described below to recommend for implementation. These projects have not been prioritized.

- **Recommendation TI-1:** Basalt Aquifer Groundwater Study—The Columbia River Basalt Group (CRBG) aquifers that underlie the West Plains area are used for water supply. Groundwater levels have declined in some areas, indicating the groundwater resource is potentially strained. These aquifers (there are at least three distinct aquifers within this group (describe this group)) are not well understood. Elsewhere in the Pacific Northwest, basalt aquifers are used extensively for water supply, indicating that a better understanding of the CRBG aquifers in the West Plains area would be beneficial to understand how this resource can be used in a sustainable way.
  - **Possible Study Scope Component TI-1.1:** Coordination with adjacent WRIsAs so that a logical hydrologic study area can be evaluated
  - **Possible Study Scope Component TI-1.1:** Geologic and well mapping
  - **Possible Study Scope Component TI-1.1:** Geophysical evaluation
  - **Possible Study Scope Component TI-1.1:** Aquifer testing
  - **Possible Study Scope Component TI-1.1:** Groundwater modeling
  - **Possible Study Scope Component TI-1.1:** Evaluation of actual water use and water allocated
  - **Possible Study Scope Component TI-1.1:** Evaluation of the paleochannel aquifers, including their relationship to the CRBG aquifers
  - **Possible Study Scope Component TI-1.1:** Evaluation of the CRBG aquifers in the southwest portion of WRIA 54 to determine if water could be provided in a sustainable and economic way from the CRBG in this area.
- **Recommendation TI-2:** Identification of Areas of Strained Water Resources—Identifying potential and existing areas of strained water resources, where water supply is not currently

available to meet growing water demand for out-of-stream water needs, is a major data need for WRIA 54. Stevens, Lincoln and Spokane Counties all have begun developing more proactive methodologies to identifying these areas within their jurisdictions, and enacting programs to address the challenges associated with these areas. The Planning Unit supports development of methodologies to accurately identify areas of strained water resources, and development of tools to manage land use needs associated with these areas.

- **Possible Study Scope Component TI-2.1:** Conduct buildout analysis for subbasins and study areas according to current zoning and projected water needs. Note that Ecology guidance suggests using 20-year projections from the state Office of Financial Management (OFM) for setting instream flows and allocating water for future out-of-stream uses.
- **Possible Study Scope Component TI-2.2:** Develop water supply and demand forecasts for subbasins and study areas.
- **Possible Study Scope Component TI-2.3:** Compile well information, including number, location, construction specifications and use.
- **Possible Study Scope Component TI-2.4:** Develop estimates for actual water use
- **Possible Study Scope Component TI-2.5:** Hydrogeologic study to understand the available water resources
- **Possible Study Scope Component TI-2.6:** Compile complaint database information
- **Possible Study Scope Component TI-2.7:** Work with area residents to understand their needs so practical solutions can be found.
- **Recommendation TI-3:** Develop Water Supply and Demand Forecast for Prioritized Areas
  - **Possible Study Scope Component TI-3.1:** Utilize growth projections, zoning, building/permit activity
  - **Possible Study Scope Component TI-3.2:** Relate to parcel data, water service areas
  - **Possible Study Scope Component TI-3.3:** Identify existing water sources and capacity
  - **Possible Study Scope Component TI-3.4:** Determine unit water needs and conservation/infrastructure assumptions
- **Recommendation TI-4:** Stream flow monitoring for WRIA 54 tributaries. Establish stream flow monitoring program for WRIA 54 tributaries. Monitoring locations would be determined based on available funding, labor and equipment resources and the priorities as determined by the Planning Unit at the time of initiating the monitoring program.
- **Recommendation TI-5:** Evaluate feasibility of establishing a stream flow gauge below Nine Mile Dam. Such a gage was identified as a need by the Spokane River Instream Flow Work Group so that Spokane River flow, including discharge from the SVRP Aquifer downstream from the ‘at Spokane’ gage, could be measured directly rather than estimated.
- **Recommendation TI-6:** Recommend local governments and conservation districts seek to increase funding for water and natural resources staff, in part to carry forth Plan implementation beyond the Phase 4 grant funding. Additional staff and/or funding support is needed to implement water resources management projects and programs, and to conduct and supervise technical studies needed for water management.

- **Recommendation TI-7:** Recommend that the Legislature support Ecology’s ambient groundwater monitoring program and recommend that Ecology consider the West Plains for an ambient groundwater monitoring program.
- **Statement of Support TI-8:** Support Collection of Water Resources Data—Continued data collection is essential to building the knowledge base necessary for informed water resources management. Data collection efforts may be accomplished by individual entities, the Planning Unit, and volunteer efforts. All data collected through Planning Unit supported efforts will be available to Planning Unit members.





# CHAPTER 12. WATER RESOURCES EDUCATION

## BACKGROUND AND ISSUES

In September 2006, Washington State made a commitment to environmental education with the launch of the E3 Washington initiative, a statewide comprehensive approach to optimizing environmental education for all Washington residents.

Water resources education programs for WRIA 54 should be well planned and targeted to specific audiences. Each such program should be connected to the mission of the entity responsible for implementing it.

An important component of any education program is preparing and updating an inventory of existing programs, to facilitate collaboration and avoid duplication. Table 12-1 summarizes water resources education programs that are ongoing in WRIA 54. All existing and new programs designed to address water resources issues in WRIA 54 should consider existing efforts. Excellent, low cost educational materials are available from the American Geological Institute, American Water Resources Association, as well as EPA, Ecology, and many other organizations.

### **Recommendations**

- Conduct a water resources education needs assessment in WRIA 54.
- Recommend the legislature provide additional funding for environmental education and outreach staff.

### **Statement of Support**

- Education programs should contribute information and support E3 Washington
- Include funding for education and outreach within grant applications
- Recommend Ecology make education and outreach a priority.
- Encourage local governments to hire or retain education and outreach staff.

The following are the key issues associated with water resources education in WRIA 54:

- There is a lack of staff and funding for educational programs.
- Most water resources education for kindergarten through Grade 12 occurs at the initiative of individual teachers.
- There is a need for a consistent message related to water resources education and outreach.
- Public education is needed for the following topics:
  - Indoor and outdoor water conservation
  - Legal use of water (exempt well limitations, esp.)
  - How septic systems work and the maintenance needed
  - Hazardous materials procedures and disposal of waste products
  - How all issues (growth, water quality, instream flow, etc.) affect the watershed (i.e., the holistic approach)
  - Lifelong education
  - Landowner education
  - Importance of maintaining / protecting riparian zones and wetlands.

**TABLE 12-1.  
ONGOING EDUCATION PROGRAMS**

Water Management Education	Water Quality Education	Land Use Education
<ul style="list-style-type: none"> <li>• Stevens, Spokane and Lincoln County Conservation District programs (including education on surface water flow measurement and water conservation)</li> <li>• Water purveyor programs related to water system planning (including water conservation)</li> <li>• Spokane Aquifer Joint Board education programs for water conservation</li> <li>• Spokane County Water Resources aquifer model and Enviro-kids program</li> <li>• Spokane Youth Environmental Conference (now extending to Wellpinit)</li> <li>• Society of Inland Northwest Environmental Scientists, a non-profit organization that promotes technical and informational exchange related to environmental science</li> <li>• Washington State University (WSU) cooperative extension water conservation program</li> <li>• City of Spokane Water Stewardship</li> <li>• Spokane Community College water resources program</li> <li>• Stevens County Water Conservancy Board</li> <li>• Regional Water Conservation Collaboration, a collaboration between cities, counties, non-profits, water purveyors, Ecology and DOH</li> <li>• Spokane Forum</li> <li>• Lincoln County Water Festival</li> <li>• WRIA 55/57 implementation actions to educate the public on outdoor irrigation</li> <li>• Idaho and Washington Regional Dialogue</li> <li>• Natural Resources Conservation Service (NRCS)</li> </ul>	<ul style="list-style-type: none"> <li>• Stevens, Spokane and Lincoln County Conservation District water quality education programs</li> <li>• Spokane County Water Resources Programs</li> <li>• Spokane County and City of Spokane stormwater programs</li> <li>• Spokane Aquifer Joint Board education programs for wellhead protection</li> <li>• Ecology’s programs that include environmental incentives for business (e.g., the Enviro Stars program), hazardous materials education, water education for students and teachers (Project Wet), watershed pledge program and Washington’s Water Campaign</li> <li>• Spokane Tribe Discovery Week, Kids in the Creek, Water Festival and local school field trips and activities.</li> <li>• Spokane Forum</li> <li>• Regional Health Department education programs, including hazardous materials and septic systems</li> <li>• Urban Waters Initiative, an Ecology and Regional Health District partnership to address water quality issues along the urban reaches of the Spokane River</li> <li>• Idaho and Washington Regional Dialogue</li> <li>• Natural Resources Conservation Service (NRCS)</li> </ul>	<ul style="list-style-type: none"> <li>• Stevens, Spokane and Lincoln County Conservation District programs (including forestry, soil conservation and shoreline protection)</li> <li>• Washington Department of Natural Resources programs (e.g., education on tree thinning)</li> <li>• Natural Resources Conservation Service (NRCS)</li> </ul>

## CONSIDERATION OF OPTIONS

The Planning Unit identified activities in each of four general areas that could be implemented as part of a water resources educational program for WRIA 54:

- Water Management
  - Conduct education and outreach on the risks and benefits of reclaimed water use for the public and technical community. Implementing entities to include DOH, Ecology and entities in WRIA 54 that have reclaimed water projects (Spokane County, City of Spokane, City of Airway Heights and City of Medical Lake).
  - Conduct public education on water rights and permit-exempt wells with Ecology as the implementation lead. Consider implementation as a component of pre-adjudication or water management rule-making. DOH (with permit for septic), conservation districts, counties, cities and farm organizations such as the Stevens County Farm Bureau, could be involved in distribution of educational materials.
  - As a component of water rights and conservation education, provide education, outreach and assistance on the water trust program (to park water rights) to farmers and businesses that hold water rights.
  - Cities and counties should develop and implement a regional education and awareness program to promote wise and efficient use of indoor and outdoor water, with voluntary participation from water purveyors. Implement programs on the West Plains as a priority in WRIA 54.
  - Develop, support and implement a public education program for water use efficiency and conservation for Group B water systems and the public.
  - The state should establish a statewide TV and radio campaign on water use efficiency and conservation.
  - Water purveyors should involve the WRIA 54 Planning Unit in development and implementation of water use efficiency plans in WRIA 54.
  - The Spokane River Forum should promote the “Watershed Week” concept in education.
  - Ecology, WDFW, counties and the Spokane Tribe should support and implement public education program on the benefits and problems of beaver dams.
- Land Use
  - Ecology, WDFW, WDNR, Stevens County Water Conservancy Board, and non-governmental organizations should support and provide education for developers and real estate groups on water resources issues (e.g., water rights, permit exempt wells, land clearing, stormwater, erosion control, shorelines).
  - Ecology and DOH should meet with city and county planning departments, councils and commissioners on an annual basis to educate on water resources planning (including water rights and water system planning) and why this type of planning is important.
  - Support education for timber landowners on BMPs and stand management. Consider implementation through WDNR, conservation districts, and forestry organizations.
  - Ecology, WDFW, WDNR, non-governmental organizations, counties and cities should conduct public outreach (presentations and workshops) on watershed health to the American Planners Association.

- WDNR, the Spokane Tribe, Spokane County, Stevens County and Lincoln County should educate landowners on watershed management and delayed surface water yields, including benefits of planting seral species.
- Water Quality
  - Ecology, WDFW, WSU Extension, counties, cities and conservation districts should support and promote development of volunteer monitoring programs. Reach out to schools, citizen groups, Spokane Community Colleges, Eastern Washington University, and Gonzaga.
  - Ecology should provide education, training and quality assurance for volunteer monitoring programs.
  - Support education regarding non-point source pollution with implementation through Ecology, conservation districts, county and city stormwater programs and/or water resources programs.
  - Ecology, water purveyors and DOH should support education of small businesses and homeowners on the proper storage and disposal of hazardous and harmful materials.
  - Chambers of commerce, counties and cities should support the Urban Waters Initiatives (which is implemented by Ecology and the Regional Health Department).
  - Ecology and the Regional Health Department should extend the Enviro-Stars program into WRIA 54.
- Education for Kindergarten through Grade 12
  - Extend and build Spokane Tribe’s environmental educational programs
  - The Spokane River Forum should connect to E3 Washington, improve marketing of educational programs and materials to local schools and colleges, and advertise the Environmental Education Association of Washington report card, which shows that students who participate in environmental education programs have higher test scores.
  - Support programs that develop and implement local curriculum workshops for teachers on watershed health.

## RECOMMENDATIONS

Water resources educational programs can be implemented through coordinated efforts and building from existing programs. The Planning Unit encourages these partnerships. Educational efforts should be coordinated through the Spokane River Forum and RWCC where appropriate, both of which are established forums for water resources and environmental education. Working through these existing entities will result in a consistent message on educational topics. The following recommendations and statements of support are not listed in any priority order.

- **Statement of Support EDU-1:** Water resources education programs in WRIA 54 should contribute information to and support E3 Washington.
- **Recommendation EDU-2:** Conduct a water resource education needs assessment in WRIA 54.
- **Statement of Support EDU-3:** Include funding for education and outreach (staff and materials) within grant applications where applicable.
- **Recommendation EDU-4:** The legislature should provide additional funding for education and outreach staff, such as for conservation districts, for efforts within WRIA 54.

- **Statement of Support EDU-5:** Ecology should make education and outreach a priority.
- **Statement of Support EDU-6:** Encourage local governments to hire or retain education and outreach staff.





WRIA 54 Planning Unit  
**WRIA 54 (Lower Spokane) Watershed Plan**

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**PART 3.**  
**IMPLEMENTATION**

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# CHAPTER 13. IMPLEMENTATION

The purpose of this chapter is to provide a framework for implementation of the WRIA 54 Watershed Plan, both to meet the requirements of the Watershed Planning Act and to support implementation of the WRIA 54 Watershed Plan into the future.

## WATERSHED PLAN ADOPTION PROCESS

In accordance with WRIA 54 Planning Unit Operating Procedures (dated 11/28/07), this Watershed Plan was approved by the WRIA 54 Planning Unit at two Planning Unit meetings held on August 5 and August 10, 2009. Following Planning Unit approval, this Watershed Plan will be provided to the Boards of County Commissioners for Spokane County, Stevens County and Lincoln County for adoption at public hearing pursuant to the Watershed Planning Act (RCW 90.82). The legislative authorities for Spokane, Stevens and Lincoln Counties are required to hold legislative session to either adopt the Plan or return it to the Planning Unit with suggested revisions.

Compliance with the State Environmental Policy Act (SEPA) is required for all watershed plans developed under the Watershed Planning Act. A Watershed Plan is classified as a “non-project action” under SEPA (governmental actions involving changes to policies, plans, and programs). To assist with this environmental review, Ecology developed an Environmental Impact Statement (Ecology, 2003) to review recommendations that may be included to watershed plans. The WRIA 54 Watershed Plan recommendations were evaluated against the alternatives evaluated in the Statewide environmental impact statement (EIS). This analysis is included in Appendix B.

## WATERSHED PLANNING IMPLEMENTATION

Following approval and adoption of the Watershed Plan, the Planning Unit can apply to Ecology for funding to implement the Watershed Plan. Watershed Plan implementation is referred to as Phase 4 of Watershed Planning. Currently, grant funding is available for up to five years of implementation. Phase 4 implementation funds include:

- Up to \$100,000 for the first three years of implementation, with a 10% required match (\$11,111 per year). Second and third year funding is conditioned on completion of an approved Detailed Implementation Plan (per RCW 90.82.043 and RCW 90.82.048).
- Up to \$50,000 for the fourth and fifth years of implementation, with a 10% required match (\$5,556 per year).
- Matching funds may include financial contributions, in-kind goods and services (including volunteer services).

### **Obligations**

- Develop a framework for the future structure of the WRIA 54 Planning Unit to guide Watershed Plan implementation and water resources management during and beyond Phase 4.
- Amend the current Memorandum of Agreement (MOA) that guides the Planning Unit’s activities in Phase 3 to include Phase 4
- Develop and execute Memoranda of Agreement (MOAs) in the first and subsequent years of Phase 4 to guide Phase 4 Implementation and to guide water resources management in WRIA 54 beyond Phase 4.

### **Recommendations**

- Update the Watershed Plan and Detailed Implementation Plan in year four of Implementation (2012-2013) and then every five years following this first update.

## ROLE OF PLANNING UNIT IN IMPLEMENTATION

The Planning Unit anticipates that the Phase 3 Planning Unit will continue as the governing body for Watershed Plan implementation during at least the first two years of Phase 4 implementation.

### Framework for Implementation

The Planning Unit agreed that it will be important to define concepts for the framework in this Watershed Plan and then to develop the details during the first year and subsequent years of implementation. Concepts discussed by the Planning Unit for incorporation into the framework include:

- Define the roles and responsibilities of the lead agency, lead and supporting implementation entities, as well as state and local government entities for Watershed Plan implementation during and beyond Phase 4 and for sharing of water resources management beyond Phase 4.
- Consider the WRIA 54 Planning Unit (and its future structure) as a “clearing house” for tracking, working together and reporting out on implementation projects.
- Take advantage of the benefits gained by implementing entities working together and sharing efforts.
- Incorporate adaptive management into Plan implementation and Plan updates.
- Incorporate mechanisms for inter-WRIA coordination that consolidates Watershed Planning efforts across WRIA boundaries and considers physical similarities / differences across jurisdictional boundaries.
- Incorporate mechanisms for efficient coordination considering that WRIA 54 includes a number of government entities, including Washington State, three counties, numerous cities, the Spokane Tribe, Fairchild Air Force Base and numerous water purveyors.
- Incorporate implementation strategies that recognize the diversity of WRIA 54 in land use, demographics, natural environment, water resource needs and jurisdictions.
- Incorporate mechanisms that direct implementation resources to the projects and actions prioritized by the Planning Unit, or other governing body according to the goals of the WRIA 54 Watershed Plan. This mechanism would not preclude or exclude individual entities within the watershed from pursuing other grant funds and implementing specific projects. The Planning Unit will encourage and support individual entities to apply for funding to support and implement action items and the goals outlined in the watershed plan.
- Develop strategies to foster citizen participation.
- Consider prioritizing beneficial water uses.
- Consider establishing objectives for Watershed Plan implementation actions.

Since state funds are currently not available after year five of Phase 4, the Planning Unit agreed that the structure for the Planning Unit and the agreements needed to continue implementation beyond Phase 4 should be in place by the end of year four of Implementation. On the current Watershed Planning schedule, year four of Implementation in WRIA 54 will occur in 2012 and/or 2013.

- **Obligation IMP-1:** Develop a framework for the future structure of the WRIA 54 Planning Unit to guide Watershed Plan implementation and water resources management during and beyond Phase 4.
- **Obligation IMP-2:** The Planning Unit recommends that the Memorandum of Agreement (MOA) that guides the Planning Unit’s activities in Phase 3 be amended to include Phase 4.

## Governance Structure

The Planning Unit will need to determine the governance structure for implementing the Watershed Plan. The Planning Unit discussed various governance structures for implementation, including:

- Continuing as a Planning Unit, meeting as needed to coordinate and address WRIA 54 implementation items. Break into interest-based work groups (or sub-committees) after completion of the DIP. Examples of interest based groups could include:
  - WRIA 54 and WRIA 55/57 group to address Spokane River main stem, SVRP Aquifer and urban area items;
  - West Plains work group, which may include the northern communities in WRIA 34.
  - Chamokane Creek work group to address issues specific to the Chamokane Creek watershed.
  - Stevens County and Spokane Tribe work groups to address issues north of the Spokane River in WRIA 54 in conjunction with other Stevens County and Spokane Tribe items.
  - Topic specific work groups (such as water quality and instream flow).
- Transforming to another governmental group (e.g., a Watershed Management Partnership per RCW 39.30 as is being implemented in WRIA 59).
- Becoming a non-profit entity.

In addition, the current MOA does not address the multi-jurisdictional nature of this WRIA or the urban and rural differences within the WRIA. These issues were identified as needs for the Planning Unit as it enters Phase 4 implementation.

- **Obligation IMP-3:** The Planning Unit agreed that they should develop Memoranda of Understanding (MOUs) or Memoranda of Agreement (MOAs) between the implementing entities and Ecology in the first year of Phase 4 to guide management of water resources in WRIA 54 beyond Phase 4. Because Ecology does not represent other state agencies in Phase 4 as it does in Phase 3, the Planning Unit may also determine a need for MOUs/MOAs with other state agencies. The Planning Unit acknowledged that the agreements should have a broad scope and provide over-arching guidance to address water resources issues across jurisdictional boundaries.

The intention of the Watershed Planning Act was to involve local entities in water resources management in their watersheds. The Planning Unit agreed that they would like to continue to be involved in the management of water resources in WRIA 54 beyond Phase 4 of Watershed Planning. The Planning Unit is calling this concept “shared governance” of water resources. In a general sense “shared governance” involves a sharing of the roles and responsibilities associated with water resources management in WRIA 54. The Planning Unit intends to further define these shared roles and responsibilities in the first four years of Phase 4 Implementation.

## INTER-WRIA COORDINATION

The WRIA 54 Planning Unit discussed the benefits of inter-WRIA coordination to address implementation items and agreed that coordinating solutions provides economies for the implementing governments to address similar issues across WRIA boundaries. The following provides a summary of action items (i.e., recommendations, obligations or statements of support) within the WRIA 54 Watershed Plan that overlap with action items in Watershed Plans for adjacent WRIsAs:

- Recommendations that Overlap with Adjacent WRIAs—Water Rights
  - Regional water master
  - More resources for water rights database, processing and enforcement
  - Adjudication
- Recommendations that Overlap with Adjacent WRIAs—Water Conservation
  - Regional message
  - Priority in all adjacent plans
- Recommendations that Overlap with Adjacent WRIAs—Instream Flow
  - Integrated recommendation for Spokane River
- Recommendations that Overlap with Adjacent WRIAs—Water Storage/Recharge/Wetland Restoration
  - Several active implementation projects associated with wetlands
  - Enhanced infiltration (shallow aquifer recharge and aquifer storage and recovery)
- Recommendations that Overlap with Adjacent WRIAs—Integrated Land Use and Water Supply Planning
  - Consistency with Comprehensive Plans
  - Criteria for demonstrating water availability
  - Identify and plan for areas of strained water resources
  - Cooperative water supply planning for West Plains area
- Recommendations that Overlap with Adjacent WRIAs—Technical Information Needs
  - Hydrogeologic study for West Plains area
  - Stream gauging
  - Improved runoff forecasting/drought planning

## **IMPLEMENTATION MATRIX—OBLIGATIONS AND RECOMMENDATIONS**

During development of this Watershed Plan, the Planning Unit identified water resources goals and issues (or concerns) under various categories and then developed a number of alternative solutions to move towards the goals and to address the issues. This process and the results are documented in Part 2 of this Plan (i.e., Chapters 4 through 12). The Planning Unit then identified which of the alternative solutions they could commit to as obligations (in accordance with RCW 90.82.130). The remainder of the solutions were then characterized as recommendations or statements of support or position. The statements of support and position are listed in the following section.

The obligations and recommendations are listed in Table 13-1, the implementation matrix at the end of this chapter, along with lead and supporting entities, timelines, priorities, ideas for inter-WRIA coordination and funding options. The Planning Unit intends to further develop the implementation matrix within the Detailed Implementation Plan (i.e., the first year of Phase 4 Implementation). Definitions for obligations and recommendations are as follows:

- **Obligation**—Any action accepted as an obligation by County government, State agencies and / or any other organization as denoted within the implementation matrix. Per RCW 90.82.130(3), obligations agreed to by State and County government are binding. For other organizations that voluntarily accept obligations, the organization must implement the obligation if it has the resources to do so. The following sections from RCW 90.82 provide directives to agencies and organizations about Watershed Plan obligations:
  - RCW 90.82.130(3)(c) “for an organization voluntarily accepting an obligation, the organization must adopt policies, procedures, agreements, rules, or ordinances to implement the Plan and should annually review implementation needs with respect to budget and staffing.”
  - RCW 90.82.130(4) “After a Plan is adopted...the department (of Ecology) shall use the Plan as the framework for making future water resource decisions for the planned watershed. Additionally, the department shall rely upon the Plan as a primary consideration in determining the public interest related to such decisions.”
- **Recommendation**—Recommendations are not binding. However, by taking on a recommendation, the lead and supporting entities must consider the timelines and resources they may need to implement the recommendation and to include this information within the implementation matrix. The lead and supporting entities for recommendations are expected to work in good faith to implement the recommendations in accordance with the Watershed Plan and to communicate future implementation activities and changes to the Planning Unit or future governing entity for WRIA 54.

As stated in Chapter 1, items included in Chapters 4-12 as “Actions to Consider in Implementation” are not binding. They are included in the Watershed Plan only as a record of the ideas and concepts discussed by the Planning Unit as possible specific actions to implement recommendations. During implementation, the Planning Unit may use these as starting point in discussions about how to implement each recommendations. The Planning Unit may also develop new or different ideas about how to implement each recommendation.

## STATEMENTS OF SUPPORT AND POSITION

A statement of support is an alternative for which there is no specific implementable action. An example of a statement of support is, “Support development of and coordinate with surrounding WRIAs for use of reclaimed water.” A statement of position describes the Planning Unit’s opinion about a specific topic or idea, but does not attach an intended action item to the topic or idea. The purpose for listing the statements of support and position in this Plan is to document the Planning Unit’s position on various issues and to provide opportunities for entities to use / refer to these statements to support applications for funding. Classification as a statement of support or position is not an indication that these items are considered lower priority items by the Planning Unit. Table 13-2 summarizes the statements of support and position presented in this plan.

## SCHEDULE FOR UPDATING THE PLAN

The Watershed Plan is a living document that will be updated following a principle of adaptive management (i.e., incorporating lessons learned over time to improve water resources management). Updates may involve omitting actions that are no longer relevant or have been completed, changing or adding actions to address new concerns, changing implementation priorities and updating the framework and agreements that support Plan implementation during and beyond Phase 4 of Watershed Planning.



**Recommendation IMP-4:** The Planning unit recommends updating the Watershed Plan and DIP in year four of implementation (2012-2013) and then every five years following this first update. For efficiencies, the Planning Unit recommends that the DIP be updated in conjunction with the Watershed Plan. Although it would be convenient for Watershed Plan and DIP updates to coincide with GMA planning updates, this would not be practical since WRIA 54 includes three Counties (i.e., Spokane, Stevens and Lincoln Counties) that have different GMA planning timelines.

**TABLE 13-2.  
STATEMENTS OF SUPPORT AND POSITION**

Statement Number	Page Number	Statement
WUE-6	5-4	Support continued funding for County Conservation Districts and NRCS work with agricultural irrigators to assess and improve water use efficiency.
WUE-7	5-4	Support development of and coordinate with surrounding WRIsAs for use of reclaimed water
LU-1	8-4	The Washington Utilities Coordinating Council (WUCC) has initiated a review of the Coordinated Water System Plan and determined not to conduct a complete update at this time. If an update is initiated, the Planning Unit supports addressing such issues as: use of consistent population estimates; consistency with approved Comprehensive Plans; improvements to the way commitments to provide water are managed for plats that may not develop for several years, planning to provide water for current and future needs on the West Plains; evaluation of transferring water from the SVRP Aquifer to the West Plains; sharing, leasing and acquisition of water rights; sharing of water system plans with adjacent purveyors; water-right transfers; connectivity; infrastructure improvements; and conservation.
LU-14	8-8	The Planning Unit recommends support for sustainable agriculture (including forestry).
LU-15	8-9	Support efforts to provide public access to water-related recreation areas.
ISF-1	9-2	The Spokane River Instream Flow Work Group’s memorandum, described above and provided in Appendix B, documents the WRIA 54 Planning Unit’s position regarding instream flow for the main stem Spokane River above Nine Mile Dam, with the one addition of requesting that the option of a water right reservation be considered from the “West Arm” of the SVRP Aquifer.  Prior to Ecology undertaking rule-making for this reach, the Planning Unit would like a broader community-based process that incorporates the flexibility needed to meet the varied water needs of the region and presents a complete set of the information that was developed through the Watershed planning process. This is likely to require a minimum two-year effort. If Ecology is prepared to support this effort, the Planning Unit urges Ecology to initiate this work as soon as possible.
ISF-2	9-3	The Planning Unit chose not to recommend a control point at Little Falls at this time.
WQ-2	10-2	Support monitoring efforts undertaken by individual entities, regional groups or the Planning Unit.
WQ-5	10-6	The Planning Unit will support non-point source assessments, monitoring, and reduction efforts, including non-point source reduction efforts recommended in the Chamokane Creek Watershed Plan.
WQ-6	10-7	The Planning Unit recommends implementation of the existing City and County stormwater management plans and development of stormwater programs where none currently exists in the WRIA.

**TABLE 13-2 (continued).  
STATEMENTS OF SUPPORT AND POSITION**

Statement Number	Page Number	Statement
TI-8	11-7	Support Collection of Water Resources Data—Continued data collection is essential to building the knowledge base necessary for informed water resources management.
EDU-1	12-4	Water resources education programs in WRIA 54 should contribute information to and support E3 Washington
EDU-3	12-4	Include funding for education and outreach (staff and materials) within grant applications where applicable.
EDU-5	12-5	Ecology should make education and outreach a priority.
EDU-6	12-5	Encourage local governments to hire or retain education and outreach staff.

**TABLE 13-1.  
WATERSHED PLAN IMPLEMENTATION MATRIX**

Unique ID No.	Implementation Item	Lead /Sponsoring Entity <sup>a</sup>	Supporting Entity <sup>b</sup> in principle	Coordination with other WRIAs	Potential Funding Opportunities
WRA-1	RECOMMENDATION. Recommend that the State Legislature provide more staff and funding to Ecology to process water rights and for compliance activities. The Planning Unit particularly encourages consideration of establishing a regional water master to support, for example, instream flow and adjudication, to enforce against illegal water use, to help process water right applications, and to provide public education on water rights.	State Legislature	Ecology, Spokane City	Yes. WRIAs 55/57 and 56.	Ecology budget established by legislature and governor. Watershed Planning Grants
WRA-2	RECOMMENDATION. Regular updates from Ecology to the Planning Unit regarding water right activity in WRIA 54. This will include water right applications, changes and transfers and any potential water rights decisions. Planning Unit members or the Planning Unit as a whole may provide input to Ecology through the normal public comment periods associated with these actions.	Ecology	Planning Unit	Yes	Phase 4 funds.
WRA-3	RECOMMENDATION. Recommend that the Planning Unit consider prioritizing hydrologic subbasins for Ecology to process water rights applications. Note that all subbasins in a priority area would need to be included and that Ecology has to follow state laws to process water rights in order of application date, but can do so within a subbasin or watershed.	Planning Unit	Ecology	Yes - City of Spokane will not support the recommendation or resulting process unless it includes at a minimum all WRIAs with SVRP waters.	Phase 4 funds. In-kind donation of time from participants.
WRA-4	RECOMMENDATION. Conservancy Boards in Stevens, Spokane and Lincoln Counties should develop and maintain a public database of willing water rights buyers and sellers within their respective Counties. The Conservancy Boards will need to make statements that the extent and validity of water rights in the database are not guaranteed. (This is currently being implemented by the Stevens County Water Conservancy Board.)	Stevens County Water Conservancy Board, Spokane County Water Conservancy Board, Lincoln County Water Conservancy Board	Ecology, Spokane City	Yes	Supplemental funding, in-kind contribution from Planning Unit members
WRA-5	RECOMMENDATION. Recommend that the Spokane Tribe develop a water code for the Spokane Tribe and Reservation, including fee lands.	Spokane Tribe		No	EPA, Spokane Tribe
WRA-6	RECOMMENDATION. Planning Unit will review, discuss, and recommend improvements to the relinquishment law.	Stevens County Farm Bureau	Planning Unit	Yes	Phase 4 funds
WUE-1	RECOMMENDATION. Coordinate water use efficiency and conservation measures in WRIA 54 through the existing Regional Water Conservation Collaboration (RWCC) and Spokane County Coordinated Water System Planning.	WRIA 54 water purveyors	Spokane County, Ecology, WDOH	Yes	Utility rate payers, with support from supplemental funds

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WUE-2	RECOMMENDATION. Recommend that local governments work toward improved water use efficiency in landscaping and other outdoor water uses.	WRIA 54 Counties and Cities, Fairchild AFB, Spokane Tribe, local governmental entities (i.e. park districts)	DOH, Ecology Spokane City	Yes	Phase 4 funds, supplemental funds
WUE-3	RECOMMENDATION. Recommend that counties, cities and water purveyors develop and implement indoor and outdoor water conservation incentives.	WRIA 54 water purveyors	Spokane City Spokane City - Staff Time & Project Support	Yes	Utility fees, state grants
WUE-4	RECOMMENDATION. Recommend that purveyors provide notice to the Planning Unit when they initiate water use efficiency/conservation goal setting.	Water purveyors	Planning Unit, DOH	Yes	Purveyor in-kind contribution
WUE-5	RECOMMENDATION. Additional funding is needed to support implementation of water conservation and reclaimed water use.	State Legislature	Ecology, DOH, Planning Unit	Possibly	State/federal grants
WFN-1	RECOMMENDATION. Consider a regional management and coordination organization for water supply on the West Plains. The West Plains bridges WRIAs 54, 43, 56 and 34, Spokane and Lincoln Counties, and several cities, making a planning/management area specific to the West Plains necessary. This organization should encourage improvement of connectivity between water systems, as allowed by cost and water right constraints.	Airway Heights, FAFB, Medical Lake, City of Spokane, Four Lakes	Ecology, DOH, Spokane County, Spokane City	Yes. WRIAs 34, 43 and 56.	Phase 4 or supplemental funds to start. Ongoing support from members.
WFN-2	RECOMMENDATION. Complete planning for water usage on the Spokane Reservation and improvements needed for the Spokane Tribe's water systems, including the following: inventory current water use of the Spokane Indian Reservation; and complete improvements needed to the Wellpinit, Ford, and Martha Boardman water systems.	Spokane Tribe, Indian Health Service		No	Indian Health Service
WFN-3	RECOMMENDATION. Recommend formation of a Chamokane Basin Watershed Council to resolve water-related issues in the Chamokane Basin. This Watershed Council may consist of, but not be limited to, residents of the Chamokane Basin and the Spokane Tribe.	Stevens County Conservation District	Chamokane area residents, Spokane Tribe	Yes	Ecology grants – CCWF, 319, Watershed Implementation funds
WFN-4	RECOMMENDATION. Local governments, the Spokane Tribe, and water purveyors should assess subarea water supply needs, identify appropriate measures from a range of options, and facilitate options that are economically viable and provide long-term sustainability.	WRIA 54 counties and water purveyors, Spokane Tribe	Ecology, DOH	Yes	Ecology Implementation Funds

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WFN-5	<p>RECOMMENDATION. Establish a program to collect data and evaluate where permit-exempt wells are a concern. Develop management options for problem areas. Affected local governments and Ecology should provide technical support and funding; counties, purveyors, Ecology and Regional Health District should coordinate. Program components could include:</p> <ul style="list-style-type: none"> <li>• Conduct buildout analysis for subbasins and study areas according to current zoning and projected water needs.</li> <li>• Develop water supply and demand forecasts for subbasins and study areas, including extending water service into these areas from existing water purveyors.</li> <li>• Consider protecting areas of strained water resources through critical areas ordinance or water supply overlay zones if alternate water supply is not feasible.</li> </ul>	Spokane County, Stevens County, Lincoln County	Spokane City Ecology, WRIA 54 water purveyors, regional health district	Possibly	Phase 4 and supplemental funds
WFN-6	<p>RECOMMENDATION. WRIA 54 Planning Unit, Ecology, Counties, and Stevens, Spokane and Lincoln County Water Conservancy Boards should explore water rights trusts, banking, water leasing and acquisition as potential solutions to limited availability of new water rights in WRIA 54.</p>	Stevens County	Spokane and Lincoln Counties, Water Conservancy Boards, Ecology	Yes	Phase 4 funds, supplemental funding
WFN-7	<p>RECOMMENDATION. The state Legislature should amend current law to allow water banking throughout the state.</p>	State legislature	Ecology, Planning Unit	Possibly	State funds
WS-1	<p>RECOMMENDATION. Evaluate aquifer storage and recovery (ASR) and enhanced recharge for the West Plains, considering reclaimed water as a priority source but not excluding other water sources.</p>	Airway Heights, Spokane County, West Plains Water Purveyors	Ecology, DOH, Spokane City	Yes	Supplemental funding, Columbia River Program
WS-2	<p>RECOMMENDATION. Promote the connectivity of the West Plains area so that water can be efficiently distributed where it is needed. Increased connectivity could consist of building more infrastructure for intermittent buying and selling of water or for permanent water rights transfers.</p>	WRIA 54 water purveyors	DOH, Spokane City	Yes	Supplemental funding, other community development programs
WS-3	<p>RECOMMENDATION. Promote and support water storage projects initiated by individual entities throughout the watershed to meet instream flows and to provide water for residents, business and projected growth in Spokane, Lincoln and Stevens Counties and the Spokane Indian Reservation. Several projects have been identified in the Chamokane Creek watershed.</p>	Spokane Tribe, WRIA 54 counties, individual project proponents, Ecology	Planning Unit	Possibly	Supplemental funding, Columbia River Program

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LU-2	RECOMMENDATION. Water system plans and other local land use plans should be consistent.	Spokane Tribe, WRIA 54 counties and water purveyors, Ecology	Spokane City, WDOH	Yes	Ongoing funding for entities performing review
LU-3	RECOMMENDATION. Entities involved in long-range land use planning in WRIA 54 should evaluate the “carrying capacity” of land related to available or proposed water supply to support responsible development consistent with comprehensive planning. If water is not available, there needs to be a plan to provide water to the area. Funding assistance will be necessary to implement this recommendation.	Spokane Tribe, WRIA 54 counties and water purveyors	DOH, Ecology	Yes	Supplemental grant funds, in-kind contribution from Planning Unit members
LU-4	RECOMMENDATION. The state should provide technical support and funding to counties and cities to identify areas of strained water resources.	State Legislature, Ecology	Spokane City, Spokane County WDOH	Yes	State funds
LU-5	RECOMMENDATION. Counties and cities should identify and consider adding areas of strained water resources to comprehensive land use plans and development regulations (through for example, a critical areas ordinance or water supply overlay zones).	WRIA 54 counties	Ecology, Spokane City	Yes	Supplemental funding, Phase 4 funds
LU-6	RECOMMENDATION. Recommend that counties, purveyors and Ecology collaborate to develop flexible local guidelines for demonstration of water supply availability and sustainability. Methods may include but are not limited to hydrogeologic investigation and characterization reports.	Spokane County	Ecology	Yes	Phase 4 funds, supplemental funds
LU-7	RECOMMENDATION. Recommend that Ecology provide technical assistance and funding for ongoing support in the implementation of guidelines developed in Recommendation LU-6 to demonstrate sufficient water availability and sustainability for proposed and existing uses for comprehensive plan amendments and associated zoning changes.	Ecology	Spokane County	Yes	Phase 4 funds, supplemental funds
LU-8	RECOMMENDATION. Recommend that Spokane County require applicants to demonstrate sufficient water availability and sustainability for proposed and existing uses for comprehensive plan amendments and associated zoning changes.	Spokane County	Spokane City	Yes	Phase 4 funds, supplemental funds
LU-9	RECOMMENDATION. Pursue funding to conduct more regional water supply availability studies through WRIA 54 Watershed Plan implementation.	Planning Unit	Spokane City	Yes	Supplemental funding

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LU-10	RECOMMENDATION. Spokane County should identify barriers and plan for the implementation of the Comprehensive Plan goals and policies discussed above, which are aimed at securing adequate water quantity for the residents of Spokane County. This will require development of methodologies to accurately evaluate the “carrying capacity” of land related to water supply, and application of these methodologies to ensure responsible development consistent with the Comprehensive Plan. Spokane County and Ecology could collaborate to develop guidelines for demonstration of water supply availability and sustainability. Methods may include but are not limited to hydrogeologic investigation and characterization reports.	Spokane County	Ecology, Spokane City	Yes	Phase 4 funds, supplemental funds
LU-11	RECOMMENDATION. The Planning Unit recommends an evaluation of methodologies and the review process used to determine water availability for proposed development projects, in order to better determine that permitted projects have a viable water supply.	WRIA 54 Counties, Spokane Regional Health District, City of Spokane, Ecology	Spokane City	Yes and coordinated with County Coordinated Water System Planning	Ecology budget established by legislature and governor
LU-12	RECOMMENDATION. Recommend Spokane County add the following condition for the approval of a final plat: “Prior to filing the final plat, the applicant will demonstrate provision of adequate potable water supply by providing one of the following: <ul style="list-style-type: none"> <li>• A letter from a water purveyor stating they will serve the proposed subdivision. If a plat is not developed for a specified amount of time, this commitment may need to be reconfirmed.</li> <li>• A copy of a water right permit from the Department of Ecology with adequate quantity to serve the proposed subdivision;</li> <li>• A plan to supply the proposed subdivision within the groundwater exemption specified in RCW 90.54.050 that complies with the 1997 Attorney General Opinion, Washington State Supreme Court Decision Department of Ecology vs. Campbell and Gwinn, LLC and Washington State Department of Health guidelines for residential water use.”</li> </ul>	Spokane County	Spokane City, Planning Unit	Yes	Spokane County in-kind contribution
LU-13	RECOMMENDATION. Recommend that Spokane County add one or more of the following to the requirements for exemption from the subdivision ordinance: <ul style="list-style-type: none"> <li>• Demonstration of water supply;</li> <li>• Only 3 parcels can be created;</li> <li>• Parcels must be 40 acres or greater;</li> <li>• Public notice of proposed land division.</li> </ul>	Spokane County	Spokane City	Yes	Spokane County in-kind contribution

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LU-16	RECOMMENDATION. A study is recommended to evaluate the land use impacts of beavers on Lake Spokane and to consider relocation of beavers to the properties of willing landowners. This could potentially be coordinated with the Lands Council project to evaluate the role of beavers in providing water storage.	Planning Unit	WDFW	No	Funding from Lake Spokane Residents
ISF-3	RECOMMENDATION. The Planning Unit recommends a phased pursuit of instream flow rules for tributary subbasins. A phased approach is recommended, such that the effort could be discontinued if it is found that development of a rule does not provide water management benefits for the tributary basin.	Planning Unit, Ecology	WDFW, Spokane Tribe, Spokane City	No	Phase IV funds, supplemental funds
WQ-1	RECOMMENDATION. Implement the monitoring described in the Quality Assurance Project Plan (QAPP) for the Nine Mile Area Non-Point Source Monitoring Study (Tetra Tech, 2009) and proceed with a study to monitor and assess non-point sources from the surface water and groundwater that drain directly to Lake Spokane.	Spokane County, Spokane County CD, Stevens County CD, Spokane Tribe	Ecology, Spokane City	No	Supplemental grants, Centennial Clean Water Fund, other WQ grants?
WQ-3	OBLIGATION. Ecology will keep the Planning Unit informed about progress on all TMDLs (Water Quality Improvement Plans) in WRIA 54, either through verbal updates at Planning Unit meetings or email updates to those on the email distribution list.	Ecology	Planning Unit	No	State funds
WQ-4	RECOMMENDATION. Implement the monitoring program described in the Quality Assurance Project Plan for the Paleochannel Water Quality Monitoring Study (Tetra Tech and GeoEngineers, in press).	Spokane County, Spokane County CD	Ecology, Spokane City	Yes	Supplemental funding
WQ-7	RECOMMENDATION. The Planning Unit recommends that local governments retain qualified wetlands scientists to review wetland delineations and administer the wetlands portion of critical areas ordinances.	Spokane Tribe, WRIA 54 Counties and Cities	Spokane City, Ecology	Yes	Utility or permit fees
TI-1	RECOMMENDATION. <b>Basalt Aquifer Groundwater Study</b> —The Columbia River Basalt Group (CRBG) aquifers that underlie the West Plains area are used for water supply. Groundwater levels have declined in some areas, indicating the groundwater resource is potentially strained. These aquifers (there are at least three distinct aquifers within this) are not well understood. Elsewhere in the Pacific Northwest, basalt aquifers are used extensively for water supply, indicating that a better understanding of the CRBG aquifers in the West Plains area would be beneficial to understand how this resource can be used in a sustainable way.	Spokane County, Planning Unit	Ecology, Spokane City, EWU	Yes	Phase 4 or supplemental funding, USGS, Columbia River program

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TI-2	<p><b>RECOMMENDATION. Identification of Areas of Strained Water Resources</b>—Identifying potential and existing areas of strained water resources, where water supply is not currently available to meet growing water demand for out-of-stream water needs, is a major data need for WRIA 54. Stevens, Lincoln and Spokane Counties all have begun developing more proactive methodologies to address the challenges associated with these areas. The Planning Unit supports development of methodologies to accurately identify areas of strained water resources, and development of tools to manage land use needs associated with these areas. Elements of this work may include the following:</p> <ul style="list-style-type: none"> <li>• Conduct buildout analysis for subbasins and study areas according to current zoning and projected water needs. Note that Ecology guidance suggests using 20-year projections from the state Office of Financial Management (OFM) for setting instream flows and allocating water for future out-of-stream uses.</li> <li>• Develop water supply and demand forecasts for subbasins and study areas.</li> <li>• Compile well information, including number, location, construction specifications, and use.</li> <li>• Develop estimates for actual water use</li> <li>• Hydrogeologic study to understand the available water resources</li> <li>• Compile complaint database information</li> <li>• Work with area residents to understand their needs so practical solutions can be found.</li> </ul>	Spokane County	Ecology, Stevens County, Spokane City		Watershed Implementation Grants
TI-3	<p><b>RECOMMENDATION.</b> Develop Water Supply and Demand Forecast for Prioritized Areas</p> <ul style="list-style-type: none"> <li>• Utilize growth projections, zoning, building/permit activity</li> <li>• Relate to parcel data, water service areas</li> <li>• Identify existing water sources and capacity</li> <li>• Determine unit water needs and conservation/infrastructure assumptions</li> </ul>	Spokane County, Stevens County, Lincoln County		Possibly	Phase 4 or supplemental implementation funds
TI-4	<p><b>RECOMMENDATION.</b> Stream flow monitoring for WRIA 54 tributaries. Establish stream flow monitoring program for WRIA 54 tributaries. Monitoring locations would be determined based on available funding, labor and equipment resources, and the priorities as determined by the Planning Unit at the time of initiating the monitoring program.</p>	Spokane County, Spokane Tribe, Planning Unit	Ecology, WDFW	Possibly	Ecology grants, partnerships with stakeholder agencies and local colleges
TI-5	<p><b>RECOMMENDATION.</b> Evaluate feasibility of establishing a stream flow gauge below Nine Mile Dam. Such a gauge was identified as a need by the Spokane River Instream Flow Work Group so that Spokane River flow, including discharge from the SVRP Aquifer downstream from the ‘at Spokane’ gauge, could be measured directly rather than estimated.</p>	Planning Unit	Spokane City, Spokane County Ecology	Potentially	Phase 4 or Supplemental implementation funds

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TI-6	RECOMMENDATION. Recommend local governments and conservation districts seek to increase funding for water and natural resources staff, in part to carry forth Plan implementation beyond Phase 4 grant funding. Additional staff and/or funding support is needed to implement water resources management projects and programs, and to conduct and supervise technical studies needed for water management.	All participating governments		Possibly	Utility fees and grant programs
TI-7	RECOMMENDATION. Recommend that the Legislature support Ecology's ambient groundwater monitoring program and recommend that Ecology consider the West Plains for an ambient groundwater monitoring program.	State Legislature	Ecology	Yes	State funds
EDU-2	RECOMMENDATION. Conduct a water resources education needs assessment in WRIA 54.	Planning Unit		Possibly	Watershed Implementation grants
EDU-4	RECOMMENDATION. The legislature should provide additional funding for education and outreach staff, such as conservation districts, for efforts in WRIA 54.	State Legislature		Possibly	State funds
IMP-1	OBLIGATION. Develop a framework for the future structure of the WRIA 54 Planning Unit to guide Watershed Plan implementation and water resources management during and beyond Phase 4.	Planning Unit	Ecology	Possibly	Implementation funds
IMP-2	OBLIGATION. Amend the current Memorandum of Agreement (MOA) that guides the Planning Unit's activities in Phase 3 to include Phase 4.	Planning Unit	Ecology	Possibly	Implementation funds
IMP-3	OBLIGATION. The Planning Unit agreed that memoranda of understanding or memoranda of agreement between the implementing entities and Ecology should be developed in the first year of Phase 4 to guide management of WRIA 54 water resources beyond Phase 4. Because Ecology does not represent other state agencies in Phase 4 as it does in Phase 3, the Planning Unit may also need agreements with other state agencies. The Planning Unit acknowledged that the agreements should have a broad scope and provide over-arching guidance to address water resources issues across jurisdictional boundaries.	Planning Unit	Ecology	Possibly	Implementation funds
IMP-4	RECOMMENDATION. Update the Watershed Plan and Detailed Implementation Plan in year four of Implementation (2012-2013) and then every five years following this first update.	Planning Unit	Ecology	Possibly	Implementation funds

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## REFERENCES

- Deobald, W.B., and J.P. Buchanan. 1995. Hydrogeology of the West Plains area of Spokane, County, Washington: Department of Geology, Eastern Washington University, Cheney, WA.
- Donaldson, N.C., and L.D. Giese. 1968. Soil Survey of Spokane County, Washington: U.S. Department of Agriculture, Soil Conservation Service, in cooperation with the Washington Agricultural Experiment Station. 143 p.
- Drost, B.W., and H.R. Seitz. 1978. Spokane Valley-Rathdrum Prairie aquifer, Washington and Idaho: U.S. Geological Survey Open-File Report 77-289. 79 p.
- EES Consulting, 2007. Final Technical Report Spokane River Instream Flow Studies. Prepared for the WRIA 57 Planning Unit under contract to Tetra Tech and Spokane County.
- Kahle, S.C., Caldwell, R.R. and J.R. Bartolino. 2005. Compilation of Geologic, Hydrologic, and Ground-Water Flow Modeling Information for the Spokane Valley—Rathdrum Prairie Aquifer, Spokane County, Washington, and Bonner and Kootenai Counties, Idaho: U.S. Geological Survey, Scientific Investigations Report 2005–5227; 64 p.
- NOAA. 2006. <http://www.wrh.noaa.gov/otx/spokane.php>. National Oceanic and Atmospheric Administration web page. Accessed April 3, 2006.
- Robinson, J.D. 1991. Stratigraphy and Sedimentology of the Latah Formation, Spokane County, Washington: Department of Geology, Eastern Washington University, Cheney, WA.
- SCAS. 2006. <http://www.ocs.oregonstate.edu/prism/faq.phtml#anchor536367>. Web page accessed April 4, 2006
- Stevens County Conservation District. 2000. Chamokane Creek Watershed Management Plan. 116 p.
- Tetra Tech, 2009. Quality Assurance Project Plan for Nine Mile Area Non-Point Source Monitoring Study: Water Quality Monitoring Study. Prepared for WRIA 54 Planning Unit under Ecology Grant #G0800004.
- Tetra Tech and GeoEngineers, 2009. Quality Assurance Project Plan for Paleochannel Water Quality Monitoring Program. Prepared for WRIA 54 Planning Unit under Ecology Grant #G0800004.
- Tetra Tech and GeoEngineers, 2007. Water Resource Inventory Area 54 (Lower Spokane) Watershed Plan Multi-Purpose Water Storage Assessment. Prepared for the WRIA 54 Planning Unit under contract to Spokane County.
- Tetra Tech, GeoEngineers, and Triangle Associates, 2007. Water Resource Inventory Area 54 (Lower Spokane) Watershed Plan Phase 2, Level 1 Data Compilation and Technical Assessment. Prepared for WRIA 54 Planning Unit under contract to Spokane County.
- Washington Department of Ecology, 2007. Draft Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load Water Quality Improvement Report (September 2007).

Washington Department of Ecology, 2007. Presentation on Water Rights GMAP by Ken Slattery, December 2007.

Washington Department of Ecology, 2006. Draft Spokane River PCBs Total Maximum Daily Load Water Quality Improvement Report, June 2006.

Washington Department of Ecology, 2003. Final Environmental Impact Statement for Watershed Planning under Chapter 90.82 RCW. Shorelands and Environmental Assistance Program. Ecology Publication #03-06-013.

Whiteman, K.J., J.J. Vaccaro, J.B. Gonthier, and H.H. Bauer. The Hydrogeologic Framework and Geochemistry of the Columbia Plateau Aquifer System, Washington, Oregon, and Idaho: U.S. Geological Survey Professional Paper 1413-B, U.S. Department of the Interior, Reston, VA; 1994.

WRIA 54 Planning Unit  
**WRIA 54 (Lower Spokane) Watershed Plan**

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**APPENDIX A.**  
**INSTREAM FLOW MEMO**

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August 2009



## Memorandum

**To:** WRIA 54 and 55/57 Planning Units  
**From:** WRIA 54/57 Spokane River Instream Flow Work Group  
**Date:** June 9, 2008  
**Re:** Instream Flow Recommendations Memorandum for WRIA Planning Units 54 & 55/57

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*At a glance:*

- The formation and work of the Instream Flow Work Group is implementation of a WRIA 55/57 Watershed Plan recommendation (I.E.01).
- The Instream Flow Work Group was charged with providing minimum instream flow recommendations and proposals to the WRIA 54 and WRIA 55/57 Watershed Planning Units.
- A minimum instream flow is a state water right established to meet the minimum flows necessary to sustain fish and wildlife as well as to maintain the navigational values, recreation and aesthetic values and water quality of the given water body. A minimum flow established by rule has a priority date, and does not affect use, validity, extent, or priority of senior water rights. However, a change or transfer of a water right can only be approved if there is a finding that existing rights, including the instream flow established in rule, will not be impaired. (See RCW 90.03.380 (1) and RCW 90.44).
- Instream flows are a framework for water resource management and future water rights decision-making.
- The Spokane River Instream Flow Work Group provided recommendations on control points and instream flows in the Spokane River.
- The WRIA 55/57 and WRIA 54 Watershed Planning Units now need to take the information developed by the Work Group to make minimum instream flows recommendations to the Department of Ecology (Ecology)

*Summary of Recommendations:*

- **Control points** – The Work Group agrees to specific control points for management of surface and ground water. See pages 4-5 and Table 1.
- **Instream flows** – The Work Group did not reach consensus on one minimum instream flow at Spokane Gage, but instead provides several options and accompanying rationales. See pages 5-8 and Table 2a and 2b. The Work Group did not reevaluate the data supporting the 500 cfs summer flow at Barker Road established in the adopted WRIA 55/57 Watershed Plan, but chooses not to recommend changing it (See page 6).
- **Exempt wells** – The Work Group determined that exempt wells are not a significant issue for the geographic area over the Spokane Valley Rathdrum Prairie (SVRP) Aquifer and recommended not addressing them in the water management rule. The Work Group, however, recommends that each WRIA consider whether or not the water management rule should address exempt wells that are located off the SVRP Aquifer (especially in WRIA 54).
- **Mitigation** – The Work Group agrees that mitigation measures should be considered by Ecology when it evaluates future water rights



- applications.
- **WRIA 54 Tributaries.** A number of tributaries exist in WRIA 54. These were not addressed by the WRIA 55/57 & 54 Work Group, and it is recommended that this topic be addressed by the WRIA 54 Planning Unit.
  - **Elected officials meeting** – The Work Group recommended that an elected officials meeting should occur within the next 3 months.
  - **Evaluation of future human water needs** – The Work Group agreed that the county should conduct an initial evaluation that better quantifies future human water needs that potentially impact Spokane River flow.
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## Introduction

This Technical Memorandum summarizes the efforts made by the Watershed Resource Inventory Area (WRIA) 54/57 Instream Flow Work Group from July 2007 to May 2008. It is meant to provide the WRIA 54 and WRIA 55/57 Watershed Planning Units the information necessary to make recommendations on instream flows in their respective watersheds. This Technical Memorandum provides background information, control point recommendations, four minimum instream flow proposals made by Work Group participants, information on additional components of instream flows to consider, and next steps.

## Background

The Watershed Planning Act of 1998 (RCW 90.82) encourages local entities in WRIsAs in the State of Washington to develop local watershed plans by assessing and determining how to best manage water resources. To develop watershed plans for the Middle Spokane River and Little Spokane River, WRIsAs 55 and 57 formed a joint Planning Unit and the Lower Spokane River WRIA 54 formed its own Planning Unit. As part of the watershed planning process, Planning Units are given the opportunity to provide the Department of Ecology (Ecology) with a recommendation for an instream flow rule for waters within their WRIA. Further, RCW 90.82 stipulates that Ecology must attempt to achieve consensus within the Planning Unit on minimum flows before being adopted by Ecology. Because the WRIA 55/57 and WRIA 54 Planning Units chose to collaborate, they formed a joint Work Group to consider instream flows for the geographic area comprising WRIsAs 54 and 57 (WRIA 55 – Little Spokane River – was not included since it currently has an instream flow rule, which was adopted in 1976).

Instream flow rules are often referred to as water management rules since they encompass more than a minimum flow at a location for a particular period of time. This memorandum refers to recommendations for inclusion in a water management rule. Some of the components of water management rules include management of exempt wells beyond what is currently stipulated in state law; specific amounts of water not impacted by the instream flow rule, often called reserve water; closures to future appropriations for surface and groundwater; and enforcement, management and permitting actions/priorities.

According to the Department of Ecology Water Resources Program, “[t]he term ‘instream flow’ is used to identify a specific stream flow (typically measured in cubic feet per second, or cfs) at a specific location [a control point] for a defined time, and typically following seasonal variations.” A minimum instream flow is, in essence, a state water right established to ensure that junior water rights do not prevent streams from meeting minimum instream flows necessary to sustain fish and wildlife, to maintain the navigational values, recreation and aesthetic values and to preserve water quality of the given water body. It is important to note that the regulatory flow does not, by itself, ensure that values and uses are protected, or that the minimum instream flows will be met. The

“junior” status of a minimum instream flow means that senior water right holders still could withdraw water when river instream flows drop below the minimum established in the water management rule. An established instream flow gives Ecology the basis to make decisions on new appropriations that will impact the flow in the given water body. A new instream flow rule does not affect existing water rights, although certain changes in senior rights could be subject to the instream flow. Subsequent rights are junior and cannot impair the instream flow.

In August 2007, 27 members from the WRIA 55/57 and WRIA 54 Planning Units formed the WRIA 54/57 Spokane River Instream Flow Work Group (see attachment 1 for the roster of participants). Their goal was to evaluate existing information and studies and to work together to develop a consensus proposal that could be forwarded to each Planning Unit for consideration. Based on the Work Group proposal, the Planning Units would then make their recommendation to Ecology. From July 2007 until May 2008 the Work Group met eight times to discuss options, hear presentations and to share information about the options, alternatives, and proposals available to them. In the spring of 2008, Work Group members will report back to their respective Planning Units with a set of recommendations on how to proceed. This Technical Memorandum contains the results of the Work Group’s process.

### **Studies and Evaluations**

In its effort to develop instream flow recommendations for the Spokane River the following studies, model runs, and memos were reviewed, discussed, and cited frequently during the WRIA 54/57 Instream Flow Work Group’s eight meetings:

**Avista FERC relicensing studies.** These three documents are part of the Federal Energy Regulatory Commission (FERC) relicensing of the Spokane River Project, which includes four hydroelectric dams owned and operated by Avista Utilities:

- Aesthetics Study
- Instream Flow Study
- Recreation Study

**Instream Flow and Fish Habitat Assessment. Northwest Hydraulic Consultants and Hardin-Davis, Inc. June 2004.** This study was undertaken to provide information for the relicensing of the Spokane River Project and for the planning process on the middle Spokane River by WRIs 55/57. The relationship between instream flows and rainbow trout spawning, fry emergence, and summer rearing habitat were examined by employing a Physical Habitat Simulation (PHABSIM) model. This study focused on the mainstem Spokane River from the Post Falls Dam in Idaho, downstream to Evergreen Street, below the confluence with Latah Creek. For most of the study area, spawning and rearing life stages were evaluated. However, only spawning was assessed in the one-mile reach of WRIA 57 below the Monroe Street Bridge.

**Final Technical Report: Spokane River Instream Flow Studies, EES Consulting, May 2007.** EES Consulting conducted instream flow studies at the reach from the Spokane Gage to Seven Mile/Gun Club to characterize the weighted usable area for a collection of transects selected and weighted to represent much of the lower Spokane River. The study looked at habitat availability under various flow regimes for rainbow trout and mountain whitefish.

**Spokane Valley Rathdrum Prairie (SVRP) Aquifer Model Runs.** As part of a Planning Unit support grant from Ecology, Spokane County conducted a number of model scenarios to address numerous Work Group questions. These scenarios, included:

- Bi-state Aquifer Model: run of the use of 100% inchoate water right of Washington water purveyors

- Bi-state Aquifer Model: run on shifting major well locations across the aquifer
- Bi-state Aquifer Model: run on population growth in Idaho and Washington

**GIS Analysis of future exempt wells over the SVRP Aquifer.** Spokane County conducted a GIS analysis to estimate new permit-exempt well potential in the geographic area above the SVRP Aquifer. The analysis quantified the number of undeveloped lots that typically use an exempt well (5 acres and greater) that are outside a defined water service area according to the Spokane County Coordinated Water System Plan.

**Analysis of Instream Flow Results for WRIA 54 and 57 Studies.** Work Group member and consultant to Spokane County, Stan Miller, presented a memorandum at the October 23, 2007 Work Group meeting that provided analysis about water availability at Barker Road Gage, Spokane Gage, and at Monroe Street.

**Lower Spokane River minimum instream flow recommendations.** This joint-Ecology/Washington Department of Fish & Wildlife (WDFW) recommendation memorandum outlined analysis, as well as the state caucus approach to setting control points and instream flows. The Work Group used the analysis contained in this memorandum as a foundation for discussions about potential instream flows at Spokane Gage. The rationale and analysis is outlined in the following sections of this memorandum.

### **Control Points**

Control points are specific locations on a water body that have a designated minimum instream flow amount. In order to implement the rule it is necessary to have the ability to measure flow at that point, thus control points are usually established where there is an existing gauge or a location where one can be installed. Instream flows measured at specific control points can be used as proxies for nearby river reaches or tributaries. According to the joint Ecology/WDFW document titled, *A Guide to Setting Instream Flows in Washington State*, “[s]ince resources and management objectives may vary among sub basins, instream flow recommendations usually include multiple flow control points for a watershed. Additional control stations can provide data to focus and facilitate the development of water management solutions at the subbasin level.” Because of the dynamic nature of the Spokane River and its interaction with the SVRP Aquifer, choosing the appropriate control points that are both technically accurate and practical for use have been considered by the Work Group. The Spokane River Instream Flow Work Group proposes using control points to regulate both ground and surface water.

In December 2007, John Covert of Ecology presented background information about the pros and cons of using certain control points along the middle and lower reaches of the Spokane River. Potential control points included Barker Road Gage (already an established gage), Spokane Gage (already an established gage), Seven Mile/Gun Club (a stream flow gage at this site existed in the late 1940s and early 1950s, but was discontinued), Nine Mile Dam, and at the Little Falls Dam. The Work Group heard and discussed the advantages and disadvantages of using the various sites. Factors included:

- assessing the accuracy of measuring flows affected by hydropower operations
- practicality of using an established gage;
- technical considerations;
- avoiding the regulatory confusion of too many control points; and
- costs to establish, operate, and maintain a new gage.

The Work Group reached agreement on pursuing several options regarding surface and ground water control points located within the SVRP Aquifer area of WRIAs 54 and 57. For surface

water applications, the Work Group reached consensus to use the Barker Road Gage for regulating surface water from Sullivan Road Bridge to the Idaho state line, and it agrees to use the Spokane Gage for regulating surface water from Sullivan Road Bridge to the Seven Mile Bridge (This control point boundary has also been referred to as the upper end of the Nine Mile pool. For the purposes of regulation, the Seven Mile Bridge provides a more consistent boundary, whereas the Nine Mile pool fluctuates according to pool depth.).

For new groundwater applications within the SVRP Aquifer from Seven Mile Bridge to the Idaho state line, the Work Group recommends using the Spokane Gage as the control point. An issue to be considered by the State of Washington is how groundwater within Hillyard Trough area will be managed (The Department of Ecology agreed to evaluate this and make a recommendation). Finally the Work Group supports the installation of an informational stream flow gage at the former gaging site at Nine Mile, if and when funding is available and if some technical issues are resolved with providing consistent measurements at the gaging site

Please see the following table for a summary of the control point recommendations supported by the Work Group:

**Table 1. Control Point Recommendations made by the Spokane River Instream Flow Work Group.**

Recommendation	Control Point	Type	Geographic Area	Notes
# 1	Barker Road Gage	- Surface water	- Controls surface water from Sullivan Road Bridge to the Idaho state line	The Work Group reached consensus on using this gage as a control point
#2	Spokane Gage	- Surface water - Ground water	- Controls surface water between Seven Mile Bridge and Sullivan Road Bridge  - Controls groundwater within the SVRP Aquifer from Seven Mile Bridge to the Idaho state line (with certain stipulations within the Hillyard Trough area)	Using the SVRP Aquifer model and tools under development, Ecology will define the area where the rule will apply for groundwater and will report back on their findings for consideration (area of control in WRIA 54 & 57).
# 3	Nine Mile	N/A	N/A	The Work Group supports the installation of a gage at Nine Mile with certain stipulations.

**Instream Flows**

Establishing minimum instream flows are an important component to protecting instream watershed values, including the recreation, aesthetic, water quality, navigational values, and fish and wildlife habitat values of the Spokane River. Additionally, instream flows help provide certainty for future water management decisions within WRIs 54 and 57. Ecology will use the

minimum instream flows established for the Spokane River by rule as they evaluate subsequent water right applications.

The Work Group proposes setting instream flows at two locations, Barker Road Gage and Spokane Gage. The Work Group did not analyze the data supporting the 500 cfs summer flow at Barker Road established in the adopted WRIA 55/57 Watershed Plan, but chose not to change that recommendation at this time (see Table 2a). Because the Barker Road Gage measures a reach of river that reflects releases from the reservoir behind Post Falls Dam, the minimum instream flow is limited to controlling surface water withdrawals upstream from Sullivan Road to the Idaho state line.

For considering minimum instream flows at the Spokane Gage, the Work Group began the instream flow recommendation process by discussing the various reports and findings. Members then requested that Ecology and WDFW make a recommendation to the Work Group prior to entertaining potential options. Following the State Caucus’s presentation of its recommendation, Work Group members considered the State’s recommendation as well as studies and analysis, specific Work Group member recommendations, and Work Group discussions. While the Group worked hard, members were not able to reach a consensus recommendation on instream flow numbers to provide the two Planning Units. Five instream flow proposals were developed for the Spokane Gage along with supporting rationale for four of the five proposals.

The WRIA 55/57 Watershed Plan recommendation for Barker Road Gage follows in Table 2a and the proposals for Spokane Gage are summarized in Table 2b:

**Table 2a. Minimum Instream Flow Recommendation at Barker Road Gage**

Date	Recommendation
June 16 – September 30	500 cfs

**Table 2b. Minimum Instream Flow Proposals at Spokane Gage from the Work Group.**

Date	State of Washington Caucus (Ecology and WDFW)	Spokane County	City of Spokane Environmental Programs	Environmental and Recreation Communities	Vera Water District
Oct. 1 – Dec. 31	1100 cfs	-	780 cfs	-	-
Jan. 1 – March 31	1100 cfs	-	1100 cfs	-	-
April 1- May 15	3000 cfs (pending revision)	-	2700 cfs	-	-
May 16 - June 15	3000 cfs (pending revision)	-	2300 cfs	-	-
June 16 – Sept. 30	850 cfs	850 cfs	565 cfs	1350 cfs	600 cfs

Rationales for Proposals:

**State of Washington Caucus (Ecology and WDFW).** The minimum instream flow recommendation by the State Caucus focuses on identifying suitable conditions for fish, specifically rainbow trout and mountain whitefish. The recommendations rely heavily on considering the weighted usable area (a combination of the elements of habitat quantity and habitat quality) of river habitat for the two species over the course of the water year. Depending on the life histories of each species, minimum instream flows emphasize the needs of one species or other at different periods of the year. Minimum instream flow recommendations in the fall and winter emphasize the fall spawning and the winter incubation, and adult rearing needs of mountain whitefish, whereas the spring instream flow recommendation reflects the needs of spawning rainbow trout. For the summer period we gave emphasis to the rearing needs of juvenile and adult rainbow trout and adult whitefish. The conclusions of the State recommendations are based on a ‘no harm’ principal that is technically defensible. The data underlying this proposal were gathered by the WRIA 54 Planning Unit (EES Consulting, 2007). The state’s analysis of those data is summarized in their complete proposal, attachment 2a.

The State Caucus initially proposed a 3,000 cfs minimum instream flow during April 1-June 15 to protect rainbow trout spawning and incubation. However, during review of the Hardin-Davis, Inc. study (2004) during the drafting of the WA 401 certification of the Avista hydroelectric project (released April 7, 2008), WDFW and Ecology determined that it is essential to further evaluate spawning and incubation needs for rainbow trout.

The State of Washington Caucus provided subsequent technical perspectives and clarifications on instream flows and those are incorporated in the attached technical considerations 2b.

**Spokane County.** Spokane County based its analysis on the habitat studies conducted on the Spokane River by the WRIA 54 Planning Unit (EES Consulting, 2007). In the opinion of county staff, a minimum flow of 850 cfs adheres to the fundamental water resource management principles set by the legislature and declared in RCW 90.54. County staff determined that the large amount (approximately 250 cfs) of inchoate water available and not subject to an instream flow is sufficient to meet human needs for water well into the future, and further appropriation is not warranted. County staff acknowledges that the legislation that establishes the validity of Municipal inchoate water rights is currently facing its first legal challenge and there is a level of uncertainty associated with the validity of inchoate water rights. If in fact inchoate rights are determined invalid, county staff feels it will be essential to recommend a water management rule that recognizes instream needs and the needs of a growing community.

**City of Spokane Environmental Programs.** This proposal according to the City of Spokane Environmental Programs memorandum presented to the Work Group at the January 29, 2008 meeting, “attempts to maintain flexibility in meeting water demand for people while protecting instream flow needs for fish.” The proposed minimum instream flows also reflect the City’s concerns about the uncertainty of water availability in an environmental and legal sense: climate change, legal challenges to existing water law, future growth in Spokane and Idaho, and potential future challenges to water rights (i.e., adjudication). Setting the minimum instream flow close to the Spokane River’s current summer flows would make the prospects for acquiring new water rights greater in the event that the city lost its inchoate rights. The City notes that if minimum instream flows are set too high there will be fewer incentives for water purveyors to pursue a mitigation approach that would result in the issuance of new water rights. Finally, this flow proposal shows the City of Spokane Environmental Programs’ concern for aquatic habitat and human uses, but it rejects the argument that the City of Spokane and other purveyors are solely

responsible for the reduction of instream flows in the summer. For a more complete explanation of this proposal, please see attachment 3a and 3b (the latter document, dated May 5, provides revisions to the original instream flow proposal).

**Environmental and Recreation Communities.** The proposed instream flow is based on navigability needs as identified in the Avista Recreation Flow report. The Environmental and Recreation Communities' proposal is based on the concept of exceedance flows – that is, setting instream flows at a level that protects variability in the river hydrograph to mimic natural conditions (e.g., 90% exceedance levels). The river may not flow at 1350 cfs during summer months every year, but in those years when flows do reach that level, they will be protected from future water right allocations.

The 850 cfs summer low flow recommended by the State Caucus is protective of native fish and should be viewed as a hard target, with the goal of restoring flows to that level (in addition to stopping declining instream flows in the Spokane River). The environmental and recreation communities also believe that setting an instream flow at the 1350 cfs level for the summer/early fall will help the State of Washington negotiate water resource issues with the State of Idaho.

With respect to flows during other times of the year, the Environmental and Recreation proposal does not yet recommend specific flows for times other than the summer flow period, but may make recommendations in the future. A recommendation regarding spawning season will be forthcoming following review and possible revisions of the State Caucus recommendations.

### **Additional Points to Consider**

The Work Group discussed additional factors to consider in recommending a water management rule. While no specific recommendations on these topics were reached through consensus, it is worthwhile to mention four of the issues that led to a significant amount of discussion at the Work Group meetings:

**Legal Availability of Water.** The Work Group had extensive discussion about this topic, and the following points were agreed upon:

- While there are significant municipal inchoate rights in the basin, there is a wide disparity in distribution of municipal inchoate water rights
- Water rights are not always where water demand is
- Water purveyors expressed hesitancy in requesting Ecology to assist with water right transfers
- New water rights are not being issued. Ecology cannot issue any new water rights that are not interruptible or fully mitigated
- There is concern about the observed decline in 7-day low flows in Spokane River
- Growth in use of municipal inchoate water rights will result in lowered Spokane River flows, as estimated by two groundwater/surface water models

**Exempt wells.** When water rights are not available often the only way to obtain water is through a permit-exempt well. In many areas of the state exempt well use has proliferated. In fact between 2000 and 2007 Spokane County has had the most new exempt wells installed of any county in the state. In an effort to protect stream flows, many water management rules specifically address permit exempt wells and restrict them in some manner beyond what is currently done. The question the Work Group considered was what is the relevance of permit exempt wells over the SVRP Aquifer to a Spokane River instream flow rule? After a GIS analysis was conducted by Spokane County the Work Group determined that exempt well provisions located over the SVRP

Aquifer in the Spokane River water management rule are not needed because virtually the entire aquifer boundary is within an established water district.

**Water quality.** The Work Group discussed concerns about water quality issues and setting instream flows at such a low point that lack of flow would negatively impact water quality. It was mentioned that dissolved oxygen modeling done for the proposed Spokane County Water Reclamation Facility was conducted at a flow of 623 cfs which is below the State instream flow recommendation but above the Spokane City Environmental Programs recommendation (HDR Engineering, 2002,) Dissolved oxygen modeling done for the Dissolved Oxygen Total Maximum Daily Load (TMDL) Water Quality Improvement Plan were conducted at a flow of about 500 cfs, which is below the City's recommendations.

**Temperature concerns.** Increased release of water from Post Falls dam would provide for fish habitat in the river down to Flora Road, or where the river is a "losing reach". Beyond the losing reach of the river, the cold water inflow from the aquifer reduces the water temperature, moderating the effects of the warmer discharge release. However, the relationship between releases of water from Post Falls dam, temperature, and effects on fish will be studied and flow releases adjusted, through adaptive management requirements in the FERC relicense/401 certifications (Avista's ID 401 certification, April 2008 draft; FERC License 2545 and 12606, FEIS, July 2008).

**Water reserves.** The Work Group discussed, but did not make a recommendation regarding water reserves. Typically, a reserve for municipal water supply is not included in an instream flow rule in a basin or sub basin where municipal inchoate water rights are adequate to meet future demand. When considering water reserves in other WRIs Ecology has employed a 1-2% habitat loss standard. The amount is calculated using a flow that corresponds to a 1-2% loss of habitat during the low flow month of August during a low flow year (one-in-ten year low flow). The percentage of habitat loss would be determined by evaluating the WUA curves in the instream flow studies. This amount of a reserve flow is relatively small for human needs, especially when compared to inchoate rights on the order of approximately 250 cfs. The Work Group has questions about whether this formula applies to a larger river like the Spokane River. Ecology has indicated that the specifics of each water body and the watershed itself are considered when Ecology makes its decision, and the factors mentioned above are guidance.

**Mitigation/Restoration/Water Banking.** Various members of the Work Group discussed the importance of conservation and restoration measures in order to improve instream flows in the Spokane River and its tributaries. The Work Group agrees that mitigation measures should be considered by Ecology when it evaluates water right applications. Additionally the Work Group noted that water banking opportunities should be encouraged.

**WRIA 54 Tributaries.** A number of tributaries exist in WRIA 54. These were not addressed by the WRIA 55/57 & 54 Work Group, and it is recommended that this topic be addressed by the WRIA 54 Planning Unit.

## **Next Steps**

**Elected Officials Meeting.** The Work Group decided it would be important to hold an elected officials meeting on June 26. Members expressed an interest to present elected officials with the specifics and issues surrounding setting instream flows information. Such a meeting would allow all elected officials to be presented information in one setting so that what they hear is consistent. A policy discussion would also occur that could lead to policy directions for the two Planning Units.



**Future Human Water Use Estimate.** The Work Group agreed that Spokane County should develop information on what the estimated future human water needs are in the basin so that instream flows can be balanced against future demands.

## References & Resources

- EES Consulting, *Final Technical Report: Spokane River Instream Flow Studies*, Spokane County Public Works Department and WRIA 54 & 57 Watershed Planning Units, May 2007.
- HDR Engineering, Inc., *2002 Spokane County Wastewater Facilities Plan (Final)*, Spokane County Public Utilities. Spokane, WA. December 2002.  
(<http://www.spokanecounty.org/utilities/RptDoc/fwwfp/FFP%2000aCover.pdf>, accessed June 9, 2008).
- Northwest Hydraulic Consultants and Hardin-Davis, Inc. 2004. *Instream Flow and Fish Habitat Assessment*, FERC Project No. 2545, Avista Corporation. Prepared for the Avista Corporation and WRIA 55/57 Watershed Planning Units.
- Revised Code of Washington RCW 90.03.380 (1), Right to water attaches to land — Transfer or change in point of diversion — Transfer of rights from one district to another — Priority of water rights applications — Exemption for small irrigation impoundments.  
(<http://apps.leg.wa.gov/RCW/default.aspx?cite=90.44>, accessed June 9, 2008).
- Revised Code of Washington RCW 90.44, Regulation of public groundwaters  
(<http://apps.leg.wa.gov/RCW/default.aspx?cite=90.03.380>, accessed June 9, 2008).
- Revised Code of Washington RCW 90.54, Water Resources Act of 1971  
(<http://apps.leg.wa.gov/rcw/default.aspx?Cite=90.54>, accessed June 9, 2008).
- Revised Code of Washington RCW 90.82, Watershed Planning  
(<http://apps.leg.wa.gov/rcw/default.aspx?cite=90.82>, accessed June 9, 2008).
- Spokane County. Spokane River Instream Flow Work Group: WRIA 55/57 & WRIA 54 Watershed Planning Units (<http://www.spokanecounty.org/wqmp/ISFWG/asp/Home.asp>, accessed March 23, 2008).
- Washington State Department of Ecology, *A Guide to Instream Flow Setting in Washington State*. Lynne D. Geller ed., Water Resources Program, Washington Department of Ecology; Habitat Program, Washington Department of Fish & Wildlife, March 2003.
- Washington State Department of Ecology, *Instream Flows in Washington*. Water Resources Division Information Page. (<http://www.ecy.wa.gov/programs/wr/instream-flows/isfhtm.html>, accessed March 23, 2008).

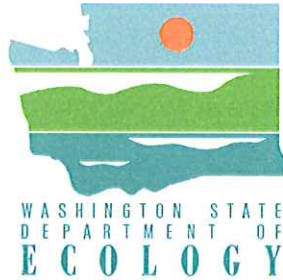
## Attachments

Please see the following attachments that were referenced in *Instream Flow Recommendations Memorandum for WRIA Planning Units 54 & 55/57*:

- **Attachment 1:** WRIA 54/57 Spokane River Instream Flow Work Group Roster
- **Attachment 2a:** Lower Spokane River minimum instream flow recommendations. (Joint Ecology/WDFW memorandum)
- **Attachment 2b:** Technical Comments from the State Caucus
- **Attachment 3a:** January 29, 2008 Instream Flow Proposal from the City of Spokane Environmental Programs
- **Attachment 3b:** May 5, 2008, Instream Flow Proposal from the City of Spokane Environmental Programs

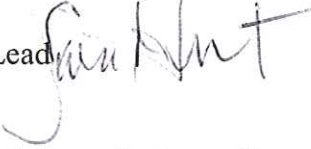
## **Attachment 1: WRIA 54/57 Spokane River Instream Flow Work Group Roster**

1. Albert Tripp – *City of Airway Heights*
2. Bart Haggin – *Lands Council*
3. Bea Lackaff – *Citizen/Landowner*
4. Brian Crossley – *Spokane Tribe*
5. Brian Walker – *Lands Council*
6. Charlie Peterson – *Spokane County Conservation District*
7. Craig Volosing – *Palisades Neighborhood/Landowner*
8. David Luders – *Fairchild Air Force Base, Indian Village Estates Water Association*
9. Guy Gregory – *Department of Ecology*
10. Hank Nelson – *Avista Utilities*
11. Harry Mclean – *City of Spokane*
12. Jeanne Barnes – *Lake Spokane Park Homeowners Association*
13. John Covert – *Department of Ecology*
14. John Patrouch – *Northwest Whitewater Association, Spokane Canoe and Kayak Club*
15. Kristine Graf – *City of Spokane*
16. Lloyd Brewer – *City of Spokane*
17. Mark Wachtel – *Washington Department of Fish and Wildlife*
18. Mike Hermanson – *Spokane County*
19. Rachael Paschal Osborn – *Sierra Club & Center for Environmental Law and Policy*
20. Reanette Boese – *Spokane County*
21. Rob Lindsay – *Spokane County*
22. Sara Hunt – *Department of Ecology*
23. Stan Miller – *Consultant to Spokane County*
24. Steve Skipworth – *Vera Water District*
25. Tim Vore – *Avista Corporation*
26. Ty Wick – *Aquifer Joint Board*
27. Wes McCart – *Stevens County Farm Bureau, Stevens County Water Conservancy Board*



January 14, 2008

TO: Rob Lindsay, Spokane River Watershed Planning Units 54 and 55/57  
Spokane County Public Works Department, Water Resources

FROM: Sara Hunt, Watershed Lead, Department of Ecology 

SUBJECT: Lower Spokane River minimum instream flow recommendations

**Summary**

As explained below, our recommended minimum instream flows as measured at the Spokane 'at Spokane gage' are:

January 1 – April 1	1,100 cfs
April 1 – June 15	3,000 cfs
June 16 – September 30	850 cfs
October 1 – December 31	1,100 cfs

**Introduction**

The State Caucus, composed of the Washington Departments of Ecology (Ecology) and Fish and Wildlife (WDFW), present these recommendations for minimum instream flows for the Lower Spokane River and for a Control Point to implement those flows. These recommendations are based on the Final Technical Report: Spokane River Instream Flow Studies prepared for Spokane County Public Works Department and WRIA 54 & 57 Watershed Planning Units; EES Consulting; May 2007. We believe these recommendations represent technically appropriate, defensible minimum instream flow values that protect and preserve instream resources as required under Chapters 90.22, 09.54, and 90.82 RCW. We look forward to meeting with the planning units and the Instream Flow Work Group to answer any questions you may have.

**Control Point**

The Control Point recommended by the state caucus to be used to implement these minimum flows is the existing USGS streamflow gaging station known as the Spokane River 'at Spokane' gage (ID# 12422500). This gage site was chosen for practical as well as technical considerations:

- This gage is the oldest operating site in the state of Washington, measuring flows continuously since 1891.
- It is telemetered, allowing real-time access to flow information from the Internet.
- It has a funding mechanism in place (Avista and the City of Spokane).

The alternative site, the 'Gun Club' site, is the location of a gaging station operated by the USGS for a brief period in the late 1940s and early 1950s. To re-establish this site as a Control Point requires securing a funding mechanism (in perpetuity) to pay for operating the gage, telemetry equipment, establishment of a new rating curve, and compilation of the data.

The recommended instream flow value for the "summer low flow" period (June 16 – September 30) is based on data collected at both the 'at Spokane' and 'Gun Club' sites. The flow/habitat numbers are weighted to account for increases in flow that occur between the upstream and downstream locations. As such, the recommended minimum flow represents habitat values at both locations.

In the 'at Spokane' section of the River, rainbow trout spawning habitat is much more sensitive to flow fluctuation in the critical spring time period than is habitat at the 'Gun Club' location because of the presence of lateral gravel bars in the river channel. This sensitivity leads the 'at Spokane' site to be chosen as the Control Point.

Establishing a single Control Point for this section of the River eliminates the regulatory confusion that would result from two independent instream flows established at two sites located within 10 river miles of each other.

### **Minimum Instream Flow Recommendations**

Field work characterizing the weighted usable area (WUA) for various transects in the Spokane River between downtown Spokane and the Gun Club (River Miles 73.8 to 63.8) was conducted by EES Consulting under contract with the WRIA 54 and 57 Watershed Planning Units. Fisheries biologists for the Washington Department of Fish and Wildlife and the Washington Department of Ecology have analyzed the data and derived instream flow recommendations.

#### *Combined weighted useable area curve*

We reviewed the lower Spokane River instream flow study results and compiled WUA results as depicted in the combined percentages graphic (Figure 1). The combined WUA curve was derived giving 80% weight to the Gun Club site and 20% weight to the site near the Spokane gage; giving equal weighting of rainbow trout juvenile/adult with whitefish adult; and allowing for 200 cubic feet per second (cfs) more at Gun Club than at Spokane gage.

Weighting values were derived from the dataset. When EES Consultants evaluated habitat at different transects to see if they were adequately covering the reach of interest, they placed markers at regular intervals along the river from the falls to the Nine-Mile Reservoir backwater (full pool). As these were placed at regular intervals, the number of

markers was proportional to the length of the reach. Eighty percent were in the WRIA 54 reach and 20% were in the WRIA 57 reach. As each site represented its respective reach, with transect weighting to ensure representation, weighting the two sites 80-20% should reflect the general character of the lower Spokane River. The weighting is consistent with guidance provided by WDFW's Fish Program staff in Spokane.

As noted above, flows listed in this memo relate back to measurements from the 'at Spokane' gage. Linear interpolation is used where necessary to calculate WUA at Spokane when Gun Club equivalent flow was not listed in the EES report table.

#### *Summer minimum instream flows*

The weighted combination of rainbow and whitefish peaks at 1,100 cfs. This is 81% of rainbow WUA (peak at 400 cfs) and 95% of whitefish WUA (peak at 1,500 cfs). See Figure 1. To achieve similar WUA levels for both species (about 88% of peak WUA), a flow of 850 cfs should be protected. Thus, we recommend 850 cfs as the summer (June 16-September 30) instream flow measured at the Spokane gage.

#### *Fall and winter minimum instream flows*

In fall and winter (October 1-March 31), we emphasized whitefish in the balance of the two species. A flow of 1,100 cfs would have to be protected which is consistent with WDFW Fish Program guidance. Rainbow trout juvenile and adult WUA were used in conjunction with whitefish for fall and winter, rather than winter rainbow trout only, because while rainbow juvenile and adult response is appropriate at least through October and some of November, rainbow trout winter criteria were developed in small, steep mountain streams and are not directly analogous to this situation. Rainbow trout winter WUA peaks at the lowest flow modeled (350 cfs). Alternatively, whitefish spawning peaks at 1,500 cfs in the lower river and is a fall behavior. In winter, rainbow trout have lower metabolic rates and tolerate more crowding than when they are active, thus the risks to rainbow trout by seeing natural (existing range) winter flows is not great; we do not believe that winter flow-dependent habitat is a major limiting factor for rainbow trout in the Spokane River, nor that decreasing winter flows would result in significant benefits for trout. The winter flow thus emphasizes protection of whitefish spawning.

#### *Spring minimum instream flows*

In the lower river, rainbow trout spawning WUA peaks at 1,000 cfs, but in the "at Spokane" reach, where spawning habitat is much more sensitive to flow fluctuation because of lateral gravel bars, spawning WUA peaks at 3,200 cfs. Incubation flows are at least as important as spawning flows to maximize effective spawning, but these vary depending on actual flows during spawning. It is important to keep redds (nests) wetted during incubation. Flows considerably higher than 3,000 cfs can be expected during spawning season most years. If flows of 3,000 cfs measured at the Spokane gage are protected from April 1-June 15, most spawning and incubation will be protected.

#### **General Considerations in Evaluating Potential Instream Flows**

Native fish have survived natural flows for thousands of years. We should be very cautious about expectations of improvement (increased fish production) through flow

reduction. Where several species and life stages coexist, all must be considered. Much like the physicians' rule, "First, do no harm," we need to consider individual responses and avoid conditions that sharply reduces habitat for any one species or life stage or stream segment.

**Recommendations**

Based on the discussions above, our flow (cfs at Spokane 'at Spokane' gage) recommendations are:

January – April 1	1,100 cfs
April 1 – June 15	3,000 cfs
June 16 – September 30	850 cfs
October 1 – December 31	1,100 cfs

Please refer to Figure 2, two exceedance probability curves for the Spokane River 'at Spokane' gage, which include the instream flow recommendations for comparison.

Cc:

- Bob Wheeler, Triangle Assoc.
- Hal Beecher, WDFW
- Doug Robison, WDFW
- Mark Wachtel, WDFW
- Brad Caldwell, Ecology
- John Covert, Ecology
- Guy Gregory, Ecology
- Brian Farmer, Ecology
- Dave Knight, Ecology

Figure 1

### Lower Spokane River Instream Flow Data Combined Percentages based on 'at Spokane' Flow Weighted Proportionally to Reach Length (20% for 'at Spokane', 80% for Gun Club)

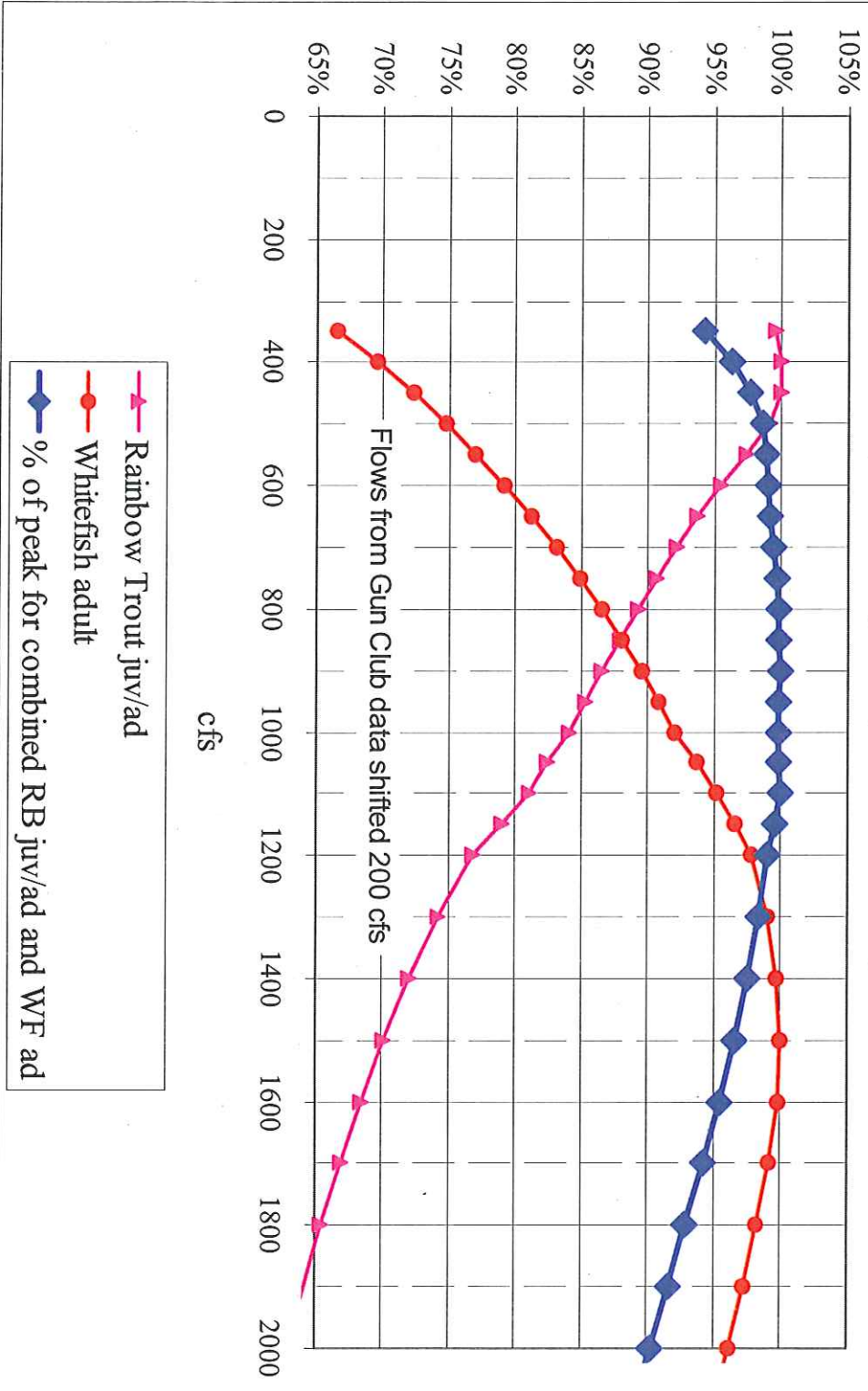
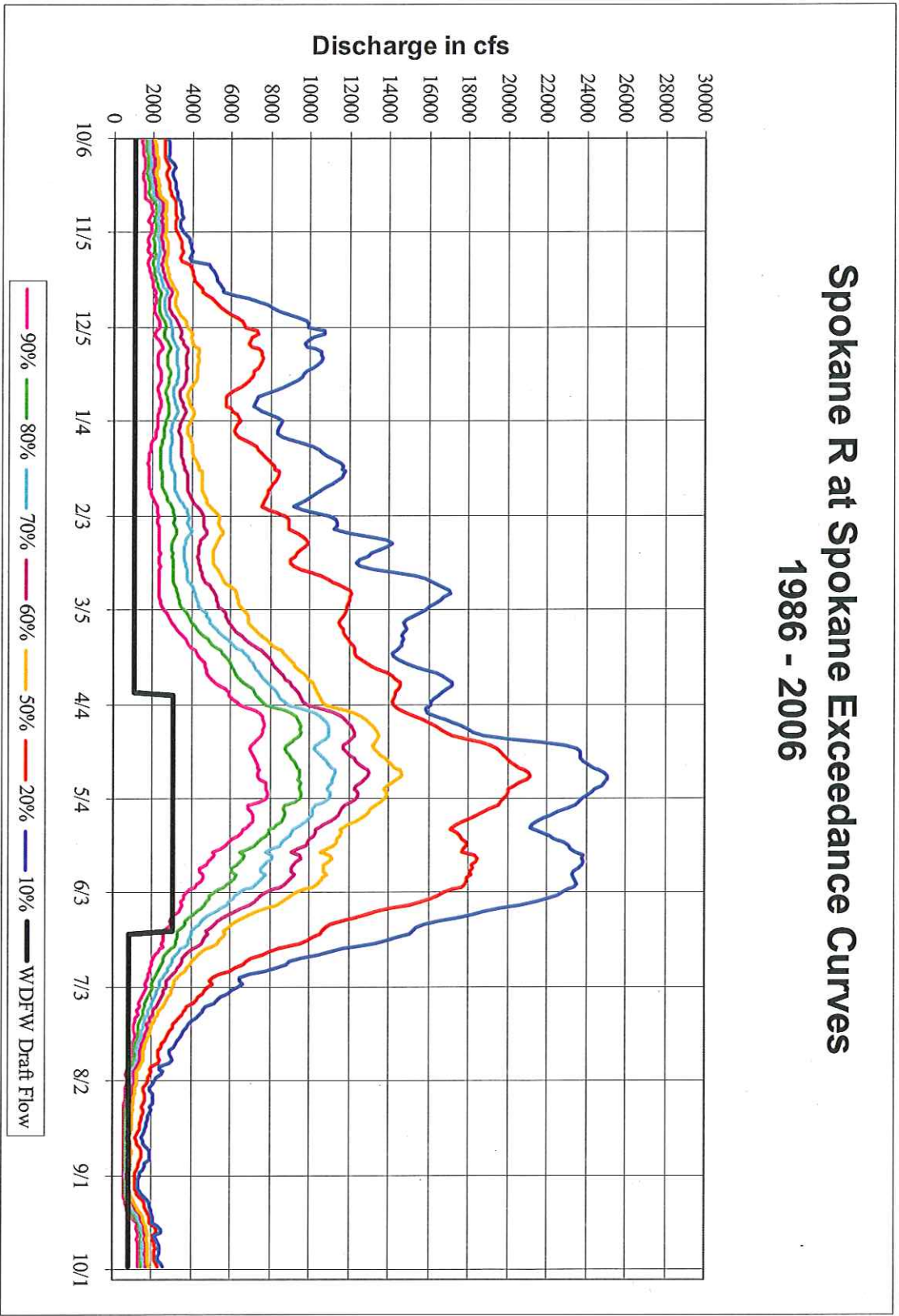




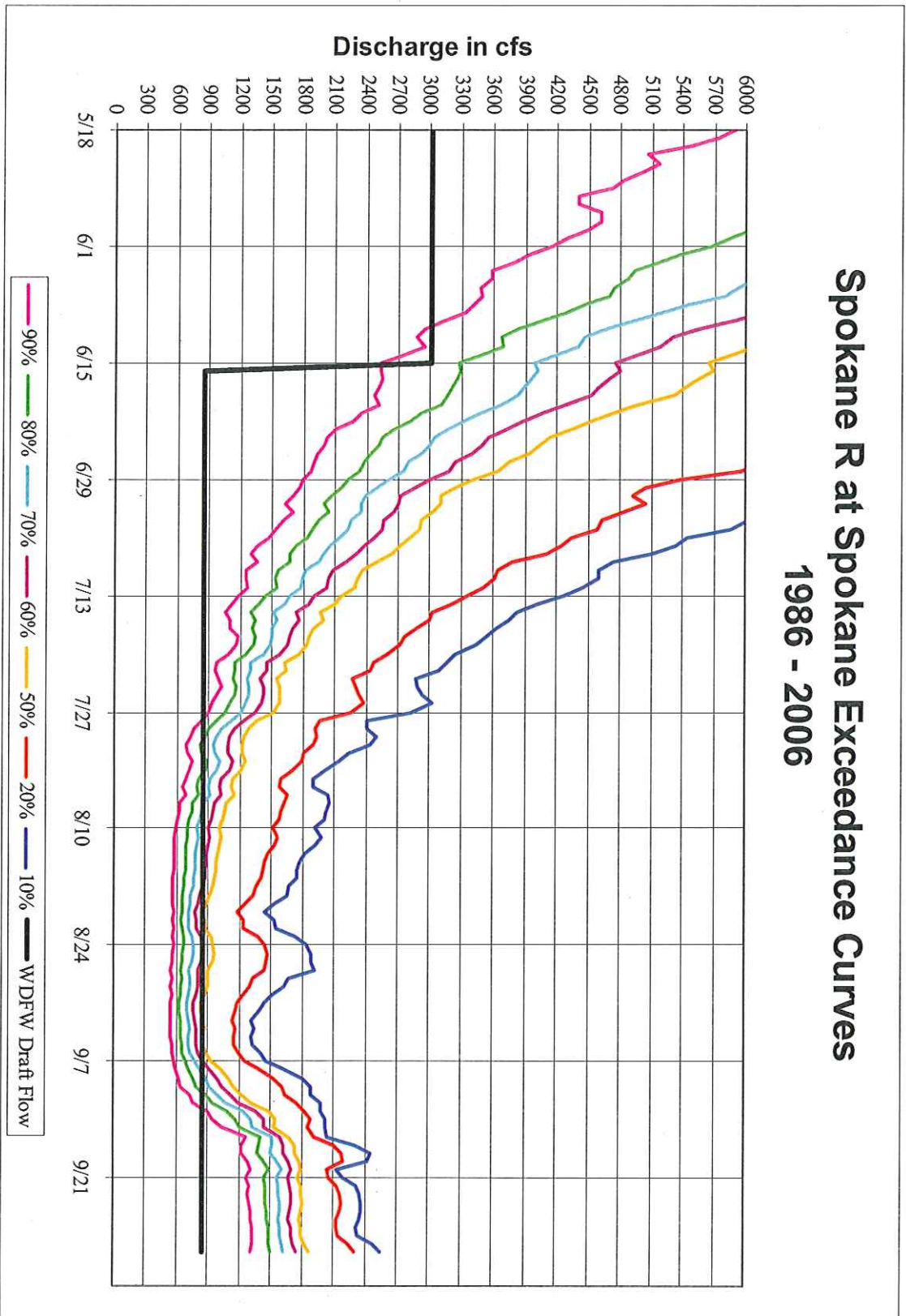
Figure 2

### Spokane R at Spokane Exceedance Curves 1986 - 2006





# Spokane R at Spokane Exceedance Curves 1986 - 2006



## Attachment 2b: Technical Comments from the State Caucus

**Fish Habitat.** The EES instream flow study stated they omitted a key lower river spawning area in the vicinity of Peaceful Valley below the falls (see the earlier study conducted by Dr. Hardin for the upper river, which also addressed spawning at Peaceful Valley). Hardin's lowest study site was Peaceful Valley, not far upstream from the uppermost EES transect. Hardin assessed transects in a spawning area that Avista and WDFW had identified as an important lower river spawning area. According to a Parametrix (2003) survey, important spawning habitat occurs at T.J. Meenach Springs (RM 70.1) and Riverbend Bar (RM 68.4), approximately 3.5 miles above the WRIA 54 study site. These areas are probably the most important spawning areas in the lower river. In the upper river (e.g., at Barker) the state caucus did not recommend spring spawning-incubation flows, either, for an instream flow rule. Instead, they addressed spring spawning-incubation flows through real-time flow management as part of the Avista relicensing. Nevertheless, the instream flow needed to protect spawning and incubation at this sensitive lower river spawning area needs to be addressed more effectively in the rule. The rule and real-time flow management for hydroelectric project mitigation are related but not identical processes. It is necessary to develop recommendations so that the two processes are consistent, even if the rules and conditions are different.

The City's proposal maximizes Weighted Useable Area (WUA) for rainbow trout during the summer, but provides only about 77% of whitefish habitat. The model probably understates rainbow trout habitat at higher flows, but is probably realistic from 450 cfs down to lower flows (as discussed below). This is because PHABSIM models trout habitat based on water velocity at 60% of the depth, which is reasonable for wadeable streams (where habitat suitability criteria for trout were developed), but in a bigger, deeper river such as the Spokane, trout will be deeper, avoiding the faster water at 60% depth. Whitefish, on the other hand, are almost always in bigger rivers and suitability criteria for them are based on their being in big rivers.

In spring, the concern is for rainbow trout spawning and incubation. Spawning flows are quite different from year to year. If flow is reduced too rapidly, incubating eggs will be lost. Detailed analysis based on spawning flows would be needed to determine the sensitivity of incubation at the City's proposed flow, and it would be different in different years, depending on magnitude of spring runoff flows.

The Weighted Useable Area (WUA) results from the EES study show that 1350 cfs at the Spokane gage (Spokane River at Spokane) provides about 99.5% of maximum WUA for mountain whitefish, the most abundant salmonid fish in the Spokane River. Mountain whitefish peaks at 1,500 cfs (using the weighted 80% WRIA 54 and 20% WRIA 57 results). Clearly, 1350 cfs is not harmful to whitefish, compared to the proposed state caucus flow in summer. Whitefish normally inhabit bigger rivers, so the habitat suitability criteria are appropriate for the Spokane River.

Rainbow trout juvenile and adult rearing during summer have a maximum WUA at 400 cfs, with 88% at 850 and 73% at 1350 cfs. Although strict reference to WUA suggests loss of habitat from 400 to 850 to 1350 cfs, this assessment should be tempered by the circumstances for the habitat suitability determination. Habitat suitability criteria for rainbow trout were determined (through measurement of depths and velocities selected and not selected by fish during snorkeling observations) in streams much smaller than the Spokane River, with generally slower and shallower water available to them. Rainbow trout juvenile and adult WUA declines at higher flows as velocities in cells exceed optimal velocities. In very high velocity streams (e.g., Sullivan Creek near Metaline Falls), we see fish staying close to the bottom in deep water, indicating a

behavioral accommodation of the fish to deep, fast water by staying in a lower velocity layer; that would suggest that in deeper water, such as the Spokane River in the canyon, fish will use water that the model, which simulates velocity at 60% of the depth rather than 80-95% of the depth, predicts to be less usable. The outcome would be that habitat does not decline at higher flows as much as the model implies, although the lower flow end of the model is probably reliable.

WDFW and Ecology are unaware of any rivers in the Pacific Northwest where high flow during summer is a limiting factor for fish. In most cases all evidence suggests that summer low flows limit fish.

**Water Quality.** The waste load allocations for phosphorus under the proposed Dissolved Oxygen (DO) Water Quality Improvement Plan (or TMDL) for the Spokane River were developed using the CE-QUAL-W2 model based on 2001 flows in the river (*Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load. Water Quality Improvement Report.* WA Department of Ecology Publication No. 07-10-0703. September 2007). This year was a drought year, and minimum low flows of about 500 cfs were reached. The State recommended 850 cfs would be protective of minimum flows needed to dilute the phosphorus at the current load allocations. If use of inchoate rights would cause river flows to drop below 500 cfs, water quality impacts are likely as the waste load allocations are modeled on a summer low flow of about 500 cfs. In this scenario it will be difficult to meet the minimum water quality standards for phosphorus and other parameters.



29 January 2008

## WRIA In-stream Flow Subcommittee:

City Environmental Programs recommends the following minimum instream flow settings for the Spokane River at the Cochran gage (USGS Spokane at Spokane):

January 1 through March 31	800
April 1 through June 15	1500
June 16 through September 30	425
October 1 through December 31	550

These recommendations are made in the spirit of open discussion in the collaborative process and therefore should not be considered final City of Spokane positions. The Spokane City Council and the Administration have made it clear that while Environmental Programs staff are authorized to participate in these discussions, the Council and Administration reserve the right under the Watershed Planning Act to engage in any final decision regarding minimum instream flow recommendations that the Watershed Planning Units might forward to Ecology.

The City recommendation at this time attempts to maintain flexibility in meeting water demand for people while protecting instream flow needs of fish. We are in a very unsettled time due to climate change, and changes and challenges in water law, where human need for water, and the need to get that water in a very energy efficient manner, may easily come in conflict with where water is, and who has what rights to it. Water right that the City holds which is not currently put to beneficial use (inchoate water) is water that remains in the ground and the City's use of that right is regulated by law including requirements for conservation. When minimum instream flow rules restrict water availability pressure is brought to bear on those who have inchoate right. These pressures, both economic and political, will result in the use of the water but not necessarily in the most environmentally responsible way. The City's proposed minimum flows attempt to relieve some of this pressure thereby maintaining some flexibility for regulators and purveyors alike in meeting and balancing future needs.

The City recognizes the legal framework that Ecology and the watershed planning unit operate in. In particular we know that flow recommendations must be made with the protection and benefit of the fishery in mind. While the average daily flows we are recommending today are below those that have been experienced at this gage in the past (other than one man caused low flow for construction), we are confident that the TMDL improvements in water quality (which represent a very large regional commitment of resources) in combination with the proposed flow minimums will result in a net enhancement of fishery conditions.

The City appreciates the importance of the aquatic habitat and the importance both to fish and people of healthy flows in our rivers, but we reject the argument that the City of Spokane and other local purveyors are collectively, solely responsible for the summer reduction in minimum flows. The City has worked through the Federal Energy Regulatory Commission – Avista collaborative process to get a minimum flow at Post Falls which we believe will benefit the river and help meet Washington water needs, but we are frustrated by the long running process which does not implement agreements until the new license is fully in effect.

We support the aesthetics flows, recreational flows, and fisheries flows recommendations agreed to by many participants in the FERC-Avista collaborative. Those recommendations provided for the needs of people while cognizant of the variability of flows in the watershed. It is our understanding that the proposed white-water park will be constructed to take advantage of the wide range of flows that the Spokane provides including its minimums.

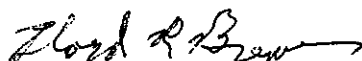
The above recommendations represent a significant shift from our preliminary suggestion of a flow of 550 at Rifle Club (to be adjusted for, and measured below Nine Mile Dam). Our preliminary recommendation was based on an example provided by the WRIA instream flow consultant labeled as having "The priority is maximum ability and flexibility to withdraw water while limiting effects on fish habitat". The Bi-State Aquifer Study found a 268 cfs aquifer contribution to Spokane River flow from the Spokane Gage to Nine Mile Dam<sup>1</sup>. In wastewater permitting the Department of Ecology assumes a gain in flow of 200 cfs between the Spokane Gage and the City of Spokane's Wastewater Treatment Plant<sup>2</sup>. Therefore the summer 550 proposal previously made could reasonably be translated into a flow recommendation of 250 at the Cochran Street Gage.

We continue to believe it is important for the region to know what flows are below Nine Mile Dam as that is apparently the only place that accurate surface flow measurements can quantify water flowing above and below ground through the lower Spokane.

<sup>1</sup> US Geological Survey Report 2007-5041; page 21; Table 2; "Outflow from aquifer"; Hydrogeologic Framework and Ground-Water Budget of the SVRP Aquifer, Washington and Idaho; Kahle & Bartolino; 2007.

<sup>2</sup> draft FACT SHEET FOR NPDES PERMIT WA-002447-3; page 17; last paragraph; Koch, R.; September 2007.

Sincerely yours,



Lloyd R. Brewer



5 May 2008

## WRIA In-stream Flow Subcommittee:

Given the recent draft 401 Certification positions taken by Ecology and Idaho Department of Environmental Quality as regards the Avista projects relative to Spokane River minimum instream flow, and assuming such positions are in the final Certifications to the Federal Energy Regulatory Commission, City Environmental Programs recommends the following minimum instream flow settings for the Spokane River at the Cochran gage (USGS Spokane at Spokane):

January 1 through March 31	1100	a
April 1 through May 15	2700	b
May 16 through June 15	2300	b
June 16 through September 30	565	c
October 1 through December 31	780	d

a – Ecology's Proposed flow though shorter period.

b – Proposed flow is about one in fifty year recurrence interval.

c – Proposed flow derived by adding half the difference between 500 cfs and the average of period of record low flows out of Post Falls at or below 600 cfs, to the Spokane gage's one in twenty year recurrence interval flow from the summer low period. That is:  $500 \text{ cfs} - 340 = 160$  then divide by  $2 = 80$  and add  $485 = 565$ .

d – Proposed flow is about a one in fourteen year recurrence interval.

We have significantly modified our previous proposal in light of the bi-state agency support for a fixed minimum flow at both the Post Falls gage and the Spokane Gage to be met by Avista through dam operations. The agencies appear to be supportive of the collaborative dam re-licensing process outcomes as participated in by City staff. That said, I believe the State of Washington's proposal in the WRIA process attempts to claim any gain in minimum river flow for the fish and it was our intent in the Avista collaborative to meet both the needs of fish and man. The proposed flows above we believe better represent that shared use of the resource. In particular it is our intent to facilitate some water during high flow periods being available for diversion to storage in the aquifer or elsewhere for summer use.

These recommendations are made in the spirit of open discussion in the collaborative process and therefore should not be considered final City of Spokane positions. The Spokane City Council and the Administration have made it clear that while Environmental Programs staff are authorized to participate in these discussions, the Council and Administration reserve the right under the Watershed Planning Act to engage in any final decision regarding minimum instream flow recommendations that the Watershed Planning Units might forward to Ecology.

The City recommendation at this time attempts to maintain flexibility in meeting water demand for people while protecting instream flow needs of fish. We are in a very unsettled time due to climate change, and changes and challenges in water law, where human need for water, and the need to get that water in a very energy efficient manner, may easily come in conflict with where water is, and who has what rights to it. Water right that the City holds which is not currently put to beneficial use (inchoate water) is water that remains in the ground and the City's use of that right is regulated by law including requirements for conservation. When minimum instream flow rules restrict water availability pressure is brought to bear on those who have inchoate right. These pressures, both economic and political, will result in the use of the water but not necessarily in an environmentally responsible way. The City's proposed minimum flows attempt to relieve some of this pressure thereby maintaining some flexibility for regulators and purveyors alike in meeting and balancing future needs.

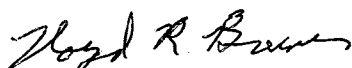
The City recognizes the legal framework that Ecology and the watershed planning unit operate in. In particular we know that flow recommendations must be made with the protection and benefit of the fishery in mind. The minimum "average daily" flows we are recommending today are above those that have been experienced at this gage in the past. We are confident that the TMDL improvements in water quality (which represent a very large regional commitment of resources) in combination with the proposed flow minimums, especially those minimums designed to protect the fish eggs & fry, will result in a net enhancement of fishery conditions.

The City appreciates the importance of the aquatic habitat and the importance both to fish and people of healthy flows in our rivers, but we reject the argument that the City of Spokane and other local purveyors are collectively, solely responsible for the summer reduction in minimum flows. The City has worked through the Federal Energy Regulatory Commission – Avista collaborative process to get a minimum flow at Post Falls which we believe will benefit the river and help meet Washington water needs, but we are frustrated by the long running process which does not implement agreements until the new license is fully in effect.

We support the aesthetics flows, recreational flows, and fisheries flows recommendations agreed to by many participants in the FERC-Avista collaborative. Those recommendations provided for the needs of people while cognizant of the variability of flows in the watershed. It is our understanding that the proposed white-water park also is planned to be constructed to take advantage of a wide range of flows that the Spokane provides.

We continue to believe it is important for the region to know what flows are below Nine Mile Dam as that is apparently the only place that accurate surface flow measurements can quantify water flowing above and below ground through the lower Spokane River arm.

Sincerely yours,



Lloyd R. Brewer

WRIA 54 Planning Unit  
**WRIA 54 (Lower Spokane) Watershed Plan**

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**APPENDIX B.**  
**SEPA ANALYSIS**

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August 2009





## APPENDIX B

### SEPA ANALYSIS

Ecology developed the *Final Environmental Impact Statement for Watershed Planning under Chapter 90.82* (Ecology, 2003) to provide Watershed Planning Units a tool to assist with an efficient and thorough environmental review. Planning Units may utilize the FEIS in on of four ways:

1. **Adoption of the Programmatic Watershed Planning EIS and Determination of Significance (DS):** This is an option if the Watershed Planning EIS adequately addresses all probable adverse impacts.
2. **Adoption, DS and Addendum:** This option is the same as #1; however, an addendum provides local decision makers with additional local information, such as land cover, environment, etc.
3. **Adoption and Supplemental EIS:** This option provides for additional independent analyses of environmental impacts, if the Final Watershed Planning EIS does not address all of the probable significant adverse environmental impacts.
4. **Adoption and Determination of Non-Significance (DNS):** This option could be used if it is determined that there are no probable significant adverse impacts associated with the recommended actions contained in the Watershed Plan.

The table below provides an analysis of each recommendation in the WRIA 54 Watershed Plan compared against alternatives evaluated in the FEIS. Some recommendations would not be subject to SEPA review – these are indicated by “Study”, “Education”, or “N/A”.

WRIA 54 PLAN RECOMMENDATION	STATEWIDE FEIS ALTERNATIVE
<b>Water Rights Administration</b>	
WRA-1 Recommend that the State legislature provide more staff and funding to the Washington Department of Ecology to process water rights and for compliance activities. The Planning Unit particularly encourages consideration of establishing a regional water master.	WP 7 WP 13 WP 14 WP 15
WRA-2 Regular updates from Ecology to the Planning Unit regarding water right activity in WRIA 54. The Planning Unit or its members may provide input to Ecology through the normal public comment periods associated with these actions.	N/A
WRA-3 Consider prioritizing hydrologic subbasins for Ecology to process water rights applications. Note that all subbasins in a priority area would need to be included and that Ecology has to follow state laws to process water rights in order of application date, but can do so within a subbasin or watershed.	WP 7 WP 10

WRA-4	Conservancy Boards in Stevens, Spokane and Lincoln Counties should develop and maintain a public database of willing water rights buyers and sellers within their counties. The Conservancy Boards will need to make statements that the extent and validity of water rights in the database are not guaranteed. (This is currently being implemented by the Stevens County Water Conservancy Board.)	WP 7 WP 8
WRA-5	Recommend that the Spokane Tribe develop a water code for the Spokane Tribe and Reservation, including fee lands.	N/A
<b>Promoting Efficient Use of Water</b>		
WUE-1	Coordinate water use efficiency and conservation measures in WRIA 54 through the existing Regional Water Conservation Collaboration and Spokane County Coordinated Water System Planning.	WP 1
WUE-2	Recommend that local governments work toward improved water use efficiency in landscaping and other outdoor water uses.	WP 1
WUE-3	Recommend that counties, cities and water purveyors develop and implement indoor and outdoor water conservation incentives.	WP 1
WUE-4	Recommend that purveyors provide notice to the Planning Unit when they initiate water use efficiency/conservation goal setting.	WP 1
WUE-5	Additional funding is needed to support implementation of water conservation and reclaimed water use.	WP 1, WP 3 WP 4, WP 5 WP 6
WUE-6	Where cost-effective and appropriate, support continued funding for County Conservation Districts and the U.S. Natural Resources Conservation Service (NRCS) work with agricultural irrigators to assess and improve water use efficiency.	WP 2, WP 3
WUE-7	Where cost-effective and appropriate, support development of and coordinate with surrounding WRIsAs for use of reclaimed water.	WP 5, WP 6
<b>Providing Water for Future Needs</b>		
WFN-1	Consider a regional management and coordination organization for water supply on the West Plains. This organization should encourage improvement of connectivity between water systems, as allowed by cost and water right constraints.	WP 5 WP 6 WP 9 WP 17
WFN-2	Complete planning for water usage on the reservation and improvements needed for the Spokane Tribe's water systems.	N/A

WFN-3	Recommend formation of a Chamokane Basin Watershed Council to resolve water-related issues in the Chamokane Basin. This Watershed Council may consist of Chamokane Basin residents, Stevens County, the Spokane Tribe, WRIA 54 Planning Unit members and others.	WP 3, WP 6, WP 7, WP 10, WP 16, WP 19, WP 21, WP 33, WP 34, WP 35, WP 36, WP 37, WP 42, WP 45, WP 47, WP 50, WP 52
WFN-4	Local governments, the Tribe and water purveyors should assess subarea water supply needs, identify appropriate measures from a range of options, and facilitate options that are economically viable and provide long-term sustainability.	WP 1, WP 5, WP 6, WP 7, WP 9, WP 10, WP 13, WP 16, WP 17
WFN-5	Establish a program to collect data and evaluate where permit-exempt wells are a concern. Develop management options for problem areas. Affected local governments and Ecology should provide technical support and funding; counties, purveyors, Ecology and Regional Health District should coordinate.	WP 16 WP 17
WFN-6	The WRIA 54 Planning Unit, Ecology, counties, and the Stevens, Spokane and Lincoln County Water Conservancy Boards should explore water rights trusts, banking, water leasing and acquisition.	WP 7, WP 8
WFN-7	The state Legislature should amend current law to allow water banking throughout the state.	WP 7, WP 8
<b>Water Storage Opportunities</b>		
WS-1	Evaluate aquifer storage and recovery and enhanced recharge for the West Plains, considering reclaimed water as a priority source but not excluding other water sources.	WP 24
WS-2	Promote the connectivity of the West Plains area so that water can be efficiently distributed where it is needed. Increased connectivity could consist of building more infrastructure for intermittent buying and selling of water or for permanent water rights transfers.	WP 9
WS-3	Promote and support water storage projects initiated by individual entities throughout the watershed to meet instream flows and to provide water for residents, business and projected growth in Spokane, Lincoln, and Stevens Counties and the Spokane Indian Reservation. Several projects have been identified in the Chamokane Creek watershed.	WP 8 WP# 19 – 24

**Integrating Land Use and Water Supply Planning**

LU-1	The Washington Utilities Coordinating Council has initiated a review of the Coordinated Water System Plan and determined not to conduct a complete update at this time. If an update is initiated, the Planning Unit supports addressing such issues as: use of consistent population estimates; consistency with approved Comprehensive Plans; improvements to the way commitments to provide water are managed for plats that may not develop for several years; planning to provide water for current and future needs on the West Plains; evaluation of transferring water from the Spokane Valley-Rathdrum Prairie (SVRP) Aquifer to the West Plains; sharing, leasing and acquisition of water rights; sharing of water system plans with adjacent purveyors; water-right transfers; connectivity; infrastructure improvements; and conservation.	WP 1, WP 7, WP 9, WP 10, WP 17, WP 21, WP 23, WP 24,
LU-2	Water system plans and other local land use plans should be consistent..	No Impact
LU-3	Entities involved in long-range land use planning within WRIA 54 should evaluate the “carrying capacity” of land related to available or proposed water supply to support responsible development consistent with comprehensive planning. If water is not available, there needs to be a plan to provide water to the area. Funding assistance will be necessary to implement this recommendation.	No Impact
LU-4	The state should provide technical support and funding to counties and cities to identify areas of strained water resources.	Study
LU-5	Counties and cities should identify and consider adding areas of strained water resources to comprehensive land use plans and development regulations (through, for example, water supply overlay zones).	No Impact
LU-6	Recommend that counties, purveyors, Ecology, and interested Planning Unit members collaborate to develop flexible local guidelines for demonstration of water supply availability and sustainability. Methods may include but are not limited to hydrogeologic investigation and characterization reports.	No Impact
LU-7	Recommend that Ecology provide technical assistance and funding for ongoing support in the implementation of guidelines developed in Recommendation LU-6 to demonstrate sufficient water availability and sustainability for proposed and existing uses for Comprehensive Plan amendments and associated zoning changes.	No Impact
LU-8	Recommend that Spokane County require applicants to demonstrate sufficient water availability and sustainability for proposed and existing uses for Comprehensive Plan amendments and associated zoning changes.	No Impact
LU-9	Pursue funding to conduct more regional water supply availability studies through WRIA 54 Watershed Plan implementation.	Study
LU-10	Spokane County should identify barriers and plan for the implementation of the Comprehensive Plan goals and policies discussed above, which are aimed at securing adequate water quantity for the residents of Spokane County. This will require development of methodologies to accurately evaluate the “carrying capacity” of land related to water supply, and application of these methodologies to ensure responsible development consistent with the Comprehensive Plan. Spokane County and Ecology could collaborate to develop guidelines for demonstration of water supply availability and sustainability. Methods may include but are not limited to hydrogeologic investigation and characterization reports.	No Impact

LU-11	The Planning Unit recommends an evaluation of methodologies and the review process used to determine water availability for proposed development projects, in order to better determine that permitted projects have a viable water supply.	No Impact
LU-12	<p>Recommend that Spokane County add the following condition for the approval of a final plat: “Prior to filing the final plat, the applicant will demonstrate provision of adequate potable water supply by providing one of the following:</p> <ul style="list-style-type: none"> <li>– A letter from a water purveyor stating they will serve the proposed subdivision. If a plat is not developed for a specified amount of time, this commitment may need to be reconfirmed by the water purveyor.</li> <li>– A copy of a water right permit from the Department of Ecology with adequate quantity to serve the proposed subdivision;</li> <li>– A plan to supply the proposed subdivision within the groundwater exemption specified in Revised Code of Washington (RCW) 90.54.050 that complies with the 1997 Attorney General Opinion, Washington State Supreme Court Decision <i>Department of Ecology vs. Campbell and Gwinn, LLC</i> and Washington State Department of Health guidelines for residential water use.”</li> </ul>	No Impact
LU-13	<p>Recommend that Spokane County add one or more of the following to the requirements for exemption from the subdivision ordinance:</p> <ul style="list-style-type: none"> <li>– Demonstration of water supply</li> <li>– Only three parcels can be created</li> <li>– Parcels must be 40 acres or greater</li> <li>– Public notice of proposed land division.</li> </ul>	No Impact
LU-14	The Planning Unit recommends support for sustainable agriculture (including forestry).	WP 2, WP 3, WP 34, WP 56
LU-15	Support efforts to provide public access to water-related recreation areas.	N/A
LU-16	A study is recommended to evaluate the land use impacts of beavers on Lake Spokane and to consider relocation of beavers to the properties of willing landowners. This could be coordinated with the Lands Council project to evaluate the role of beavers in providing water storage.	Study

<b>Instream Flow</b>		
ISF-1	<p>The Spokane River Instream Flow Work Group’s memorandum documents the WRIA 54 Planning Unit’s position regarding instream flow for the main stem Spokane River above Nine Mile Dam, with the one addition of requesting that the option of a water right reservation be considered from the “West Arm” of the SVRP Aquifer.</p> <p>When Ecology undertakes setting an instream flow for the Spokane River, the WRIA 54 Planning Unit recommends considering the option of a water right reservation from the “West Arm” of the SVRP Aquifer. Prioritization of water uses for future allocation within WRIA 54 could be applied if a reservation for future water use were included in an instream flow rule, by reserving water for certain purposes such as, in no order of priority, environmental enhancement, agriculture, domestic or municipal supply, stock watering or commercial and industrial purposes. The Planning Unit understands that the state caucus will not currently support a reservation of water for municipal water supply due to existing inchoate water rights in the Spokane River watershed that can meet future water demand, Other concerns include declining summer low flows, water quality issues, and impacts on senior water right holders.</p> <p>Prior to Ecology undertaking rule-making for this reach, the Planning Unit would like a broader community-based process that incorporates the flexibility needed to meet the varied water needs of the region and presents a complete set of the information that was developed through the Watershed planning process. This is likely to require a minimum two-year effort. If Ecology is prepared to support this effort, the Planning Unit urges Ecology to initiate this work as soon as possible.</p>	WP 26
ISF-2	The Planning Unit chose not to recommend a control point at Little Falls at this time.	WP 27
ISF-3	The Planning Unit recommends a phased pursuit of instream flow rules for tributary subbasins. A phased approach is recommended, such that the effort could be discontinued if it is found that development of a rule does not provide water management benefits for the tributary basin.	WP 26
<b>Water Quality</b>		
WQ-1	Implement the monitoring described in the <i>Quality Assurance Project Plan for Nine Mile Area Non-Point Source Monitoring Study: Water Quality Monitoring Study</i> (Tetra Tech, 2009) and proceed with a study to monitor and assess non-point sources from the surface water and groundwater that drain directly to Lake Spokane. Implementation is recommended as an early action or Phase 4 action.	WP 37
WQ-2	Support monitoring efforts undertaken by individual entities, regional groups or the Planning Unit. Current applicable monitoring programs include new Ecology ambient surface water quality monitoring stations that do not currently have secure long-term funding, and City of Spokane sediment oxygen demand sampling in Lake Spokane.	WP 37
WQ-3	Ecology will keep the Planning Unit informed about progress on all total maximum daily loads (water quality improvement plans) in WRIA 54, either through verbal updates at Planning Unit meetings or email updates to those on the email distribution list.	N/A

WQ-4	Implement the monitoring program described in the <i>Quality Assurance Project Plan for the Paleochannel Water Quality Monitoring Study</i> (Tetra Tech and GeoEngineers, March 2009).	WP 37
WQ-5	The Planning Unit will support non-point source assessments, monitoring, and reduction efforts, including non-point source reduction efforts recommended in the Chamokane Creek Watershed Plan.	WP 33, WP 35, WP 36, WP 37
WQ-6	<p>The Planning Unit recommends implementation of existing city and county stormwater management plans and development of stormwater programs in the WRIA where none currently exists. The Planning Unit emphasizes the following elements in managing stormwater:</p> <ul style="list-style-type: none"> <li>– Improve coordination between land use regulators (counties, cities and the Washington Department of Natural Resources) and Ecology regarding stormwater permits so that land use regulators have improved understanding of when this type of permitting is required.</li> <li>– Encourage counties and cities to develop land clearing and grading incentives or ordinances such as best management practices based on NRCS FOTOG and the <i>Eastern Washington Stormwater Manual</i>.</li> <li>– Encourage counties and cities to consider incentives for low impact development that incorporates measures such as pervious surfaces and on-site stormwater treatment.</li> <li>– Encourage counties to consider land use policies that preserve vegetation in natural (undeveloped) drainages.</li> <li>– Recommend that that cities and counties, the Washington Department of Health, Ecology and health districts address inadequate wastewater and stormwater systems.</li> </ul>	WP 43, WP 50, WP 30
WQ-7	The Planning Unit recommends that local governments retain qualified wetlands scientists to review wetland delineations and administer the wetland portion of critical areas ordinances.	N/A
<b>Technical Information Base</b>		
TI-1	Basalt Aquifer Groundwater Study—The Columbia River Basalt Group aquifers that underlie the West Plains area are used for water supply. Groundwater levels have declined in some areas, indicating the groundwater resource is potentially strained. A better understanding of the aquifers in the West Plains area would be beneficial to understand how this resource can be used in a sustainable way.	Study
TI-2	Identification of Areas of Strained Water Resources—Identifying potential and existing areas of strained water resources, where water supply is not currently available to meet growing water demand for out-of-stream water needs, is a major data need for WRIA 54. The Planning Unit supports development of methodologies to accurately identify areas of strained water resources, and development of tools to manage land use needs associated with these areas.	Study
TI-3	Develop Water Supply and Demand Forecast for Prioritized Areas	Study



TI-4	Stream flow monitoring for WRIA 54 tributaries—Establish stream flow monitoring program for WRIA 54 tributaries. Monitoring locations would be determined based on available funding, labor and equipment resources and the priorities as determined by the Planning Unit at the time of initiating the monitoring program.	Study
TI-5	Evaluate feasibility of establishing a stream flow gauge below Nine Mile Dam. Such a gage was identified as a need by the Spokane River Instream Flow Work Group so that Spokane River flow, including discharge from the SVRP Aquifer downstream from the ‘at Spokane’ gage, could be measured directly rather than estimated.	Study
TI-6	Recommend local governments and conservation districts seek to increase funding for water and natural resources staff, in part to carry forth Plan implementation beyond the Phase 4 grant funding. Additional staff and/or funding support is needed to implement water resources management projects and programs, and to conduct and supervise technical studies needed for water management.	N/A
TI-7	Recommend that the Legislature support Ecology’s ambient groundwater monitoring program and recommend that Ecology consider the West Plains for an ambient groundwater monitoring program.	Study
TI-8	Support Collection of Water Resources Data—Continued data collection is essential to building the knowledge base necessary for informed water resources management. Data collection efforts may be accomplished by individual entities, the Planning Unit, and volunteer efforts. All data collected through Planning Unit supported efforts will be available to Planning Unit members.	
<b>Water Resources Education</b>		
EDU-1	Water resources education programs in WRIA 54 should contribute information to and support E3 Washington.	Education
EDU-2	Conduct a water resource education needs assessment in WRIA 54.	Study
EDU-3	Include funding for education and outreach (staff and materials) within grant applications where applicable.	Education
EDU-4	The legislature should provide additional funding for education and outreach staff, such as for conservation districts, for efforts within WRIA 54.	Education
EDU-5	Ecology should make education and outreach a priority.	Education
EDU-6	Encourage local governments to hire or retain education and outreach staff.	

Key to FEIS Alternatives:

Alternative WP 1. Develop and implement municipal conservation programs including demand management and operations efficiency measures.

Alternative WP 2. Develop and implement agricultural water conservation and irrigation efficiency efforts through regional or irrigation district infrastructure improvements.

Alternative WP 3. Develop and implement on-farm agricultural water conservation and irrigation efficiency efforts.

Alternative WP 4. Develop and implement industrial conservation measures.

Alternative WP 5. Request local governments or sewer utilities to construct and operate water reclamation and reuse facilities (for example, reclamation plants and use areas) to provide water for beneficial uses.

Alternative WP 6. Promote greywater segregation and use in accordance with Department of Health standards.

Alternative WP 7. Request Ecology to transfer existing water rights for out-of-stream beneficial uses acquired through purchase, lease, voluntary methods, or condemnation to other out-of-stream beneficial uses.

Alternative WP 8. Request Ecology to transfer existing water rights for out-of-stream beneficial uses acquired through purchase, lease, voluntary methods, or condemnation to instream beneficial uses through the state's Trust Water Right Program.

Alternative WP 9. Transfer water through interties of public water systems or irrigation systems.

Alternative WP 10. Request Ecology to allocate additional ground or surface water on a short-term or long-term basis.

Alternative WP 11. Request Ecology to adopt a rule to close or partially close a basin or subbasin.

Alternative WP 12. Request Ecology to initiate an adjudication of a basin or subbasin.

Alternative WP 13. Request Ecology to assign a watermaster to a basin, subbasin, or other geographic area.

Alternative WP 14. Request Ecology to increase enforcement against illegal water use within a basin or subbasin.

Alternative WP 15. Request Ecology to evaluate some set or subset of existing water rights within a basin or subbasin to identify those that are subject to relinquishment.

Alternative WP 16. Request local governments to adopt regulations or for Ecology to adopt rules to minimize use of exempt wells, to restrict the siting of wells in proximity to streams, and/or to restrict the finished depth of new wells to the second aquifer unit or lower.

Alternative WP 17. Where adequate public water supplies are available, extend public water system service into areas served by exempt wells and require any new development to connect to such public water supplies.

Alternative WP 18. Request Ecology to require water users to install, operate, and maintain water quantity monitoring devices such as meters and gauges.

Alternative WP 19. Construct and operate new on-channel storage facilities.

Alternative WP 20. Raise and operate existing on-channel storage facilities.

Alternative WP 21. Construct and operate new off-channel storage facilities.

Alternative WP 22. Raise and operate existing off-channel storage facilities.

Alternative WP 23. Use existing storage facilities for additional beneficial uses.

Alternative WP 24. Construct and operate artificial recharge/aquifer storage projects.

Alternative WP 25. Take no action regarding water quantity.

Alternative WP 26. Request Ecology to set instream flows by administrative rule (in the Washington Administrative Code, or WAC).

Alternative WP 27. Take no action regarding instream flows.

Alternative WP 28. Request local governments or sewer utilities to construct and operate water reclamation and reuse facilities (e.g., reclamation plants and use areas) to reduce wastewater discharges to surface water bodies and improve water quality in receiving waters.

Alternative WP 29. Request Ecology to implement a pollution trading (credit) system for water in order to facilitate compliance with a Total Maximum Daily Load.

Alternative WP 30. Request Ecology to incorporate requirements for improving the quality of discharges from existing industries when issuing State Waste Discharge Permits or National Pollutant Discharge Elimination System Permits.

Alternative WP 31. Request Ecology to increase the level of inspection of commercial dairy operations and enforcement of water quality as appropriate.

Alternative WP 32. Request that Ecology expedite development and implementation of a Total Maximum Daily Load for a basin or subbasin.

Alternative WP 33. Request conservation districts or irrigation districts to assist in achieving reductions in nonpoint pollution and/or to implement Total Maximum Daily Loads established for specific federal 303 (d) listed water bodies.

Alternative WP 34. Request conservation districts to modify individual farm plans as necessary to reduce or prevent nonpoint pollution and erosion.

Alternative WP 35. Request local governments and state agencies to continue to implement or more fully implement existing water quality plans, including plans developed under Chapter 400-12 WAC.

Alternative WP 36. Develop and implement a water quality public education program intended to prevent or reduce nonpoint pollution with focus on pollution sources associated with an urban setting, or with focus on pollution sources associated with a rural setting.

Alternative WP 37. Request local governments and Ecology to develop and operate water quality monitoring programs, including installation and maintenance of monitoring devices, to measure the extent of nonpoint pollution and/or measure the effectiveness of nonpoint pollution control measures.

Alternative WP 38. Request local governments to modify Growth Management Act comprehensive plans and other land use plans to help reduce the potential for nonpoint pollution and/or to implement Total Maximum Daily Loads established for federal 303 (d) listed water bodies.

Alternative WP 39. Request local governments to amend shoreline master programs to help reduce the potential for nonpoint pollution and/or to implement Total Maximum Daily Loads established for federal 303 (d) listed water bodies.

Alternative WP 40. Request local governments to modify local regulations such as critical areas ordinances, stormwater regulations, and on-site sewage regulations to help reduce the potential for nonpoint pollution and/or to implement Total Maximum Daily Loads established for federal 303 (d) listed water bodies.

Alternative WP 41. Take no action regarding water quality.

Alternative WP 42. Implement habitat improvement projects involving construction or placement or instream structures, such as cross vanes, vortex weirs, large woody debris, fish screens, or side-channels.

Alternative WP 43. Implement habitat improvement projects intended to “daylight” streams that are currently contained within enclosed channels.

Alternative WP 44. Request local governments to route treated stormwater to water limited streams to allow for channel maintenance.

Alternative WP 45. Request the Washington Department of Transportation, local governments, or other applicable agencies to remove or replace bridges, culverts, roadways, and other infrastructure as necessary to eliminate or reduce their impacts as fish passage obstructions and/or channel constrictions.

Alternative WP 46. Support construction of fish passage facilities where such facilities do not currently exist.

Alternative WP 47. Implement habitat improvement projects involving out-of-stream riparian restoration or enhancement such as replanting or bank stabilization projects. Bioengineering methodologies should be incorporated into bank stabilization projects.

Alternative WP 48. Move river dikes back from existing river channels to allow for floodplain restoration and channel maintenance.

Alternative WP 49. Request local governments to amend or modify Growth Management Act comprehensive plans or other land use plans, shoreline master programs, and/or critical areas ordinances to protect habitat or control floodplain development.

Alternative WP 50. Request local governments to develop regulations or programs to control sources of sediment that are not addressed through critical areas ordinances or other existing regulations and programs.

Alternative WP 51. Request local governments to integrate habitat improvement planning into flood hazard reduction plans.

Alternative WP 52. Request conservation districts and irrigation districts to assist in achieving protection of habitat including, as appropriate, establishment and maintenance of riparian buffers and control of erosion and sedimentation.

Alternative WP 53. Request local, state, and federal governments, conservation districts, and private entities to acquire land and/or conservation easements for purposes of protecting habitat.

Alternative WP 54. Request Ecology and local governments to increase the level of enforcement of Shoreline Management Act violations in critical habitat areas.

Alternative WP 55. Require proponents of new or expanding fish hatcheries to follow the recommendations of the Hatchery Scientific Review Group regarding siting, interaction with native stocks, and water quality.

Alternative WP 56. Support implementation of the recommendations of Washington’s Forest and Fish Report.

Alternative WP 57. Take no action regarding habitat.



WRIA 54 Planning Unit  
**WRIA 54 (Lower Spokane) Watershed Plan**

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**APPENDIX C.**  
**COMMENT RESPONSE SUMMARY**

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August 2009



**COMMENTS ON PUBLIC REVIEW DRAFT WRIA 54 WATERSHED PLAN**

Compiled from individual comments received on Public Review Draft Watershed Plan (Updated 03/05/09)			
Commenter	Location	Comment	Action Taken
Barbara Rodgers	Direct Pumping 7-3 to surface	Next I am concerned about the idea of "Direct Pumping 7-3 to surface" this is very unacceptable unless some intern beneficial use and then into storage. Doing this could effect water wells in the same zone of influence. That impact is another not addressed concern; dense residences an area north of and east of Long lake dam, the Ponderosa area has problems with that with well located on five acre parcels that battle each other for water now. That area is another well drained area not mapped correctly or color coded.	Direct pumping of groundwater to surface water is a rarely-used strategy to provide streamflow where it has clearly been demonstrated that streamflow is needed, and the groundwater pumping will not impair existing groundwater rights.
Barbara Rodgers	General Comment	Next water storage potential there are several large areas including several upper sub basins where water could be held longer, a better option than pumping is slowing runoff. Example the top of what is squaw canyon where one of the fire were and tree growth will be slow and some natural topography could be beneficial to storage as would income from what is otherwise only a burden for weed control and fence repair. (Head of Mill Canyon) Mill Canyon fire. So there is storage potential in the areas where sparsely populated by people or trees. Scientist have hypothesis and today we have data and computer modeling; but statistical evidence supports that all models are wrong; and all are more imperfect than desired; and new methods to view data; variables in the science and in this situation do not seem to be emphasizing drought cycles create the opposite of dilution; and we have had droughts. This area has deep in the ground things that effect water quality and uranium is not the only earth element we have to consider out here.	Recommendation WS-3 supports water storage projects developed by individuals or groups such as those suggested in the comment.
Barbara Rodgers	General Comment	City discharges need a bigger focus. (A type of behavior like circling disease of fish in the Midwest turns out to have a link to waste water discharge and prescription medicines; sounds crazy but it is the world we live in.) In stream flows and models and trying to manipulate nature and could make changes that are not what is hoped for. Saving and slowing what we have is wise and remember the old saying use it or lose it.	Wastewater discharges from the City of Spokane are regulated through the City's NPDES discharge permit. Pharmaceutical drugs have become a much larger emphasis of that permit program.
Barbara Rodgers	General Comment	If you try to save water the well often produces less and water goes to the draw. I do not think any of us in this part of the state will be real happy being the "recharge area" for the Tri-Cities and Columbia River Agri-biz to the south so where is the plan included appropriate use of these fine water resources. DEEP wells say 2000 feet hit water under most of this basalt anywhere you drill; so lets plan to use it not lose it and look to replacing what we use with storage models.	Acknowledged
Barbara Rodgers	Map Figure 2-12	I found a serious error in the coding by color of Group C Moderate-Poorly drained soils in map figure 2-12. I do not know where you got this information; but I hope the rest is not so flawed. Please correct the map area to west of 231; south of Spokane River and otherwise indicated in as Group C is not as described. The opposite is true it is well drained to much so, most of the time as very high ground. It has good water holding into late spring early summer as some clay layers in areas;but that is six to sixty feet down from the surface which drains into the clay areas. Is that what you look at the layers where clay is at? Then there are some very large areas of gravel; in fact we have several gravel pits in this area that are as I say well drained. More well drained than as indicated by your map.	The soils information for this map came from the USDA SSURGO soils inventory. It may be that the resolution of that data is not high enough to pick up some of the details that you describe.
Brian Crossley, Spokane Tribe Department of Natural Resources	General Comment-Implementation	Because the planning unit has had very little discussion on the "Implementation"; this needs to be kept very general. We are not sure what the modification of the MOA will accomplish. The Tribe appreciates the work that the Lead Agency, Spokane County has done in carrying forward this plan. The plan, because of its many jurisdictions and entities does not produce a plan that sends one voice. How equitable implementation occurs will be a difficult task in Phase IV.	Recommendations IMP-1 - IMP-3 provide for the Planning Unit to determine and implement its structure for implementation of the Plan recommendations. Preliminary discussions at the Planning Unit in the fall of 2008 focused on topic/geographic-based subgroups implementation coordinated through a central organization to ensure a fair and equitable distribution of resources. Working through these decisions will be a major focus for the first year of Phase 4.
Brian Crossley, Spokane Tribe Department of Natural Resources	Page 10-2	When did the "planning unit" identify the data gaps; because there are many more that I thought were brought up in the issues phase that are not listed here. Things such as: How would flow affect DO levels in the Spokane Arm of Lake Roosevelt? What is responsible of the anoxic conditions in the lower Spokane Arm of Lake Roosevelt? Do the tributaries below Long Lake make a significant contribution of nutrients to the Lake?	The identified data gaps were identified by the Water Quality Work Group as those to list in the plan. We have now added the additional three listed in the comment.
Brian Crossley, Spokane Tribe Department of Natural Resources	Page 10-3; Elevated PCB Levels	I think there are some very obvious data gaps with respect to the elevated PCB levels-we listed them for DO, why not here?	Partly because the PCB TMDL is in a much earlier development state, the water quality work group did not choose to focus much effort on it. If you provide data gap items that you would like to see listed in the Plan, we can discuss these at the Planning Unit meeting on 3/25/09.
Brian Crossley, Spokane Tribe Department of Natural Resources	Page 10-5; Nonpoint Source Pollution, 2nd paragraph	I still am wondering what the difference is between this and the "WQ-1 recommendation".	The study referenced in this paragraph is the Spokane County Nonpoint Source Phosphorus Assessment, Phase 1. The goals for the study are to identify and quantify nonpoint source contribution, identify BMPs to mitigate impacts, evaluate cost-effectiveness of BMPs, and develop an implementation plan for reduction of these NPS's.
Brian Crossley, Spokane Tribe Department of Natural Resources	Page 10-6	Are the City and Counties stormwater plans addressing PCB loading to the River?	Yes, but there is no special focus on PCB load reduction.
Brian Crossley, Spokane Tribe Department of Natural Resources	Page 1-1; Study Area Overview	Chamokane and Little Chamokane [a]re the only major tribes that still have year round surface flow to the Spokane River	Clarified that this is tributaries within WRIA 54, since Latah and Little Spokane are separate WRIs. Did not add word "still".
Brian Crossley, Spokane Tribe Department of Natural Resources	Page 1-11	Include Stevens County shorelines, critical areas ordinance etc.	Requested edit completed
Brian Crossley, Spokane Tribe Department of Natural Resources	Page 2-11, Table 2-5	I would remove sturgeon from Little Falls Pool and add mountain whitefish, RBT, BRT rearing and spawning ; also add Total dissolved gas as a major problem. Also add flow limited to Little Chamokane.	Requested edits complete
Brian Crossley, Spokane Tribe Department of Natural Resources	Page 3-4; Elevated PCB Levels bullet	Stormwater discharge from the City of Spokane (take out "may") periodically delivers	This wording was specifically requested by the City of Spokane.
Brian Crossley, Spokane Tribe Department of Natural Resources	Page 3-9; Multipurpose Water Storage Study	Did we only look at west plains? Were there no specifics on Chamokane basin that also has a water shortage problem? It looks like Chamokane was specifically identified in Chap 7 but not here.	Text revised to reflect additional emphasis on Chamokane Creek.
Brian Crossley, Spokane Tribe Department of Natural Resources	Page 4-2	Tribe's water right 25K acre feet- remind me to check this number.	Noted
Dick Price, Stevens P.U.D.	After Page 2-2	Complete the County boundaries on map.	Requested edit completed
Dick Price, Stevens P.U.D.	After Page 6-2, Figure	In last line, delete "and water system improvements that are needed." It is too vague.	Requested edit completed
Dick Price, Stevens P.U.D.	After Page 6-5, Figure	Add information to Figure, and delete "Long Lake W.D. P.U.D." This is also Stevens County P.U.D. No. 1's water system service area.	Requested edit completed
Dick Price, Stevens P.U.D.	General Comment	An Executive Summary should be added at the front and it should include information on pages 13-4 on obligations, recommendations, etc.	Requested edit completed
Dick Price, Stevens P.U.D.	General Comment	Bullets and dashes should be replaced by numbers or letters to allow for easier reference to specific items.	Format modified to address request
Dick Price, Stevens P.U.D.	General Comment	Throughout the Recommendation sections, under each recommendation are items that have dashes prior to text. Are these actual sub-sets of the recommendations, or just suggestions? If they are part of the actual recommendations, they should be marked as such, i.e., WFN-4 (a), (b), etc.. If they are not approved by the Planning Unit as a whole, and are simply suggestions by a Committee, then these items should be taken out of the recommendation section and moved to a specific appendix or a section stating those items are only suggestions and are not approved by the Planning Unit as a whole.	Format modified to address request
Dick Price, Stevens P.U.D.	General Comment	The 2 yellow highlighted areas should be revisited by the Planning Unit when the information is available (Pages 6-7 and 9-1).	Item on page 6-7 discussed and resolved at the 3/25/09 Planning Unit meeting. The Appendix referred to on page 9-1 has been added.
Dick Price, Stevens P.U.D.	Page 11-6, Recommendation TI-6	Change to recommend increased funding for Conservation Districts for this purpose.	Added "Conservation Districts"
Dick Price, Stevens P.U.D.	Page 12-4, Recommendation EDU-4	Change to recommend additional funding go to Conservation Districts for this purpose.	Requested edit completed.
Dick Price, Stevens P.U.D.	Page 2-2, 3rd paragraph from top of page	In 2 <sup>nd</sup> sentence, change "allow" to "provide for", and change "by approximately 2,000 percent" to "significantly in these suburban areas."	Requested edits complete.
Dick Price, Stevens P.U.D.	Page 2-3, 1st paragraph from top of page	In first sentence, change "allows" to "provides".	Requested edit complete.
Dick Price, Stevens P.U.D.	Page 2-3, 1st paragraph from top of page	Reword 2 <sup>nd</sup> and 3 <sup>rd</sup> sentences to something like: "Although very unlikely to occur, current zoning would allow nearly 80% of the land currently zoned forested and open space. . ."	Requested edit complete
Dick Price, Stevens P.U.D.	Page 2-3, Figure 2-3	Add word "zoning" after "current land use".	This is based on USGS inventory of land use, not zoning.



Commenter	Location	Comment	Action Taken
Dick Price, Stevens P.U.D.	Page 2-5, Table 2-3	Check figures in table. Some are not calculated correctly. Also, total square miles doesn't agree with amounts shown in other sections.	This came up in an the first draft and was examined - the numbers should not add up as there would be double coverage in some cases (i.e. Fairchild Air Force Base is within Spokane County). Added explanatory footnote.
Dick Price, Stevens P.U.D.	Page 3-2, 3rd paragraph from top of page	Add sentence: "However, the current legal challenge to the 2003 Municipal Water Law may negatively affect these inchoate water rights. Also, not all municipal purveyors have inchoate water rights to accommodate growth."	Requested edit accepted.
Dick Price, Stevens P.U.D.	Page 4-4, "Relinquishment Rule" Section	Request that this matter be discussed again by the Planning Unit to try to reach agreement.	Discussed at 3/25/09 Planning Unit meeting. The following recommendation was added "Recommendation WRA-7: Planning Unit will review, discuss, and recommend improvements to the relinquishment law."
Dick Price, Stevens P.U.D.	Page 4-4, 3rd paragraph from top of page	In first sentence, change "rule" to "law". Also, the last 2 sentences should be reconsidered by the Planning Unit to attempt to reach agreement on this issue.	Discussed at 3/25/09 Planning Unit meeting. The following recommendation was added "Recommendation WRA-7: Planning Unit will review, discuss, and recommend improvements to the relinquishment law." Requested edit to "law" complete.
Dick Price, Stevens P.U.D.	Page 5-3, 1st bullet	Add P.U.D. to also participate in RWCC.	Requested edit completed
Dick Price, Stevens P.U.D.	Page 5-4, 1st bullet	Between "Support" and "County", add: "continued funding for"	Requested edit complete
Dick Price, Stevens P.U.D.	Page 5-4, 2nd bullet, 1st dash	Add: "Where cost effective," to beginning of sentence.	Requested edit complete
Dick Price, Stevens P.U.D.	Page 6-2, 1st paragraph from top of page	Add: "incentive programs for" between "Encourage" and "reclaimed".	Resolved
Dick Price, Stevens P.U.D.	Page 6-4, 1st paragraph from top of page	Add information to map.	Added
Dick Price, Stevens P.U.D.	Page 6-5, 2nd paragraph from top of page  and  Page 3-1, "Water Uses" Section	Add the following: "In the Colville River Watershed (WRIA 59) net exempt well water consumptive usage is estimated at 308 gpd when averaged over the entire year. This number was calculated starting with actual usage from 4 rural water systems, increasing these numbers for larger lots, and then reducing usage by 50% for groundwater recharge through the onsite drainfields. If this amount of 308 gpd is used in WRIA 54, the total exempt well water usage would be only 1,242 instead of 5,792-acre-feet per year, and is only 2% of the total WRIA 54 consumptive water use instead of 11%."  I apologize for not discovering this earlier, but it should be discussed now.	please see revised text. Section 3 not revised as this section is a summary of a technical study which did not utilize this information provided by the commenter.
Dick Price, Stevens P.U.D.	Page 6-7, 1st paragraph from top of page	In 2 <sup>nd</sup> line, change "may be the only" to "are the only".	There are other possibilities such as rainwater harvesting.
Dick Price, Stevens P.U.D.	Page 6-8, 3rd dash	In 3 <sup>rd</sup> line, delete "provided that the zoning is consistent with water available." In most areas, there is insufficient information to make this determination. This is a worthy and important goal, but is currently not a reality in many areas.	This statement was requested by another Planning Unit member.
Dick Price, Stevens P.U.D.	Page 6-8, 4th bullet	Reword to: "In subbasins where groundwater resources are proven strained, encourage the development and implementation of project specific mitigation measures to offset impacts from new permit-exempt wells."	Need clarification. This seems to conflict with your next comment.
Dick Price, Stevens P.U.D.	Page 6-8, 4th dash	In 2 <sup>nd</sup> line, change "are otherwise closed" to "in the future may otherwise be".	Requested edit accepted.
Dick Price, Stevens P.U.D.	Page 6-8, 5th and 6th bullet	Move from suggestions to recommendations.	The Planning Unit discussed and agreed upon these as suggestions in the Fall of 2008.
Hank Nelson, Avista	Page 10-2.	Delete the following sentence under <b>Recommendations</b> , The TMDL Oversight Committee (the Collaboration) will be the primary entity implementing the TMDL.	Requested edit completed
Hank Nelson, Avista	Page 10-2.	For Recommendation WQ-1. Make clear that the QAPP has already been developed and the recommendation is to proceed with the study using this QAPP.	Requested edit completed
Hank Nelson, Avista	Page 1-10, Table 1-2	Please change the name of the Program to FERC Hydroelectric License. Please also drop the word renewal from the Description.	Requested edit completed
Hank Nelson, Avista	Page 2-8, last paragraph on this page.	The text should read: There are seven hydro electric dams on the Spokane River. Three of these dams are within WRIA 54. They are Nine Mile Dam, Long Lake Dam, and Little Falls Dam. They were constructed in 1908, 1915, and 1910, respectively. Grand Coulee Dam is located on the Columbia River and creates the Spokane Arm of Lake Roosevelt.	Edit accepted.
Hank Nelson, Avista	Table 13-1, item TI-5.	Avista did not support this idea during work group discussions. Avista should be deleted as a sponsoring entity.	Edit accepted.
Hank Nelson, Avista	Table 2-5, Fisheries in WRIA 54, page 2-11.	General comment on this table: It is not appropriate to base a watershed characteristic on assumed or speculative information. Therefore, critical species or life stages based on assumptions should be deleted. Additionally, many of the critical species listed including rainbow trout, brown trout, Chinook salmon, kokanee salmon, brook trout, and eastern brook trout are non-native species introduced into the reach area and should be clearly identified as non-native. Other species that are important and are being currently managed are smallmouth and largemouth bass, perch, and crappie should be included in the table.	Table revised to satisfaction of commenter.
Hank Nelson, Avista	Table 2-5, Fisheries in WRIA 54, page 2-11.	<i>Spokane River Main Stem-Latah Creek to mouth of Deep Creek</i> A portion of this reach of the Spokane River is the Nine Mile Reservoir. The WDFW has encouraged Avista to stock hatchery rainbow trout into the Nine Mile Reservoir to enhance angling opportunity. The new FERC license for the Spokane River is expected to increase the number of hatchery rainbow trout stocked into the Nine Mile Reservoir (FERC 2007). Therefore the comments portion of the table should read: Pure redband rainbow trout strains exist in the free-flowing reach. Supports all life stages of rainbow trout and mountain whitefish along the free-flowing reach.	Edit accepted.
Hank Nelson, Avista	Table 2-5, Fisheries in WRIA 54, page 2-11.	<i>Spokane River Main Stem-Below Nine Mile Falls</i> It is not appropriate to base a watershed characteristic on assumed and speculative information. This entire section could be removed as an independent section in the table, since it is included in the following section.	Table revised to satisfaction of commenter.
Hank Nelson, Avista	Table 2-5, Fisheries in WRIA 54, page 2-11.	<i>Spokane River Main Stem-Below Nine Mile Falls Spokane (Long Lake)</i> : Ecology designates this reach as a Lake. This section of the table should be re-named "Lake Spokane." The WDFW also manages Lake Spokane as a mixed species fishery and therefore the critical species should include largemouth and smallmouth bass, crappie and perch. Wild rainbow trout are not known to inhabit this reach. Hatchery raised rainbow trout have been stocked into Lake Spokane for years and are expected to be supplemented into Lake Spokane in large numbers in the future (FERC 2007). Therefore, rainbow trout should be clearly identified as non-native. Avista disagrees with the comments in this section. Lake Spokane is not a short reach and Avista is not aware of any biological evidence that TDG problems exist in the Lake.	Table revised to satisfaction of commenter.
Hank Nelson, Avista	Table 2-5, Fisheries in WRIA 54, page 2-11.	<i>Spokane Main Stem-Little Falls Pool</i> Avista is not aware of information that sturgeon exist in this reach and therefore should not be identified as a critical species. Chinook salmon have been found in the Little Falls Reservoir but are known to have originated from the IDFG introductions in Coeur d'Alene Lake upstream. If identified as a critical species, then Chinook salmon should clearly be labeled as an introduced species. The assumed information should be deleted. Total dissolved gas problems should be added as a comment in the table.	Table revised to satisfaction of commenter.
Hank Nelson, Avista	Table 2-5, Fisheries in WRIA 54, page 2-11.	<i>Spokane River Main Stem-Below Little Falls (Spokane Arm of Lake Roosevelt)</i> This reach should be re-named to Spokane River Main Stem-Spokane Arm of Lake Roosevelt. The assumed information should be deleted. Kokanee, Chinook, Brown trout, and rainbow trout are introduced species and should be identified as such.	Table revised to satisfaction of commenter.
Heather Cannon, Division of Environmental Health	Page 12-3	<b>Consideration of Options.</b> DOH would value the opportunity to meet with city and county planning departments, councils, and commissions on an annual basis. DOH is currently evaluating how the water system plan review process is working and when this evaluation is completed it may be possible that time and resources would be available to provide annual educational opportunities. However, resources for annual education are not available at this time.	Noted
Heather Cannon, Division of Environmental Health	Page 1-4	<b>Table 1-1</b> lists municipal governments and municipal water suppliers; does Indian Village Estates fit into one of these categories?	Indian Village Estates Water Association is a Group A Water Purveyor
Heather Cannon, Division of Environmental Health	Page 3-2	<b>Table 3-1</b> lists Outflows, Net Demand as 25,970 acre-feet. How does this correspond with the estimated water use on page 3-1.	The value in Table 3-1 is estimated (calculated) net demand based on population and land uses. The value on Page 3-1 is "gross" water use - in the case of public water systems - the water that is delivered to customers.
Heather Cannon, Division of Environmental Health	Page 6-7	<b>Recommendation WFN-4.</b> The Department of Health is currently evaluating the regulation programs for small water systems including the Group B program. It has not been determined how resources will be allocated for small water systems in the future. Please remove reference to changes to the Group B program until the DOH study is complete.	Resolved at 3/25/09 Planning Unit meeting
Heather Cannon, Division of Environmental Health	Page 8-5	<b>Recommendation LU-2.</b> DOH currently sends draft water system plans to Ecology for consistency review by the watershed lead. At this time DOH does not require water systems to send copies of water system plans directly to watershed planning units and this request is not likely to be made in the near future.	Noted
Heather Cannon, Division of Environmental Health	Table 13-1	<b>WUE-1 Coordinate water use efficiency and conservation measures in WRIA 54 through the existing RWCC and Spokane County CWSP.</b> This table lists DOH as a lead entity but the text for this recommendation on page 5-3 does not mention DOH. Please change this DOH reference to a supporting entity in principle.	Edit accepted.
Heather Cannon, Division of Environmental Health	Table 13-1	<b>WFN-5 Establish a program to collect data and evaluate where permit-exempt wells are a concern.</b> This table lists DOH as a supporting entity with funds but the text for this recommendation on page 6-8 does not mention DOH. Please remove this DOH reference in Table 13-1.	Edit accepted.

Commenter	Location	Comment	Action Taken
Heather Cannon, Division of Environmental Health	Table 13-1	<b>LU-2 Water system plans and other local land use plans should be consistent.</b> This table lists DOH as a lead entity. Please change this DOH reference to a supporting entity in principle.	Edit accepted.
Heather Cannon, Division of Environmental Health	Table 13-1	<b>LU-4 The state should provide technical support and funding to counties and cities to identify areas of strained water resources.</b> This table lists DOH as a lead entity. Please change this DOH reference to a supporting entity in principle.	Edit accepted.
Jim DeGraffenreid, Lincoln County Land Services	page 6-7, first paragraph, last sentence	it should read: "Lincoln County, a primarily rural county, relies on permit exempt wells for single family homes and to support small (4 lots or less) development proposals. The County strongly encourages the use of engineered Group B water systems for these small development proposals".	Requested edit completed.
John Gross, Spokane	Instream Flow section	I am commenting specifically on the Instream Flow section of the draft plan. I realize that a certain amount of work has gone into collaboration and developing a scientifically defensible instream flow strategy. However, given that one of the goals of an instream flow is to support fish and wildlife and their habitats, the lack of progress is disappointing. I realize that this comment may have little bearing on future development of this plan. Given the precipitous decline in native fish populations in the Spokane, I look forward to a plan, and state instream flow recommendation, that account for the needs of native fish and integrate flows with other habitat requirements.	It is true that a separate Instream Flow Work Group convened and worked for nearly a year to develop instream flow recommendations for the entire mainstem Spokane River in Washington State. This work group made a decision to discontinue its effort for the time being, however the WRIA 54 Plan does include a statement of support for continuation of a community-based effort to develop instream flow recommendations at a time when Ecology intends to initiate rule-making.
Larry Guenther, Stevens County Board of County Commissioners	General Comment	Replace front cover picture with one that better represents the beauty of Lake Spokane or all around scenic picture of the watershed, instead of the extreme draw-down picture at the end of the watershed, which depicts the watershed at its extreme worst.	Cover revised. Photo not intended to be negative, but rather to show a very dynamic and dramatic portion of the watershed that few people in the Spokane urban area see very often.
Larry Guenther, Stevens County Board of County Commissioners	General Comment	Add a Glossary of Terms	Requested edit completed
Larry Guenther, Stevens County Board of County Commissioners	General Comment	Add a List of Acronyms and Abbreviations (used within the Plan)	Requested edit completed
Larry Guenther, Stevens County Board of County Commissioners	General Comment	Add an Executive Summary, which summarizes the Goals, Objectives, and recommended Actions/Strategies of the Watershed Plan.	Requested edit completed
Larry Guenther, Stevens County Board of County Commissioners	General Comment	Replace bullets and dashes with numbers or letters throughout Plan, for easier tracking and discussion purposes to help with reviewing and implementing plan. (Bullets are very difficult to use ... viewer constantly has to count down or up to find exact bullet being discussed.)	Format modified to address request
Larry Guenther, Stevens County Board of County Commissioners	General Comment	Clarification is needed for all Recommendations in the Plan. It's unclear whether dashes following Recommendations are the actual recommendations, sub-sets of the recommendations, or just suggestions? If they are part of the actual recommendations, they should be marked as such, i.e., WFN-4 (a), (b), etc. If they are not approved by the planning unit as a whole, and are simply suggestions by part of the unit (which is our understanding), then these items should be taken out of the recommendation section and moved to a specific appendix or section stating those items are only suggestions and not approved by the Planning Unit as a whole (i.e., with text stating suggestions/topics discussed that the group wasn't in agreement on, but could re-address during implementation. )	Format modified to address request
Larry Guenther, Stevens County Board of County Commissioners	General Comment	General Observation/Caution: Since most everything is a recommendation, these items do not carry the weight of an obligation. Still, a recommendation, once it is recorded in a plan, can stimulate some parties to claim that it should be implemented as if it were an obligation.	Noted
Larry Guenther, Stevens County Board of County Commissioners	General Comment	Clarify Obligations & Recommendations in Implementation Tables: Request that each item in table start with words 'OBLIGATION' or 'RECOMMENDATION:' to help reader immediately see up front which it is, including those items with are 'in support of.	Requested edit completed
Larry Guenther, Stevens County Board of County Commissioners	General Comment	All yellow highlighted areas and areas left blank 'to be completed/filled in needs to be addressed throughout the Plan PRIOR to finalization of the Plan, and re-reviewed and approved by the planning unit.	Item on page 6-7 resolved at 3-25-09 Planning Unit meeting. The Appendix referred to on page 9-1 has been added.
Larry Guenther, Stevens County Board of County Commissioners	Page 10-2, Statement of Support WQ-2	Change 'Statement of Support' title to be 'Recommendation'. This is a good statement and would help with future monitoring efforts in Chamokane Creek and in the Suncrest area.	The Planning Unit discussed whether this would be a recommendation or statement of support. Every recommendation needs an identified lead/sponsoring entity to actively pursue implementation. If a lead was identified for this item, the Planning Unit may support changing it to a recommendation.
Larry Guenther, Stevens County Board of County Commissioners	Page 10-5, Statement of Support WQ-5	(a) Change 'Statement of Support' to 'Recommendation'. (b) In line one, after 'Planning Unit' add wording 'recommends continued actions that ...' It's important to keep this recommendation before the Planning Unit, especially if there are more watershed grant opportunities.	The Planning Unit discussed whether this would be a recommendation or statement of support. Every recommendation needs an identified lead/sponsoring entity to actively pursue implementation. If a lead was identified for this item, the Planning Unit may support changing it to a recommendation.
Larry Guenther, Stevens County Board of County Commissioners	Page 1-1, Study Area Overview, second paragraph, line 6	needs rewording or additional text to qualify statement 'but Chamokane and Little Chamokane Creeks are the only major tributaries that have a year-round flow ...' Are these two the only two fully contained within the WRIA? Compare this text with the list of tributaries on page 2-9, to make sure the list/text is consistent.	Clarified that this is tributaries within WRIA 54, since Latah and Little Spokane are separate WRIsAs.
Larry Guenther, Stevens County Board of County Commissioners	Page 11-6, Recommendation TI-6	(a) In line two, after 'natural resources staff, add wording 'to carry forth the WRIA work beyond the Phase 4 grant funding.' In the beginning of the second sentence, delete 'Additional staff and replace with wording 'Funding support' is needed. The Stevens County Conservation District and Spokane Tribe Natural Resources Department can provide the support "needed to implement water resources management projects and programs, and to conduct and supervise technical studies needed for water management". Instead of hiring new personnel, Stevens County can be a partner in seeking grant dollars for the District and the Tribe. The personnel are here, funding can be the biggest constraint to conducting projects.	Requested edit completed. See revised wording, which retains "additional staff", but adds "and/or funding support". Some local governments also need staff.
Larry Guenther, Stevens County Board of County Commissioners	Page 1-2, Watershed Planning Overview, second sentence	Second sentence, reword to capture the importance stated in the law that does note the importance of the cooperative process, but also just as importantly states: 'to provide local citizens with the maximum possible input concerning their goals and objectives for water resource management and development.' (per pp. 1 in RCW 90.82.005)	Requested edit completed.
Larry Guenther, Stevens County Board of County Commissioners	Page 12-4, Recommendation EDU-2	Line 1, after the word 'Conduct' delete the remainder of the sentence, and replace with wording 'water resource education needs assessment in WRIA 54.'	Requested edit completed.
Larry Guenther, Stevens County Board of County Commissioners	Page 12-4, Recommendation EDU-4	At the end of the sentence, change the word 'staff' to 'efforts within the WRIA.'	Requested edit completed.
Larry Guenther, Stevens County Board of County Commissioners	Page 12-4, Water Quality (Considerations of Options)	First Bullet - Water Quality: Volunteer monitoring programs are good educational tools, but the quality assurance / quality control aspects may bring the data into question. Ecology is to provide the education, training, and quality assurance for volunteer monitoring programs. If local entities are to have volunteer programs, the local entities should design them and administer them (not Ecology.)	Concern is noted. There are many good tools available which should be used to guide the role and data collection activities of volunteer monitors or "citizen scientists".
Larry Guenther, Stevens County Board of County Commissioners	Page 13-1, Recommendations (in box)	First bullet, recommend changing Memorandum of Agreement that guides Planning Unit's activities to be revised to include all of Phase 4 and beyond (not just two years of Phase 4.) Do not limit it so the document has to be revisited again within two years, but only as needed.	Requested edit completed.
Larry Guenther, Stevens County Board of County Commissioners	Page 13-2, Role of Planning Unit in Implementation	Request that Planning Unit read and consider the 3/10/09 Stevens County comment letter to Spokane County Commissioner Mark Richard included with this set of comments as it related to Section 13 - Implementation. The following items noted in the letter need further discussion by the Planning Unit as the group works toward Phase 4 Implementation: (a) Funding considerations for jurisdictions where projects will be implemented. (b) Equitable considerations for implementing projects and funding, with respect to the natural differences between the tribe, rural and urban counties, and others. (c) Management by local jurisdictions through interlocal agreements for portions of the implementation work within the rural counties and tribal lands. (d) Increased Citizen Participation - work to increase public participation and coordinate projects more closely with local jurisdictions, to increase public involvement.	Discussed at 3/25/09 Planning Unit meeting. Suggested revisions to Chapter 13 from commenter accepted.

Commenter	Location	Comment	Action Taken
Larry Guenther, Stevens County Board of County Commissioners	Page 1-7, Mission Statement and Goals	(a) In paragraph just following the mission statement, second sentence: The sentence "The following goals for WRIA 54 were identified by individual work groups." Question: Were those goals put into any type of priority order of importance and then approved and supported by the Planning Unit? If so, please change current text to show the goals were developed and approved by the Planning Unit (not by individual work groups,) to show stronger emphasis and importance to the Plan's goals, and then state these priority goals within the Executive Summary. (b) Recommend the list of goals line up with the same order stated on pg. 1-6, bottom paragraph. (c) Also, there seems to be a missing link of 'objectives' to be reached, between the goals and then recommendations and/or obligations mentioned later in the Plan.	Goals were not prioritized. As with other areas of the Plan, the term "work group" will be replaced with "Planning Unit". Work group topic list re-ordered to match goal categories. Objectives discussed 3/25/09 Planning Unit meeting. It was decided to not add objectives.
Larry Guenther, Stevens County Board of County Commissioners	Page 2-1, Watershed Overview	(a) In paragraph 1, line 2, after 'Airway Heights', add 'Fairchild', and change 'Tribe' to 'Reservation.' (b) Second paragraph, last line, delete last sentence, and replace with 'In the northern part of the watershed, agricultural lands are predominate in the valleys, with evergreens trees, shrubs, and grasslands in the upland areas.'	Requested edits completed.
Larry Guenther, Stevens County Board of County Commissioners	Page 2-2, Future Land Uses	Request rewording the following: (a) 'land uses to grow', as land uses don't grow. (b) In line two, add text to quantify how the '2,000 percent' statement was estimated and verify percentage. The statement seems very extreme, and may be better presented by stating a median average instead of unlikely extremes.	Reworded: Figure 2-4 summarizes future land use for WRIA 54 as allowed by current zoning. The zoning would provide for low-intensity residential land uses to grow significantly in these suburban areas, primarily in the southeastern portion of the watershed around the City of Spokane and Airway Heights and to continue along the Spokane River, Lake Spokane (Long Lake), Coulee Creek, and Deep Creek.
Larry Guenther, Stevens County Board of County Commissioners	Page 2-2, Table 2-1	For Camas Valley & Ford listing, add the following text after each (Chamokane), to that readers can identify these sub-basins are within the larger Chamokane basin.	Requested edit completed.
Larry Guenther, Stevens County Board of County Commissioners	Page 2-3, Future Land Uses	In the first paragraph, line 4, text says 'it would result in a nearly 80 percent decline ...' Please verify statement. Even though the following sentence states the 80 percent of changes are not likely and not expected, wouldn't it make more sense to provide the median range on all percents, noting the percent less or more that could take place under moderate or extreme build out? Several places within the plan, such as in the pg. 2-2 (1) above, tend to lean toward stating the most extreme scenarios, which seems to reduce the effectiveness of a commonsense watershed plan. After quantifying statement, consider switching order of last two sentences in paragraph, for clarification and better reading.	See revised wording: Stevens County zoning allows provides for additional low-density residential growth near Springdale in the northern portion of the watershed. Land zoned for agriculture would accommodate an estimated 90 percent increase, predominantly in the Camas Valley, Ford, and Long Lake North subbasins. Although very unlikely to occur, current zoning would allow <del>if these areas were developed to the full extent that the zoning allows, it would result in a</del> nearly 80 percent decline in forested and open land areas. <del>These possible future scenarios are based entirely on the land use zoning, which indicates allowed uses, not necessarily changes that are likely or expected</del>
Larry Guenther, Stevens County Board of County Commissioners	Page 2-3, Table 2-3	Recheck figures and percentages, as they do not total up. Also consider adding a final line showing totals, and an additional column showing square miles of WRIA 54 within each jurisdiction.	This came up in an the first draft and was examined - the numbers should not add up as there would be double coverage in some cases (i.e. Fairchild Air Force Base is within Spokane County). Added explanatory footnote.
Larry Guenther, Stevens County Board of County Commissioners	Page 2-5, Geology/Hydrogeology	At the end of the sentence in seventh line down, after '... surface water resources' change the period to a comma and add 'where there is hydraulic continuity.'	Edit accepted.
Larry Guenther, Stevens County Board of County Commissioners	Page 2-5, Population	Last line states Stevens County 'increasing the most at 55 percent.' We would like to know at what location and how this percentage was quantified, (incl. the assumed percentage of build-out.)	These are based on the latest OFM projections and 2000 census data apportioned between the three counties. Added actual population numbers.
Larry Guenther, Stevens County Board of County Commissioners	Page 2-6	First paragraph, line three, after the word 'primary' add 'known', to read 'primary known aquifers.'	Requested edit accepted.
Larry Guenther, Stevens County Board of County Commissioners	Page 2-6, Columbia River Basalt Group	First bulleted paragraph, line one, is '6 percent of total' correct? It looks like it should be the 80% noted in second bullet paragraph, which states in line one '85 - 88 percent'. Were the percentages accidentally switched?	No, they are correct as written. Add clarifying language.
Larry Guenther, Stevens County Board of County Commissioners	Page 2-6, Spokane River	For Figure 2-9, please state where gauge location/data collection was taken.	Added location of gauge which is at Long Lake Dam
Larry Guenther, Stevens County Board of County Commissioners	Page 3-1, Water Use	Third bullet, Permit exempt wells: For the Stevens County portion of the exempt well estimate, please use the Stevens County current use estimates, per requested change for Page 6-5, Permit Exempt Wells. This would provide an actual use estimate instead of high-end estimates. All correlating percentages and totals would need to be revised, including the Page 3-2 (4% estimate net demand would need corrected).	Added Stevens County estimate to Chapter 6, but not to Chapter 3 which is a summary of a report where this estimate was not yet available.
Larry Guenther, Stevens County Board of County Commissioners	Page 4-4, Relinquishment Rule	(a) Change title to say 'Relinquishment Law'. (b) Request that Relinquishment be re-discussed by group before Plan is finalized, as the group may come to consensus in supporting the 15-yr. look back.	Discussed at 3/25/09 Planning Unit meeting. The following recommendation was added "Recommendation WRA-7: Planning Unit will review, discuss, and recommend improvements to the relinquishment law." Requested edit to "law" complete.
Larry Guenther, Stevens County Board of County Commissioners	Page 5-3, Recommendation WUE-1	Stevens County should be represented on the Regional Water Conservation Collaboration. Stevens PUD should also be a part of this group. It is important to bring the county's perspective to any regional issues. Add Stevens PUD to second dash, after Stevens County. Third dash, first line, Stevens County cannot support this recommendation unless the word 'ordinance' is changed to 'educational outreach incentives'.	Stevens PUD added. Added "and/or educational outreach" after ordinance.
Larry Guenther, Stevens County Board of County Commissioners	Page 5-3, Recommendation WUE-2	Fourth dash down, make specific to Spokane County, or reword recommendation, as this recommendation is not applicable to Stevens County. Fifth bullet down, make specific to Spokane County, or reword recommendation, as this recommendation is not applicable to Stevens County.	These are just suggested items that are not binding to any participants, but were requested to include by some to capture ideas discussed for implementation.
Larry Guenther, Stevens County Board of County Commissioners	Page 5-4, Statement of Support WUE-6	Are Statements of Support actual 'Objectives', and the dashes 'Recommendations'? If so, you may want to reword them for clarification. For both WUE-6 & WUE-7, add the following to the start of each sentence: 'Where cost effective and appropriate'.	See revised formatting that specifies "recommendation, obligation, or suggestion". Wording "where cost effective and appropriate" added.
Larry Guenther, Stevens County Board of County Commissioners	Page 5-4, Statement of Support WUE-7	Same comment as in WUE-6. Reason: Reclaimed water is a great concept, but the cost of developing the system and then getting the water to crops and landscapes for irrigation can be prohibitive. In pg. 5-4 (1) comment on WUE-7, request add wording after 'Encourage' to say 'Encourage incentive programs for' .... Since reclamation water is costly to design and implement, incentive programs and grants would greatly help direct implementation, especially during fiscally challenging times. Also delete the wording 'growth for crops' and replace with 'existing and new agriculture'.	See revised text.
Larry Guenther, Stevens County Board of County Commissioners	Page 6-5, Permit Exempt Wells	In paragraph two, line 3, it estimates 3,600 current exempt wells, utilizing approximately 5,792 acre-feet water per year. In WRIA 59, an average annual water use estimate was developed for exempt wells (including DOH's return flow estimates) by assessing 'actual' water use records from four independent rural water systems. The daily annual average water use estimated is 308 gpd. By using 308 gpd (X) 3,600 current exempt wells in WRIA 54, the total water usage would be 1,242 instead of 5,792 ac-ft per year, which is only 2% of the total consumptive use instead of the stated 11%. This correction will show more accurate water use calculations, and correct the high overestimation. Stevens County can not support the current water use statements for exempt wells as calculated both here and on pages 3-1 and 3-2.	please see revised text. Section 3 not revised as this section is a summary of a technical study which did not utilize this information provided by the commenter.
Larry Guenther, Stevens County Board of County Commissioners	Page 6-7, Recommendation WFN-3	Line one, change 'Work Group' to 'Watershed Council'. (FYI to Planning Unit: It appears as if the Stevens County Conservation District's grant application for the Chamokane Creek Watershed Implementation Project will be funded by Ecology. The project will start in January 2010. The District's desire for the Chamokane Creek Watershed Council is to have Stevens County and WRIA 54 Planning Unit representatives in addition to the watershed residents and the Spokane Tribe. With this, request change in wording to second sentence to state 'Watershed Council' and include 'Stevens County, WRIA 54 Planning Unit, to the sentence.	Requested edits accepted.
Larry Guenther, Stevens County Board of County Commissioners	Page 6-8, Recommendation WFN-4	Third dash on page, in sentence beginning with 'Water Purveyors ...' put period after 'strained.' and delete the remainder of the sentence, as it is NOT applicable in Stevens County.	This statement was requested by another Planning Unit member.
Larry Guenther, Stevens County Board of County Commissioners	Page 6-8, Recommendation WFN-4	Fourth dash on page: In line one, add a comma after sub basin, and after 'study areas that' add the words 'in the future may'. At the end of the sentence, change the colon to a period.	See revised text.
Larry Guenther, Stevens County Board of County Commissioners	Page 6-8, Recommendation WFN-4	Last two dashes under WFN-4: Request that these suggestions be made specific stand alone recommendations (not just suggestions underneath a recommendation.)	The Planning Unit discussed and agreed upon these as suggestions in the Fall of 2008.
Larry Guenther, Stevens County Board of County Commissioners	Page 7-1, Columbia River Water Management Program	(a) In line four, after the wording 'development of add 'new'. (b) In next to last sentence of paragraph, add a period after 'instream flows' and delete the remainder of the sentence. Then add an additional sentence stating 2/3 of the new water can be used for allocation', to provide a better picture (not partial) of program.	Requested edit accepted.



Commenter	Location	Comment	Action Taken
Larry Guenther, Stevens County Board of County Commissioners	Page 7-1, Recommendations (in box)	In the little box outlining recommendations, it states "Promote and support for storage projects initiated by individual entities, especially in the Chamokane Creek subwatershed". On Page 7-4, Recommendation WS-3 is much more generic and does not mention Chamokane Creek subwatershed specifically. The wording in either or both should be clarified and/or made consistent. Support for project in Chamokane Creek would be great. Storage projects could alleviate the problem of high flows during the snowmelt runoff period and add water in the summer to augment low flows.	Recommendation in body of text edited to be consistent with text in box.
Larry Guenther, Stevens County Board of County Commissioners	Page 8-8, Statement of Support L U-14	(a) Delete the wording 'sustainable' in both the bullet paragraph, and in the second dash where the sentences say 'sustainable agriculture.' Stevens County does not support as written. (b) This is a good statement. Discouraging transferring agricultural water rights to support development and recreation (one right was transferred from an orchard to a golf course) and protecting these rights are very important to Stevens County.	Edits accepted except in second dash which was requested by other Planning Unit members.
Larry Guenther, Stevens County Board of County Commissioners (letter to Commissioner Richard)	General Comment	Funding: Stevens County and the Spokane Reservation make up a large portion of the watershed. During the next phase, proportionate grant funding and/or other options should be considered to more adequately address the needs of these two jurisdictions. One consideration that worked well with the WRIA 59 Project was to utilize local expertise whenever possible for project coordination, instead of using professional services. The cost savings of using local professionals, which averaged 1/3 less than consulting services, was then applied to additional projects that would have otherwise not had funding for.	Recommendations IMP1 - IMP3 provide for the Planning Unit to determine and implement its structure for implementation of the Plan recommendations. Preliminary discussions at the Planning Unit in the fall of 2008 focused on topic/geographic-based subgroups implementation coordinated through a central organization to ensure a fair and equitable distribution of resources.
Larry Guenther, Stevens County Board of County Commissioners (letter to Commissioner Richard)	General Comment	Implementation: If we are to be successful in moving the watershed plan into the implementation phase, we must find a way to provide equity with funding and projects that will respect the natural differences between the tribe, our rural and urban counties, as well as others.	Recommendations IMP1 - IMP3 provide for the Planning Unit to determine and implement its structure for implementation of the Plan recommendations. Preliminary discussions at the Planning Unit in the fall of 2008 focused on topic/geographic-based subgroups implementation coordinated through a central organization to ensure a fair and equitable distribution of resources.
Larry Guenther, Stevens County Board of County Commissioners (letter to Commissioner Richard)	General Comment	Leadership/Administrative Oversight: We feel it is important for Phase 4, the implementation phase be managed by local jurisdictions accordingly. In the case of Stevens County, we would recommend developing an interlocal agreement with the Stevens County Conservation District for the portion of the Phase 4 grants to help administer project coordination within Stevens County.	Recommendations IMP1 - IMP3 provide for the Planning Unit to determine and implement its structure for implementation of the Plan recommendations. Preliminary discussions at the Planning Unit in the fall of 2008 focused on topic/geographic-based subgroups implementation coordinated through a central organization to ensure a fair and equitable distribution of resources.
Larry Guenther, Stevens County Board of County Commissioners (letter to Commissioner Richard)	General Comment	Citizen Participation: The effort to involve citizens in the planning process has been noteworthy. However, it has come to our attention that several of those of those who have participated in the project have felt that their input has had very little significance, thus they have exited the process. Perhaps public participation by those who live throughout the watershed can be enhanced throughout the implementation phase by coordinating projects more closely with local jurisdictions as mentioned above.	Noted. If implementation projects are coordinated at the local level, there is likely to be more public participation.
Lloyd R. Brewer, City of Spokane	General Comment-Adjudication Recommendation	Finally, you should know that in our most recent Study Session with the City Council some concern was raised about the adjudication recommendation. The Council has asked for more information on the topic. I am not asking you to remove that recommendation at this time, but I am telling you that I may not be able to support it in the final document when all is said and done.	Noted
Lloyd R. Brewer, City of Spokane	Instream Flow Appendix	We have one requested edit – that you ensure that the Instream Flow appendix, including the City’s position on instream flows at the Spokane Gage, is included as a physical part of the Watershed Plan	We will do this.
Sara Hunt, Department of Ecology	Implementation Matrix, LU-16	Please include WDFW as a supporting entity for this recommendation. The planning unit should be listed as the lead/sponsoring entity. While WDFW may provide technical support if resources are available, it does not typically initiate or coordinate these types of studies.	Requested edit completed
Sara Hunt, Department of Ecology	Implementation Matrix, LU-4	“The State should provide technical support and funding to counties and cities to identify areas of strained water resources.” This table lists DOH as a lead entity. Please change this DOH reference to a supporting entity in principle.	Requested edit completed
Sara Hunt, Department of Ecology	Implementation Matrix, TI-5	Please include Ecology as a supporting entity for this recommendation. The lead/sponsoring entities should be those that advocate a gauge at this location, such the City of Spokane, Avista, and Spokane County.	Requested edit completed
Sara Hunt, Department of Ecology	Implementation Matrix, WFN-5	“Establish a program to collect data and evaluate where permit-exempt wells are a concern.” This table lists DOH as a supporting entity with funds but the text for this recommendation on page 6-8 does not mention DOH. Please remove this DOH reference in Table 13-1.	Requested edit completed
Sara Hunt, Department of Ecology	Implementation Matrix, WRA-1	“WRA-1: Adjudicate water rights in WRIA 54, including Spokane Tribal rights, considering streamlined adjudication approaches that are workable and will speed the timeline for this effort. During adjudication evaluate the database structure utilized to track water rights and ensure that it provides detailed, accurate information that facilitates the tracking of legal availability of water in the future.” Please identify Ecology as accepting this action as an “obligation”. Also, note the language on page 4-2 does not match the language in Table 13-1 (underlined text above) and should be corrected.	Requested edit completed
Sara Hunt, Department of Ecology	Implementation Matrix, WUE-1	“Coordinate water use efficiency and conservation measures in WRIA 54 through the existing RWCC and Spokane County CWSP”. This table lists DOH as a lead entity but the text for this recommendation on page 5-3 does not mention DOH. Please change this DOH reference to a supporting entity in principle.	Requested edit completed
Sara Hunt, Department of Ecology	Page 10-1; Technical Issues and Modules	The report needs to provide the dissolved oxygen water quality standard for Lake Spokane on page 10-1. It currently only lists the standard for the River (8 mg/L). The standard for the lake is no greater than 0.2 mg/L decrease below natural conditions.	Requested edit completed
Sara Hunt, Department of Ecology	Page 12-3; Technical Issues and Modules	Consideration of Options. DOH would value the opportunity to meet with city and county planning departments, councils, and commissions on an annual basis. DOH is currently evaluating how the water system plan review process is working and when this evaluation is completed it may be possible that time and resources would be available to provide annual educational opportunities. However, resources for annual education are not available at this time.	Noted
Sara Hunt, Department of Ecology	Page 13-3; 2nd paragraph; 4th line	In a general sense “shared governance” involves a sharing of the roles and responsibilities associated with water resources management in WRIA 54 all levels of government collaborating on research and information gathering, sharing input and perspectives on decision-making, and attempting to maximize consistency among governments when exercising their individual roles and responsibilities associated with water resource management in WRIA 54.	No change to text.
Sara Hunt, Department of Ecology	Page 2-6; Introduction and Background	Somewhere in the discussion of Basalt aquifers please note that because of the complexity of the eruptive history of basalts in WRIA 54, and the lack of specific hydrologic reasons to differentiate them, basalt-hosted aquifers in the WRIA are considered to belong to the same body of public groundwater, regardless of formational nomenclature.	Requested edit accepted.
Sara Hunt, Department of Ecology	Page 2-7; Introduction and Background	Please consider noting that these paleochannel aquifers are known largely, if not entirely, from drill data, and that basalt aquifers appear to discharge to the paleochannels.	No edit to Plan
Sara Hunt, Department of Ecology	Page 3-10; Introduction and Background	Please clarify on this page that the “aggressive pursuit” criterion is in RCW 90.90 Columbia River Basin Water Supply, and along with that are specific criteria for which that stored water should be devoted.	Requested edit accepted.
Sara Hunt, Department of Ecology	Page 3-2; Future Water Needs; 2nd paragraph	Meeting the demand for water in the future will likely require innovative solutions. As shown in the WRIA 54 basin-wide water balance (Table 3-1), estimated net demand for consumptive water needs is only 0.4% of the overall water resources in WRIA 54. Municipal purveyors’ inchoate (appropriated but currently unused) water rights <del>will</del> could help meet this future demand depending upon the outcome of the Supreme Court case that is evaluating the municipal water law, and <del>W</del> Water conservation and storage can be an important component in meeting current and future water supply needs.	Requested edit complete.
Sara Hunt, Department of Ecology	Page 3-7; Introduction and Background	In the first paragraph under RESULTS – Weighted Usable Area, slope is included, but probably should not be, as one of the factors considered in calculation of WUA. Slope is only indirectly considered in some default calculations of velocity and as a factor that contributes to the measured water velocities that are input into the hydraulic model.	Deleted slope
Sara Hunt, Department of Ecology	Page 3-7; Results; Weighted Usable Area; 1st paragraph	WUA incorporates the hydraulic variables of width, depth, velocity, <del>slope</del> ; substrate and cover measured in the Spokane River with the habitat needs of each species and illustrates how the habitat for each species varies with changes in flow.	Deleted slope
Sara Hunt, Department of Ecology	Page 3-8; Hydrology; 1st paragraph	<del>Comment:</del> For clarity, please include flows at the Spokane gage on August 15, 2006. That would demonstrate that flows continued at a fairly constant level and the difference listed is indeed a result of inflow rather than some freak freshet.	Clarified that flows were similar at the Spokane gauge at the time of measurement at the Gun Club.
Sara Hunt, Department of Ecology	Page 3-9; Introduction and Background	Under RESULTS – Hydrology, it would add clarity if the flows at the Spokane gauge on August 15, 2006, were also shown. That would demonstrate that flows continued at a fairly constant level and the difference listed is indeed a result of inflow rather than some freak freshet.	Requested edit accepted.
Sara Hunt, Department of Ecology	Page 4-1; Uncertainties About How Much Water Is Allocated; Background and Issues; 2nd paragraph	The Washington Department of Ecology administers water rights, which include surface and groundwater permits and certificates, water-right claims (claims to water that pre-date <del>water law</del> the current water code in the state), and permit-exempt water uses.	Requested edit completed.
Sara Hunt, Department of Ecology	Page 4-2; 1st unbulleted paragraph	In total, about 147,411 acre-feet per year of water is allocated for use in WRIA 54 in addition to unquantified amounts. More detailed information is included in the <i>WRIA 54 Phase 2, Level 1 Data Compilation and Technical Assessment</i> (Tetra Tech et al., 2007).	Requested edit completed.

Commenter	Location	Comment	Action Taken
Sara Hunt, Department of Ecology	Page 4-2; Recommendation; 1st bullet	<b>Recommendation WRA-1:</b> Adjudicate water rights in WRIA 54, <b>including Spokane Tribal rights, considering</b> streamlined adjudication approaches that are workable and will speed the timeline for this effort. <b>Comment:</b> This language does not match the more recent language in Table 13-1.	Corrected.
Sara Hunt, Department of Ecology	Page 4-3; Processing Time, 2nd bullet; 1st dash	Thirty-five <b>even</b> applications for new water rights south of the Spokane River.	Updated.
Sara Hunt, Department of Ecology	Page 4-3; Processing Time; 2nd bullet	Thirty-seven <b>nine</b> applications for new water rights:	Updated.
Sara Hunt, Department of Ecology	Page 4-3; Technical Issues and Modules	Please insert the words "Some believe" in front of the sentences "an example of this is the "use it or lose it" aspect of water rights that discourages..." and "The relinquishment rule is a disincentive for water conservation".	Requested edit completed.
Sara Hunt, Department of Ecology	Page 4-5; Recommendations; 3rd bullet	Note that all subbasins in a priority area would need to be included and that Ecology has to follow state laws to process water rights in order of application date, but can do so within a subbasin or watershed: <b>consistent with WAC 173.152 (Water right application processing priorities).</b>	Requested text added.
Sara Hunt, Department of Ecology	Page 5-2; Technical Issues and Modules	"The reclaimed water standards are included in WAC 173-219." The 1997 "Water Reclamation and Reuse Standards" are not in the WAC or RCW, it's a state guidance document (Publication #97-23). The Reclaimed Water (RW) Use Act was enacted in 1992 and codified as Chapter 90.46 RCW, Reclaimed water use. The RCW directed DOH & Ecology to develop the standards. The standards are going to be updated and incorporated into a "Purple Book" analogous to the Orange Book that describes the criteria for sewage system design, but right now the '97 standards are what we have to work with.	Deleted reference to WAC.
Sara Hunt, Department of Ecology	Page 5-2; Technical Issues and Modules	"The City of Medical Lake discharges reclaimed water into West Medical Lake to maintain lake levels and to Deep Creek for water quality purposes. " Technically, RW is not discharged to Deep Creek. You might want to simply eliminate that part of the sentence, or (even better) use the information below to provide a more complete description of the Medical Lake facilities. As the only existing permitted RW facility in Spokane County, it would be informative to include some more description here. Here is more background to work with -probably more than you need, but... for what it's worth...The Medical Lake facility was one of the first statewide to propose RW production and reuse as a means for wastewater management. The new facility came online in early 2001. Class A RW is discharged to West Medical Lake for the beneficial use of lake augmentation. RW is also used in the city's RW system for irrigating the grounds at the treatment plant. With the development of the Veterans Cemetery at the north end of West Medical Lake, the city has an opportunity to economically reuse some of its reclaimed water to provide irrigation water that would otherwise have to come from potable water supplies that are already under significant stress in this area. In addition to irrigating th	deleted reference to Deep Creek discharge; added reference to irrigation use.
Sara Hunt, Department of Ecology	Page 5-2; Technical Issues and Modules	Consider adding to the bullet re: Airway Heights: "The city will produce Class A reclaimed water that has been further treated to provide a water quality suitable for groundwater recharge basins. In the eastern region of Ecology, there are currently three existing facilities permitted for the beneficial use of groundwater recharge."	Add first sentence.
Sara Hunt, Department of Ecology	Page 6-5; Consideration of Options; 3rd paragraph; 2nd bullet	Chamokane Creek—Stream flows are declining and the only identified recent increase in water use has been via permit exempt wells. The U.S. Geological Survey (USGS) has begun a study <b>s ordered by the federal court</b> to develop a groundwater flow model of the Camas Valley and Ford subbasins (the Chamokane drainage). It is expected that this study will characterize the hydrogeology of the basin and evaluate impacts of permit-exempt well water use on Chamokane Creek flows. <b>The basin remains subject to oversight and administration by the federal court.</b>	Requested edit completed.
Sara Hunt, Department of Ecology	Page 6-7; Technical Issues and Modules	WFN-3: Please explain how this group intends to integrate with the Adjudication and the Chamokane Creek Watermaster, and what the objectives are.	This would be determined during implementation
Sara Hunt, Department of Ecology	Page 6-7; Technical Issues and Modules	Recommendation WFN-4. The Department of Health is currently evaluating the regulation programs for small water systems including the Group B program. It has not been determined how resources will be allocated for small water systems in the future. Please remove reference to changes to the Group B program until the DOH study is complete.	Resolved at 3/25/09 Planning Unit meeting
Sara Hunt, Department of Ecology	Page 6-8; Technical Issues and Modules	WFN-4 4th bullet, please replace "senior" with "existing"	Requested edit accepted.
Sara Hunt, Department of Ecology	Page 7-3; Technical Issues and Modules	"Direct injection to groundwater without recovery" is also referred to as "Aquifer Recharge (AR)" or "Shallow Aquifer Recharge (SAR)".	Added "Aquifer Recharge" to heading
Sara Hunt, Department of Ecology	Page 7-3; Technical Issues and Modules	Just a suggestion to make it even more clear that reuse is appropriate for non potable purposes only (specific to Washington State). Although it's stated in the last sentence on this page, but I think people are more comfortable and informed when this point is emphasized.	Added
Sara Hunt, Department of Ecology	Page 7-4; Nonstructural Alternatives; 2nd bullet; 4th line	Transferring water rights is closely tied with increased connectivity, because the transferred water right must come from the "same body of public water" ( <b>see 90.44.100 RCW</b> ) and often this water must be piped once it is pumped.	Requested edits complete
Sara Hunt, Department of Ecology	Page 8-4; Spokane Tribe; 2nd paragraph	The Spokane Tribe is currently involved in a study of the Chamokane watershed. The objective of the study, which is being conducted by the U.S. Geologic Survey (USGS) <b>s ordered by the federal court</b> , is to characterize hydraulic continuity and to evaluate the impacts of groundwater withdrawals on the flows of Chamokane Creek. The study results will be used by the Spokane Tribe to guide future development and water supply in the Chamokane watershed. <b>This basin remains subject to oversight and administration by the federal court.</b>	Edits accepted
Sara Hunt, Department of Ecology	Page 8-5; 1st dash	Encourage water purveyors to consider only their <b>currently</b> legally available water in designations of service areas in water system plans and updates (i.e. water rights, aquifer and watershed source capacity, and wholesale water via interties).	Edit accepted.
Sara Hunt, Department of Ecology	Page 8-6; Connection Between Land Use Regulations and Water Supply Evaluation; Background, Issues, and Consideration of Options; 1st paragraph	State law and local government codes require that local governments make determinations of adequate water supplies when reviewing plat applications and building permit applications (RCW 58.17.110 and RCW 19.27.097). However, <del>it is not clear in state law whether</del> local governments <del>is required</del> <b>are unclear as to whether state law requires them</b> to include in <del>its</del> <b>their</b> subdivision codes a water supply evaluation that extends beyond short-term yield to long-term water availability.	Edit accepted.
Sara Hunt, Department of Ecology	Page 8-6; Connection Between Land Use Regulations and Water Supply Evaluation; Background, Issues, and Consideration of Options; 4th paragraph; 3rd line	In addition, proof of potable water supply is required for <del>land division</del> <b>dividing parcels into units</b> of less than 20 acres.	Edit accepted.
Sara Hunt, Department of Ecology	Page 8-6; Connection Between Land Use Regulations and Water Supply Evaluation; Background, Issues, and Consideration of Options; 5th paragraph; 1st line	In Lincoln County, proof of potable water supply is required for <del>land division</del> <b>dividing parcels into units</b> of less than 20 acres.	Edit accepted.
Sara Hunt, Department of Ecology	Page 8-7; 1st paragraph	It is important to note that in all three counties the health district's main objective is protection of human health and not regional long-term water supply concerns <b>nor legal availability.</b>	Edit accepted.
Sara Hunt, Department of Ecology	Page 8-7; 2nd bullet; 1st dash	A letter from a water purveyor stating they will serve the proposed subdivision. If a plat is not developed for a specified amount of time, this commitment may need to be <del>verified</del> <b>reconfirmed by the water purveyor.</b>	Edit accepted.
Sara Hunt, Department of Ecology	Page 9-1; 1st paragraph	The terms "instream flow" and "minimum flow" are used by Ecology to describe a type of water right for a stream or river. The purpose of defining instream flow is to ensure that stream flow remains in the river to support instream water needs, usually focused on fish, <b>but also supporting aesthetic, recreational and other instream benefits</b> . These instream flow water rights do not affect rights for out-of-stream uses that existed before the instream flow was set (with the exception that any request for change to an existing water right could only be approved if it were shown not to impact any other water rights, senior or junior, including the instream flow), however they do impact water rights <del>issued</del> <b>established</b> after the instream flow is set. These "junior" water rights may be asked to curtail water usage during times when stream flows drop below the established instream flow <b>Comment:</b> "issued" suggests it only affects permits or certificates and it also affects permit exempt wells.	Suggested edit accepted.
Sara Hunt, Department of Ecology	Page 9-3; Recommendation; 1st bullet	Statement of Position ISF-2: The Planning Unit chose not to recommend a control point at Little Falls at this time. <del>The flows required at Little Falls are pursuant to a separate agreement and should not be the basis for water right decision. Because the flows are set by this agreement, water rights conditioned to it will not be interrupted. Thus these rights would not satisfy the senior right impairment test</del> <b>Comment:</b> These concerns expressed are opinions, and should be clarified and included in the background information (inserted above).	Edit accepted.
Sara Hunt, Department of Ecology	Page 9-3; Spokane River Main Stem Below Nine Mile Dam; Background, Issues, and Consideration of Options; 3rd paragraph; 11th line	Ecology has issued a few water rights in this reach of the river, conditioned to the 200 cfs flow specified in the Little Falls Agreement, and based on limited biological assessment of instream flow needs in this reach <b>Some planning unit members believe that since the flows required at Little Falls are pursuant to a separate agreement they should not be the basis for water right decisions. Because the flows are set by this agreement, water rights conditioned to it will not likely be interrupted. However, any new water rights would be junior to established water rights, including the Spokane Tribe's (unquantified federal reserved water rights) and Avista's (hydroelectric power generation of about 7,500 cfs) and could be interrupted if insufficient water is available to fulfill those established water rights.</b> It was suggested that Ecology regulate water rights in this river reach based on the Spokane Gage.	Edit accepted.
Wes McCart, Stevens County Farm Bureau	Cover	Please change the cover picture. This picture is very misleading. It shows the Spokane River at low flows and agriculture below. Is this to lead people to believe that agriculture is the cause of low flows? There are many images that will lead toward a positive approach to watershed management, and this is a negative photo. Please help us to be positive in our efforts.	Cover photo replaced. Photo not intended to be negative, but rather to show a very dynamic and dramatic portion of the watershed that few people in the Spokane urban area see very often.
Wes McCart, Stevens County Farm Bureau	Figure 2-10	This map includes dams and ponds. The ponds probably required a dam permit and that is why they are listed. Please add ponds to the title. Also, this map should state that the identified ponds are not necessarily on the stream or waterway. Lastly, what is the "Long Lake Crescent?" Several of us on the planning unit are unaware of this. Please add language to explain the Long Lake Crescent as there is no mention of it in the current plan.	Looking up requested information
Wes McCart, Stevens County Farm Bureau	Figure 2-12	The Group D index scale (color black) does not match with the map. Please correct if possible.	Requested edit completed
Wes McCart, Stevens County Farm Bureau	Figure 2-6	There are two small clusters of population on the Spokane Reservation, please identify these with a name. I believe on is Wellpinit, but I am not sure of the other. Wellpinit should be named as it is the headquarters of the reservation.	Requested edit completed
Wes McCart, Stevens County Farm Bureau	Figure 2-7	This figure is deceptive. Much of the area south of the Spokane River is shaded, and much of the area north of the Spokane River is left blank. This picture would lead one to believe that much ground water can be found in the south, yet the north lacks ground water. Please add a note to the figure that states: Identification or lack of identification, of an aquifer does not necessarily mean ground water is available, or not available.	Requested edit completed

Commenter	Location	Comment	Action Taken
Wes McCart, Stevens County Farm Bureau	Figure 6-2	What does this map show me? If it indicates areas of strained water by the boxed names, please add that to the legend.	Requested edit completed
Wes McCart, Stevens County Farm Bureau	General Comment	I have an overriding concern that this plan has not fully or adequately addressed all of the requirements of the law (RCW 90.82). If this plan has met the requirements, they should be summed up in a few pages, with the detail in each chapter. For example, the law speaks to local goals and objectives, as well as strategies (which may be recommendations or obligations). Where are the objectives? Where is the discussion on the elements of the law and pointing to these elements being fulfilled? Please review the plan for all the necessary elements in the law and add the discussion to detail these.	Requested edit completed
Wes McCart, Stevens County Farm Bureau	General Comment	Please add an executive summary to this plan. An executive summary will be extremely important as this plan gets review for approval to the elected officials and the public that may be involved in that process.	Requested edit completed
Wes McCart, Stevens County Farm Bureau	General Comment	A major goal or objective that seems to be missing is to "open" the Chamokane subbasin and manage the water as set by instream flows. If the basin has an instream flow rule, why are water right applications not being addressed and Ecology relying on SWSL letters? I believe there are some strategies that speak to this concern, but it is never stated. Please add this item as a goal objective.	Recommendation WFN-3 provides a mechanism for a local subcommittee to develop ways to resolve water issues in the Chamokane area. The ongoing USGS study will also provide additional data that may influence water appropriation decisions.
Wes McCart, Stevens County Farm Bureau	General Comment	Where are the obligations for each chapter? All of the strategies are listed in each chapter as recommendations. No obligations are listed. Each obligation should be listed as such in the chapter, or the section retitled as Recommendations/Obligations. Also, there should be one page to turn to that lists all of the obligations for the plan. Please add this detail.	Each item will be labeled within the chapter where it is described, and in the implementation matrix as an obligation, recommendation, or suggestion.
Wes McCart, Stevens County Farm Bureau	General Comment	Please have the planning unit consider adding an obligation to have all local legislative authorities incorporate all applicable information from this Watershed Plan into other local planning/land use documents, to preserve the success of the Watershed Plan, and to use the Plan information as a preference in land use elements related to water resources as appropriate. (i.e. - Those planning under GMA add this to their comprehensive plan.)	Many of the recommendations in Chapter 8 speak to this. The Planning Unit discussed these recommendations at length. Spokane County provided very specific commitments for itself, while Lincoln and Stevens County preferred more general recommendations.
Wes McCart, Stevens County Farm Bureau	General Comment	Please add a bibliography section to the plan. Reference is made to other documents, but addition of this section would add detail needed to find backup or more specific information as required.	Added
Wes McCart, Stevens County Farm Bureau	General Comment	Please describe what weight obligation and recommendations have in the plan as per the law. This will help those readers and users of the plan better understand how these relate to water resources management. Also, what weight if any do suggestions, or statements of support hold? Suggestions and statements of support/position are not referred to in RCW 90.82, so how are these to be viewed? How will they be implemented in the future and under what timeline? Please add this to the above description in the plan if suggestions or statements of support/position remain. I believe that these statements should be reworded into recommendations/obligations.	Requested edit completed
Wes McCart, Stevens County Farm Bureau	General Comment	Please check the plan for internal inconsistencies. There are many conflicting/confusing references that contradict throughout the plan. I will try to point out the ones I could find in specific comments, but a general check for consistency to outside documents would be welcomed.	Noted
Wes McCart, Stevens County Farm Bureau	General Comment	All bullets or dashed items should be numbered or lettered for better reference.	Requested edit completed
Wes McCart, Stevens County Farm Bureau	General Comment	There is no relation from the Mission Statement/Goals/Objectives to the Recommendation/obligations even in the implementation matrix. Please add a section that provides this detail relationship.	Requested edit completed
Wes McCart, Stevens County Farm Bureau	General Comment	Is there a ranking of priority for the recommendations in each section? Please provide detail as to how they were ranked, or that they are in random order with no priorities. If they are ranked, please provide the recommendations in order of priority throughout the plan.	Recommendations have not been prioritized. This will be done in the first year of Phase 4.
Wes McCart, Stevens County Farm Bureau	General Comment	Are the dashes below each recommendation part of the recommendation or separate? Why are they separated out? Please provide an explanation. It seems to be apparent that where a recommendation has several dashes or subparts that the recommendation is actually the objective, and the dashes individual recommendations. Please have the Planning unit explore this option of objectives and recommendations versus recommendations and suggestions. The working groups put much more emphasis on each idea than a suggestion.	Format modified to address request. Obligations, recommendations, and suggestions are individually labeled.
Wes McCart, Stevens County Farm Bureau	General Comment	Bulleted recommendations in blue boxes do not always agree with the actual wording of the recommendation as stated in the chapter. Consider deleting boxes, or at least correct for accuracy and consistency.	Recommendations in text boxes updated to be consistent with text of Plan.
Wes McCart, Stevens County Farm Bureau	General Comment	Yellow shaded area show where plan is incomplete. How are we to comment on the draft plan if parts are still in draft stage or missing? These sections should be made available for future comment.	Resolved at 3/25/09 Planning Unit meeting
Wes McCart, Stevens County Farm Bureau	General Comment	Very little time (if any) was given for the planning unit to review the Watershed Plan as a whole. In the working draft major sections were being added and reworked. Therefore, the members of the planning unit have not been able to take a holistic view of the plan. This is why many comments for the addition of recommendations are being made in the comments below. These are missing components that should be discussed and added.	A 6-week public comment period was agreed to at the 1/28/09 Planning Unit meeting.
Wes McCart, Stevens County Farm Bureau	General Comment	Clarity needs to be given throughout this plan that the Chamokane Creek watershed includes both the Ford and Camas Valley subbasins. Please provide this detail where appropriate.	Requested edit completed
Wes McCart, Stevens County Farm Bureau	General Comment	I would like to thank Spokane County and their staff for the difficult and thankless task as lead agency in the WRIA 54 planning process. I believe the job they have done has been terrific, and they have tried to treat everyone with the utmost in fairness. I do however believe that a county, any county, serving as a lead entity in a multi-county watershed has hurdles that are difficult, if not impossible, to cross because of legislative boundaries and responsibilities to their own county. I also believe that the urban and rural differences within the watershed complicate this process further. We have seen several WRIA's split over the same types of issues. I do not believe the option of splitting serves the watershed as a whole or the citizens who live and work around the Spokane River drainage. I would like to suggest that the planning unit consider asking a more neutral party, such as one or more of the conservation districts or perhaps a regional entity to take the lead in the future. I also believe that as the Implementation Plan is developed, the planning unit consider an even more regional approach to multiple	Recommendations IMP-1 - IMP-3 provide for the Planning Unit to determine and implement its structure for implementation of the Plan recommendations. Preliminary discussions at the Planning Unit in the fall of 2008 focused on topic/geographic-based subgroups implementation coordinated through a central organization to ensure a fair and equitable distribution of resources. Exploring a more regional approach or a different lead entity are reasonable discussion items.
Wes McCart, Stevens County Farm Bureau	Page 10-1, Water Quality	Please add a discussion about the Arsenic problem in the water on the Spokane Reservation in this section. A previous comment address that this section was the appropriate place for this concern. The planning unit should also discuss the need to add a recommendation to address this issue.	Requested edit completed
Wes McCart, Stevens County Farm Bureau	Page 10-1, Water Quality	Please add a recommendation to: <u>Eliminate septic tanks replace them with a sewer system in the Lake Spokane UGA.</u> Many discussion surround phosphorus in Spokane River and this is an important issue that may help solve the problem and contribute to the overall water quality.	Added as "action to consider in implementation" under Recommendation WQ-1.
Wes McCart, Stevens County Farm Bureau	Page 10-1, Water Quality	Please add an obligation (recommendation) to: <u>Ecology shall keep the planning unit updated on all TMDL and clean up plans within WRIA 54.</u>	Discussed and agreed to at 3/25/09 Planning Unit meeting
Wes McCart, Stevens County Farm Bureau	Page 10-2, Statement of Support WQ-2	Please change this to a recommendation. Reword to delete "support" and add <u>recommend continuing</u> to the front of the first sentence.	The Planning Unit discussed whether this would be a recommendation or statement of support. Every recommendation needs an identified lead/sponsoring entity to actively pursue implementation. If a lead was identified for this item, the Planning Unit may support changing it to a recommendation.
Wes McCart, Stevens County Farm Bureau	Page 10-3, Recommendation WQ-3	Please add to the end of this recommendation to: <u>Encourage all members to be on the e-mail list. Ecology is obligated to add all willing members to the e-mail distribution lists.</u>	Requested edit completed
Wes McCart, Stevens County Farm Bureau	Page 10-5, Statement of Support WQ-5	Please change this to a recommendation. Add the words: <u>recommends continuing actions that after "the planning unit."</u> This action is extremely important to the local citizens in the Chamokane Basin. It also recognizes the work done previously as required by law.	The Planning Unit discussed whether this would be a recommendation or statement of support. Every recommendation needs an identified lead/sponsoring entity to actively pursue implementation. If a lead was identified for this item, the Planning Unit may support changing it to a recommendation.
Wes McCart, Stevens County Farm Bureau	Page 10-7, Statement of Position WQ-6	Please change this to a recommendation. Each dash under this item should be a separate recommendation. The planning unit should have an objective that all of these items fit under. On dash two, please switch the order of "ordinances and incentives" to read <u>incentives and ordinances</u> . Also, what is meant by the parenthesis in the last line? This seems to be unfinished. All agricultural activities should be exempt from any land clearing or grading ordinances. They should be allowed to plow, till, and perform other agricultural practices without interruption or interference. They should however be encouraged to use BMP's.	The Planning Unit discussed whether these items should be separate recommendations. It was previously concluded that they would fall under the umbrella of Statement of Position since they are already being implemented as part of a formal stormwater program.
Wes McCart, Stevens County Farm Bureau	Page 1-1, first paragraph, last sentence	The sentence states "... outlines recommendations for future management..." I believe the use of the word "recommendations" in this sentence means Recommendations, obligations, statements of support, and other. Please change this sentence to read "...outlines <u>strategies</u> (in the form of obligations, recommendations, etc.) for future management..."	Requested edit completed
Wes McCart, Stevens County Farm Bureau	Page 1-1, Study Area Overview, second paragraph, third sentence	This sentence mentions only two tributaries that have year-round flows. This is true if that they are the only wholly contained streams with year-round flow, but this is not stated. This is also inconsistent with page 2-9 and figure 2-11 which lists Latah Creek and the Little Spokane River. Also, see page 2-1, third paragraph, last sentence where the Little Chamokane is missing.	Clarified that this is tributaries within WRIA 54, since Latah and Little Spokane are separate WRIs.
Wes McCart, Stevens County Farm Bureau	Page 1-10, Table 1-2, Hydroelectric FERC Relicensing	There are only three dams listed, yet there are five dams in Washington and one in Idaho. The ones missing are Upriver, Upper Falls, and Monroe Street. Are these dams involved in the FERC relicensing? If so, please add. Also, there is Little Falls Dam which is not part of the relicensing, but that should be mentioned. Further, I do not see any discussion on the FERC process and how it relates to instream flow setting or the plan in general. This discussion should be added.	The listed dams are those involved in the current relicensing.
Wes McCart, Stevens County Farm Bureau	Page 11-1, Background and Issues, third sentence	This sentence states that "the planning unit has prioritized the information needs considered below..." Is Table 11-1 in priority order? Has the planning unit discussed this order? As a member, I do not recall any prioritization within this plan. Please clarify this statement and address the issue that while these may be important they are in no priority order. Please discuss this with the planning unit if an order is desired and can be agreed on.	No prioritization was done. Word "prioritized" replaced with "identified key information needs"



Commenter	Location	Comment	Action Taken
Wes McCart, Stevens County Farm Bureau	Page 1-11, Table 1-2, Chamokane Creek Watershed Plan	Please add "County" after Stevens in Entity Lead.	Requested edit completed
Wes McCart, Stevens County Farm Bureau	Page 1-11, Table 1-2, Natural Resource Conservation Plans	There is not enough detail to how these relate to the watershed plan and what these plans do. Please add more detail about the process. Also, add "County" after Spokane in the entity name. And, what about Lincoln County Conservation District?	Added "Counties", but did not increase level of detail, as it is comparable to other table content.
Wes McCart, Stevens County Farm Bureau	Page 1-11, Table 1-2, Shoreline Master Program update process	There is confusion here about the Master Shorelines Program and Shorelines Plan updates. Watershed planning is under the shorelines division of Ecology, but also oversees Shoreline plans. Please clarify the intent. Also, what is meant by "Implementation of updated Shoreline Master Program will support WRIA 54 Watershed Plan recommendations?" Please explain. Those Plans are currently being updated by the City and County of Spokane, so how will this work?	Intent is Shoreline Master Programs; see revised text.
Wes McCart, Stevens County Farm Bureau	Page 11-2, Table 11-1, first item	Under aquifer characteristics, there is a mention to the upper and lower aquifers of Chamokane Creek. This does not include any aquifers in Camas Valley. Please restate this to say <u>the Ford Subbasin within the Chamokane Creek Watershed.</u>	Requested edit completed
Wes McCart, Stevens County Farm Bureau	Page 11-5 & 6, Recommendation TI-2	Please change this to an objective and make all dashes recommendations. Dash two is of high priority to establish areas of strained water resources. This should be done for all subbasins within the WRIA. Please make the appropriate changes.	Dashes are possible scope of study to enable easier preparation of grant applications or other funding requests. Clarified in text.
Wes McCart, Stevens County Farm Bureau	Page 11-6, Recommendation TI-3	If you take the comment above, this recommendation can be deleted. Any supply and demand forecast should be for the entire WRIA.	Dashes are possible scope of study to enable easier preparation of grant applications or other funding requests. Some Planning Unit members envisioned the need for the second type of study. Clarified in text.
Wes McCart, Stevens County Farm Bureau	Page 11-6, Recommendation TI-4	This recommendation mentions "for prioritized WRIA 54 tributaries." Has the planning unit prioritized the tributaries? Where is this located? Please provide detail or rephrase.	No prioritization has been completed. Text edited to convey that prioritization would be needed.
Wes McCart, Stevens County Farm Bureau	Page 11-6, Recommendation TI-5	Please delete this recommendation. This should be part of any on going discussions for setting instream flows.	The Planning Unit discussed this and decided to recommend evaluating establishing a gauge at this location. No change to Plan.
Wes McCart, Stevens County Farm Bureau	Page 11-6, Statement of Support TI-8 & 9	Please combine these two statements and change them to a recommendation. Delete the last line of TI-8 as it is meaningless or missing parts. Also, add that: <u>all data that is collected be shared with the planning unit.</u>	Requested edit completed.
Wes McCart, Stevens County Farm Bureau	Page 1-2, Watershed Planning Overview, first paragraph, second sentence	This sentence states "...governments, as well as citizens, to..." which seems to indicate that citizens can participate in the process. This is not the intent of the law. RCW 90.82.005 states "...to provide local citizens with the maximum possible input concerning their goals and objectives for water resource management and development." Throughout the law, the local citizens are given the emphasis recognizing the authority granted to agencies and local governments ability to govern legal decisions. Please change this sentence to reflect the intent in the law given to citizens.	Requested edit completed.
Wes McCart, Stevens County Farm Bureau	Page 12-2, Table 12-1	Under the heading "Water Management Education," please add the <u>Stevens County Water Conservancy Board</u> and <u>NRCS</u> . Under the other two headings please add <u>NRCS</u> .	Requested edit completed.
Wes McCart, Stevens County Farm Bureau	Page 12-3 & 4, Land Use	Please add <u>the Stevens County Water Conservancy Board</u> to dash one. They currently do a lot of outreach and education, including to real estate agents. Please add <u>forestry organizations</u> to the end of dash three. Please add the Spokane Tribe to the last dash.	Requested edit completed.
Wes McCart, Stevens County Farm Bureau	Page 12-3, Water Management	Please add <u>the Stevens County Water Conservancy Board</u> to dash two. They currently do a lot of outreach and education.	Requested edit completed.
Wes McCart, Stevens County Farm Bureau	Page 12-4, Recommendation EDU-2	Please change this to read: <u>Conduct a water resource educational needs assessment in WRIA 54.</u>	Requested edit completed.
Wes McCart, Stevens County Farm Bureau	Page 12-4, Recommendations	Please delete the last two sentences of this paragraph. We should not have any gate keepers in outreach and education efforts. Many of the educational efforts done in the Chamokane basin have been done with coordination or through the Stevens County Conservation District. We have done this because they are seen as a neutral party. I oppose interjecting other entities into the process that may hamper good efforts. While I support the Spokane River Forum, many individuals have reservations because of certain memberships, and in some cases these are the people we are trying to reach.	The Spokane River Forum and RWCC were identified as appropriate coordinating/clearinghouse organizations for some, but not all activities, as specified in the language "to the extent possible". This is not intended to place those organizations in a gatekeeper role, but rather encourage coordinated efforts for cost-effectiveness and consistency of message.
Wes McCart, Stevens County Farm Bureau	Page 12-4, Statement of Support EDU-3	Please change this to a recommendation.	Discussed - not changed.
Wes McCart, Stevens County Farm Bureau	Page 13-1, Watershed Plan Adoption Process	Please add a discussion on ho approval of other legislative authorities outside of the counties will handle plan approval, i.e. Spokane Tribe, City of Spokane, etc. Also, the last yellow highlight has the SEPA listed as "Appendix B." Please state that the <u>SEPA</u> analysis is included in <u>Appendix C</u> . Please correct for consistency.	This has not been discussed. SEPA analysis is Appendix B. Preliminary draft of SEPA analysis was titled Appendix C; it has now been changed to "B".
Wes McCart, Stevens County Farm Bureau	Page 13-2, Recommendation IMP-1	Please change this recommendation to include the following points. The current MOA does not handle the multi-jurisdictional nature of this WRIA. The process going forward into implementation needs to function across county, city, and tribal lines and deal with the multiple nature of WRIA 54 as a whole. We also must face the fact that urban and rural differences must be put aside to function as one entity. I recommend that a new MOA be put together that addresses these difficulties.	Requested edits completed.
Wes McCart, Stevens County Farm Bureau	Page 13-2, Recommendation IMP-2	Please delete this title as a recommendation and move this language, including the bulleted items below it to directly under IMP-1. Further please give this section the subtitle of: <u>Framework for Implementation</u> . I believe that switching the order of the first and second parts of this page give a more logical and fluid direction as the planning unit moves into the next phase and beyond.	Requested edits completed.
Wes McCart, Stevens County Farm Bureau	Page 13-3, end of first section	Please add to this first section some discussion about Ecology not representing the state caucus in phase 4 and beyond. Further, please include language that states the planning unit may develop MOU/MOA's with other agencies as the need arises. It may be advantageous to have a MOA with WDFW as instream flow work progress as an example.	Requested information added.
Wes McCart, Stevens County Farm Bureau	Page 13-3, first paragraph, first sentence	This sentence states that "since state funds 'will likely not be' available after year five of phase 4..." We do not know this. Several of us across the state, including individuals, organizations, Ecology staff, and elected officials, have been working on extended funding, but the current financial situation has complicated this effort. This does not mean we will not have success in the future. Please change it to read: <u>Since state funds are currently not available after year five of phase 4...</u>	Requested edit completed
Wes McCart, Stevens County Farm Bureau	Page 13-3, Recommendation IMP-3	Please make this an obligation. Please add language to include <u>the shared governance concept and cooperation</u> as part of this obligation of a MOA. The current signed MOA for WRIA 59 Board, WMP, Stevens County, and Ecology can be used as a starting point. The planning unit should make every effort to define shared governance.	In Plan as existing obligation. Added as obligation for Ecology per discussion with Sara Hunt.
Wes McCart, Stevens County Farm Bureau	Page 13-3, third paragraph, last sentence	Please add to the end of this sentence that: <u>this will be the second order of business.</u> (The first order being the implementation plan itself.)	The Planning Unit has not discussed the priority of its business in Phase 4. No edit to Plan.
Wes McCart, Stevens County Farm Bureau	Page 1-6, Phase 3 Watershed Plan Development, first paragraph, fourth sentence	The order in which these are listed in the sentence should match the order they are listed on page 1-7 and 1-8. Also, how do these listed issue categories relate to the RCW elements of quantity, quality, instream flow, and habitat (which we did not choose to do)? A detail description of this relationship should be described. Please add the necessary detail and ordering.	List re-ordered to match order. Description of linkage to RCW elements will be added. WRIA 54 included planning elements: water quantity (required), and water quality, instream flow (optional). The habitat element was not chosen.
Wes McCart, Stevens County Farm Bureau	Page 1-7, Mission Statement (multiple comments)	How do the technical modules or categories in each chapter relate to the mission, goals and objectives? There seems to be no correlation and there should be. Please add language to clarify the relation. Goals are listed, but no objectives are given. Please refer to RCW 90.82.005 Purpose that states goals and objectives. Objectives must be added to comply with the law. This section should state where the planning unit wants to go and what they are trying to accomplish. It is never stated. Please add a discussion, detail, and/or a reference to goals, objectives, and strategies. I have been involved in the planning and when I read the first goal of "balance the needs of instream and out of stream uses," I have to ask how am I meeting this goal? There should be a clear path given and there is not. Please provide the detail for this path. Instream Flow is not listed. Are there any goals for instream flow and if so please state.	At 3/25/09 Planning Unit meeting, Planning Unit discussed and determined not to add objectives to the Plan, but to consider developing objectives for implementation actions in Phase 4. Also, please see Appendix E, which provides linkage between legal requirements, Plan goals, and Plan recommendations.
Wes McCart, Stevens County Farm Bureau	Page 1-9, Table 1-2, Columbia River Management Program	Please add the word "aggressively" in front of pursue to be consistent with the law and other parts of the plan.	Requested edit completed.
Wes McCart, Stevens County Farm Bureau	Page 1-9, Table 1-2, Idaho Water Rights Adjudication	Please change the "Rathdrum prairie-Spokane Aquifer" to "Spokane Valley-Rathdrum Prairie (SVRP) Aquifer" for consistency.	Requested edit completed
Wes McCart, Stevens County Farm Bureau	Page 2-1, Climate	This section is misleading and more detail should be added. While the paragraph gives an accurate picture of the overall average of rainfall, the watershed has large variations in with the north being wetter and the south being drier. Please add some detail or comments to explain the variations and trends in precipitation and temperature in subbasins or general subregions. Also, please add figure 2-2 to this section prior to Land Uses.	Added additional detail.
Wes McCart, Stevens County Farm Bureau	Page 2-1, Watershed Overview	Please add table 2-1 to the end of this section before the climate section for easier understanding.	Table moved.
Wes McCart, Stevens County Farm Bureau	Page 2-1, Watershed Overview, first paragraph, first sentence	Please reword this sentence for it sounds as if only 3 cities and the Tribe live within the watershed. It also does not mention Fairchild air base and the daily influx of people. One possible suggestion is: WRIA 54 encompasses portions of Spokane, Stevens, and Lincoln Counties, and contains all or a portion of the cities Spokane, Medical Lake, and Airway Heights, as well as Fairchild Air Base, and most of the Spokane Indian Reservation.	Requested edit completed.
Wes McCart, Stevens County Farm Bureau	Page 2-1, Watershed Overview, second paragraph, last two sentences	I believe these sentences mischaracterize agriculture in Southern Stevens County. There is a large portion of WRIA 54 north of the Spokane River that is in agricultural practices. Most of this occurs in the valleys, but it is spread throughout the area. Also, water and soil types do not tend to be a limiting factor as the last few words state. Please reword this as agriculture is a major land use and a large part of our economy north of the Spokane River.	Reworded per Larry Guenther suggestion.

Commenter	Location	Comment	Action Taken
Wes McCart, Stevens County Farm Bureau	Page 2-1, Watershed Overview, third paragraph, last sentence	Please add the Little Chamokane Creek to this sentence for consistency and accuracy.	Requested edit completed.
Wes McCart, Stevens County Farm Bureau	Page 2-10, Aquatic Life in WRIA 54	The only thing mentioned in this section regarding aquatic life is fish, so please retitle section or add to the discussion other forms of aquatic life. Did the Spokane Tribe provide any of this information for table 2-5? If so, please give them credit, if not, please obtain information from the Tribe to include. Why are just certain fish listed? Explain. Please include language in this section as to why these certain fish are listed. Are they critical or sensitive species? Also, please include language stating that this is not a complete list of fish. Many game fish important to the local fisherman are not included on this list. Why? According to The Spokane River Forum 2009 Conference, fishing is a very important aspect of the Spokane River and some discussion on this should be included in this section. If fisheries are important to the locals, watershed management, and especially instream flows, should dictate a further discussion on the topic. Four listed species on the table warrant further discussion. These four species include the Redband Trout, Kokanee, Sturgeon, and Chinook. There are two hatcheries on the Spokane Indian Reservation, one operated by the Tribe and the other by WDFW. Please add language here that clarifies that the "Category 3 - No information submitted." This is very confusing. Please add language here that clarifies that the "No information submitted" is the category. One possible suggest is to add: (This category is used when no information is submitted or obtain by Ecology.)	Section retitled. Information for Table 2-5 provided by the Spokane Tribe and WDFW. Table updated to include information additional information agreed upon by Spokane Tribe and Avista. Because the WRIA 54 Watershed Plan did not accept the Habitat planning element, habitat data and analysis included in the effort has been limited to that provided by Planning Unit members. A more in-depth evaluation of Spokane River fisheries would be a worthwhile exercise, but is beyond the scope of this watershed plan.
Wes McCart, Stevens County Farm Bureau	Page 2-10, Water Quality, Bullet 3	"Category 3 - No information submitted." This is very confusing. Please add language here that clarifies that the "No information submitted" is the category. One possible suggest is to add: (This category is used when no information is submitted or obtain by Ecology.)	Requested edit complete.
Wes McCart, Stevens County Farm Bureau	Page 2-2, Current Land Uses, first paragraph, second sentence	Again, I believe this mischaracterizes the area in Stevens County and ignores agriculture. Most all of the valleys and some of the flat or gentle slopes hill tops are active farms and make up a large portion of Stevens County in WRIA 54. Also, there are many large farms on the Spokane Reservation, and livestock grazing is active on a major portion of the forested lands. Please revise this sentence to include agriculture and agricultural activities.	Edited consistent with edits to Page 2-1
Wes McCart, Stevens County Farm Bureau	Page 2-2, Table 2-1	Please add a total to this table. Also explain that Camas Valley and Ford Subbasins make up the Chamokane Creek Watershed.	Requested edit complete.
Wes McCart, Stevens County Farm Bureau	Page 2-3, Future Land Uses, first paragraph, last sentence (including figure 2-4)	This sentence needs to be moved to be the first sentence in this section. This is the most important point. Also, more language needs to be added to give further clarity. Figure 2-4 represents what I believe is the total build out based on current land zones. This should be stated as I believe this figure 2-4 can give a misleading picture of the future. Does this also include the build out on the Spokane Reservation? If not, please add this, or state this does not include Tribal lands. It also appears that if a residence goes on a piece of forested ground, it will no longer be forested. Much of the forested areas in Stevens County are zoned 20 acres and if a house is built, 19 acres will likely remain forested.	See revised wording: Stevens County zoning allows provides for additional low-density residential growth near Springdale in the northern portion of the watershed. Land zoned for agriculture would accommodate an estimated 90 percent increase, predominantly in the Camas Valley, Ford, and Long Lake North subbasins. Although very unlikely to occur, current zoning would allowIf these areas were developed to the full extent that the zoning allows, it would result in a nearly 80 percent decline in forested and open land areas. These possible future scenarios are based entirely on the land use zoning, which indicates allowed uses, not necessarily changes that are likely or expected
Wes McCart, Stevens County Farm Bureau	Page 2-3, Future Land Uses, last paragraph, first sentence	While agree with this sentence in general, I believe that further explanation is needed. Suncrest (Lake Spokane) and Springdale (most of which is in WRIA 59) are the only UGA's in WRIA 54 in Stevens County outside of the Reservation. Also, Lake Spokane is zoned at ¼ acre densities and most of the current development is 1 to 1-1/4 acre lots. This means a lot of infill will have to occur to get to complete build out, and in many situations, the current development will not allow for complete in-fill. Please add this to the discussion related to this subject.	Additional discussion added.
Wes McCart, Stevens County Farm Bureau	Page 2-3, Figure 2-2	Please move this figure to the section prior to Land Uses.	Moved figure
Wes McCart, Stevens County Farm Bureau	Page 2-5, Geology/Hydrogeology, fifth sentence	Please add "where there is hydraulic continuity" to the end of the sentence. Also, we do not know about all of the aquifers and how will this play into the watershed management? Please add language to clarify this.	Requested edit completed.
Wes McCart, Stevens County Farm Bureau	Page 2-5, Population, last sentence	Are the population projections within the WRIA, or county wide? What assumptions are being made? What is this based on (the source)? Please clarify. Also, please include actual numbers. The percentages are misleading, a 29% increase in Spokane would be far more people than a 55% increase in Stevens County. Therefore, without actual numbers, we could be leading people to a wrong conclusion.	These are based on the latest OFM projections, and are bulk numbers for each County.
Wes McCart, Stevens County Farm Bureau	Page 2-5, Population, third sentence	Does the estimate of 21% of Stevens County population living within WRIA 54 contain the Spokane Indian Reservation? Please clarify.	No it does not.
Wes McCart, Stevens County Farm Bureau	Page 2-5, Table 2-3	The numbers need to be checked, as they do not add up to actual. The Jurisdictional area need to say Total Jurisdictional area. Please add a column for Jurisdiction miles within the WRIA. Also, please add totals to this table.	This came up in an the first draft and was examined - the numbers should not add up as there would be double coverage in some cases (i.e. Fairchild Air Force Base is within Spokane County).
Wes McCart, Stevens County Farm Bureau	Page 2-6, Columbia River Basalt Group	The first sentence that states the percentage of total volume under the Wanapum and the Grand Ronde Formation Aquifers does not agree with the coloration on figure 2-7. They seem to be switched. Please correct, or clarify what is meant by percentage.	No, they are correct as written.
Wes McCart, Stevens County Farm Bureau	Page 2-6, Geology/Hydrogeology, Third sentence & Figure 2-7	Please add the word <u>known</u> or <u>studied</u> after primary in this sentence. Also, please add discussion that much of the area where aquifers are not located on the map may lack information on ground water and aquifers. Not all of the area within WRIA 54 has been studied for aquifers. For example, it is believed that two aquifers, an upper and lower, exist in Camas Valley. They have not been mapped, but some studies have identified these aquifers, but not mapped or quantified them. Have any extensive studies have been done on the reservation to identify aquifers? Also, there is question as to what sources of water the PUD system is tied into in the Long Lake North area. It is probable that much of the area north of the Spokane River has not been studied due to the lack of a large population or demand. Please see comment on figure 2-7, as language should be added to this section that speaks to aquifer identification and water availability.	Requested edit accepted.
Wes McCart, Stevens County Farm Bureau	Page 2-7, SVRP Aquifer	Please add to the end of this discussion the fact that the amount of net human use of water in the SVRP Aquifer region is roughly the same as the net precipitation for the Spokane River/SVRP Aquifer. The actual numbers given show precipitation to be slightly higher. This information was presented at the Spokane River Forum 2009 Conference and the source of the information was identified as available at www.idwr.idaho.gov/hydrogeologic.	No edit to Plan
Wes McCart, Stevens County Farm Bureau	Page 2-7, SVRP Aquifer, first paragraph, first sentence	Please change this sentence that starts out by saying "The most important of..." to read "The most widely used of..." While the SVRP Aquifer is extremely important, it is only the most important to the people that use it. The same could be said about any aquifer that it is most important to people that use it.	Edit accepted.
Wes McCart, Stevens County Farm Bureau	Page 2-7, SVRP Aquifer, first paragraph, third sentence	Please add part of in front of the Little Spokane River. Since the Little Spokane River joins the Spokane River at the boundary between Stevens and Spokane Counties, and much of the little Spokane River is north of the SVRP Aquifer, it is hard to see how it supplies much of the water for the river until the last portion.	Edit accepted.
Wes McCart, Stevens County Farm Bureau	Page 2-8, Chamokane Basin Aquifer System, last sentence	It is my understanding that the USGS study will also include information about the aquifer below Camas Valley and any interconnection it may have with the Chamokane Creek, and the Colville River and/or aquifers in WRIA 59.	Information added to Plan
Wes McCart, Stevens County Farm Bureau	Page 2-8, Spokane River, second paragraph, first sentence	This sentence refers to the flows at Lake Spokane (Long Lake). Where is this gage located? Is it at the dam? If it is at the dam, does it reflect the flows of the river and how? Please add this detail to the discussion.	Gauge is located on the left bank at the Long Lake Dam powerhouse. For additional information: <a href="http://waterdata.usgs.gov/wa/nwis/dv/?site_no=12433000&amp;referred_module=sw">http://waterdata.usgs.gov/wa/nwis/dv/?site_no=12433000&amp;referred_module=sw</a>
Wes McCart, Stevens County Farm Bureau	Page 2-9, first sentence	Please add language that states that these ponds are not located instream. Also, please add language as related to Long Lake Crescent. (See above comment.)	Researching Long Lake Crescent. Other edits complete.
Wes McCart, Stevens County Farm Bureau	Page 2-9, Tributaries (includes figure 2-11)	The Little Spokane River and Latah Creek are listed here which is inconsistent with page 1-1 (refer to earlier comment on consistency). Note that on page 1-1 that the Little Chamokane Creek has year round flow, but not of figure 2-11. If there is a lack of data on flows on this stream, please state so. If flow data exists from the Spokane Tribe, please include this on figure 2-11. Blue River is bulleted above figure and it should read <u>Blue Creek</u> . Please consider changing this figure to be a graduated scale to show flows of small streams and low flows more accurately.	Inconsistencies resolved. Flow data for Little Chamokane and other tributaries is not regular enough to show on this chart.
Wes McCart, Stevens County Farm Bureau	Page 3-1, Chapter 3	Please add the recent Chamokane Creek Water Quality Needs Assessment done by the Stevens County Conservation District and the Spokane Tribe to this section.	This section only summarizes work completed through the watershed planning grants.
Wes McCart, Stevens County Farm Bureau	Page 3-1, Chapter 3, first paragraph, second sentence	This sentence states that all recommendations from previous studies have been summarized in this chapter. Have these previous study recommendations been brought forward and discussed as options? What was the process? Please describe this process and how they were cross referenced. On page 3-4, the last sentence, it states that the Chamokane Creek Watershed Management Plan provides specific recommendations to correct identified water quality problems. Where in this plan are they listed? One specific of Chamokane plan is to provide stream bank stabilization projects, yet nowhere in the recommendations of this WRIA 54 plan are those brought forward. This WRIA 54 plan is to recognize all previous plans, therefore, please include the recommendations from the Chamokane Watershed Plan in this WRIA plan.	The recommendations contained in the Chamokane Creek Watershed Plan are specifically referenced in Recommendation WQ-5.
Wes McCart, Stevens County Farm Bureau	Page 3-1, Phase 2 Level 1 Assessment, last sentence	- Please expand on the meaning of this sentence. What findings? What sections? I am not sure what is meant by this sentence. Please expand on the intent.	This section provides a very brief summary of information contained in the Phase 2 Level 1 Data Compilation and Technical Assessment (final document completed in January 2007)
Wes McCart, Stevens County Farm Bureau	Page 3-1, Water Use	What assumptions are made in regards to these numbers? Please state them in this section. Are these water amounts consumptive, or nonconsumptive? Does this include the nonconsumptive use of Avista and other power generation rights? Please check these figures for accuracy and consistency. Under the permit exempt wells bullet, this is 10% of the current use and 3.9% of the allocated use, but these numbers do not agree with those on page 6-5. They also do not tell me if this allowed use, current estimated use or consumptive use after return flow is subtracted. The last sentence amount to only 38.4 % of the allocated water being in use, including exempt wells, but does not address if the other right are inchoate or other. Please explain. Further, these numbers are inconsistent with those described on page 6-1. On page 6-1, it states that these numbers exclude the City of Spokane. It is not stated here. Also, since approximately ¼ of the City is within WRIA 54, the City water rights both use and inchoate are a major factor that needs to be applied when considering watershed management. Please add clarity and consistency to this section and to section 6.	Please refer to the Phase 2 Level 1 Data Compilation and Technical Assessment for a complete discussion of all of these questions.



Commenter	Location	Comment	Action Taken
Wes McCart, Stevens County Farm Bureau	Page 3-10, first paragraph, first sentence	This sentence states that "The study found that WRIA 54 is suffering from inadequate water supply..." This is NOT accurate and is contradictory to the first sentence in paragraph three. It is also not consistent with the water balance table 3-1 that states net consumptive use is 0.4% of the water. Please restate and clarify this statement.	This is addressed throughout the Plan, particularly in Chapter 6.
Wes McCart, Stevens County Farm Bureau	Page 3-2, Table 3-1	What factors were used to arrive at the water balance? How was the Net demand arrived at? If the net demand for all human needs is at 0.4% of the total water, what significance does this have? Did the planning unit discuss this? Does this number indicate a water shortage, or possibly just a timing issue as relates to water? Did the planning unit adequately address this question and where are the recommendations for this? Please explain in this section.	Please refer to the Phase 2 Level 1 Data Compilation and Technical Assessment for a complete discussion of all of these questions.
Wes McCart, Stevens County Farm Bureau	Page 3-3, Potential Future Water Sources, first bullet	Based on this bullet, please add a recommendation that Ecology start to appropriate water now.	The Planning Unit discussed this topic and chose not to include such a recommendation.
Wes McCart, Stevens County Farm Bureau	Page 3-3, Potential Future Water Sources, last bullet	Please rephrase and consider adding this bullet as a recommendation.	Again, the context of this is within the Phase 2 Level 1 Data Compilation and Technical Assessment. The Planning Unit has included a recommendation to consider a water right reserve from the SVRP during development of and instream flow rule (Statement of Position ISF-1).
Wes McCart, Stevens County Farm Bureau	Page 3-3, Potential Future Water Sources, second bullet	based on this bullet, please add a recommendation that encourages off season appropriations and storage from high flows.	The Plan contains the recommendation (ISF-3) that instream flow analysis is a first step toward knowing whether water could be available seasonally from tributary streams.
Wes McCart, Stevens County Farm Bureau	Page 3-3, Water Quality, last bullet, Total Phosphorus	While phosphorus is being targeted, is it a TMDL? What is the State standard for phosphorus? Or is this the result of the Dissolved Oxygen TMDL? Not one of the assessments below is pointed toward phosphorus, except as component of the dissolved oxygen. Please clarify this bullet.	Phosphorus was identified years ago by Ecology as a major cause for the dissolved oxygen problems in the Spokane River.
Wes McCart, Stevens County Farm Bureau	Page 3-5, Quality Assurance Project Plans for Water Quality Monitoring, last sentence	Since a QAPP was prepared, shouldn't our priorities for projects on these two be extremely high? Where is it listed that we recommend these projects as early actions or given high priority. Please clarify, or have the planning unit address this issue.	Implementation of these QAPPs is recommended in Chapter 10.
Wes McCart, Stevens County Farm Bureau	Page 3-7, Instream Flow Study, second paragraph	There is no mention of what kind of study was done on the Spokane River. Please add to this discussion the type of study performed.	Requested edit accepted.
Wes McCart, Stevens County Farm Bureau	Page 3-7, Weighted Useable Area, second sentence	The WUA is stated to be an index of available habitat per 1,000 feet of stream. Is this 1,000 linear feet? Figure 3-1 shows an index of sq. ft. of habitat/1,000 (linear?) feet of stream. Please clarify and correct for accuracy and consistency with figure 3-1.	Yes, lineal feet. Added this to text.
Wes McCart, Stevens County Farm Bureau	Page 3-8, Hydrology, first sentence	If appropriate and accurate, please add the following to the end of the sentence: <u>that other inflows from other creeks contribute downstream of the targeted or measured areas and are not a factor for this study.</u>	I feel this would be confusing to others. No edits.
Wes McCart, Stevens County Farm Bureau	Page 3-8, Hydrology, second paragraph	While percentages are useful, they can also be misleading. Please provide actual number and number ranges to this discussion. For example, 26% of 6685 cfs is 1738 cfs. Since Instream flow discussions are usually based on flows in cfs, actual numbers help paint a more accurate picture of current average low flows (as well as high).	Edit accepted.
Wes McCart, Stevens County Farm Bureau	Page 3-8, Hydrology, third sentence	In the middle of the sentence a reference to "...the Spokane River gage at Gun Club..." is made. This is highly confusing. Is there a gage at the gun club? If not, how was the flow measured. Where are all of the gages? Please clarify. Further, please add a map of the current gages and proposed gages.	Edited to clarify that no gauge exists at the Gun Club site. Spokane River gauges are shown in Figure 2-10.
Wes McCart, Stevens County Farm Bureau	Page 3-9, Example Draft Instream Flow Recommendations	Who developed these criteria? I would state that any instream flow recommendation will be based on the requirements of the law and all pertinent scientific information. Please consider deleting this section or restating without criteria. Further, please delete "recommendations" from the last sentence as it is misleading. Our planning unit made no instream flow recommendation at this time. Please consider rewording to <u>Further discussion on instream flow is contained in Chapter 9.</u>	These were example criteria provided in the Instream Flow Technical Study. Edit accepted.
Wes McCart, Stevens County Farm Bureau	Page 3-9, Multipurpose Water Storage Study	- Prior to the bullets it is stated that "The study consists of two elements:" Please rephrase. The study consisted of four elements, two major and two minor. The Suncrest Area and the Chamokane being two minor specific parts of the study. These minor components are of extreme importance to the citizens of Stevens County and need to be added to the following discussion.	Requested edit accepted.
Wes McCart, Stevens County Farm Bureau	Page 4-1, Background and Issues, first paragraph	Please add a sentence that potential over-allocation of surface water is a concern of the Spokane Tribe in the Chamokane Subbasin.	The Spokane Tribe has not expressed this in their comments.
Wes McCart, Stevens County Farm Bureau	Page 4-1, Background and Issues, first paragraph, first sentence	This sentence talks about how much water is "allocated." Water resource management is complicated by allocation versus use or usage. Please add this to the discussion. Also, inchoate rights are of a major concern in the watershed and should be added to the list of claims, certificates, and other.	Requested edit complete.
Wes McCart, Stevens County Farm Bureau	Page 4-1, Background and Issues, last paragraph	The word "additional" should be <u>addition</u> . Please change.	Corrected.
Wes McCart, Stevens County Farm Bureau	Page 4-1, Chapter 4 Water Rights Administration	How does this chapter fit into the goals and the RCW? Was this a working group? Was this just a way to group the recommendations? Please provide some explanation as to how this section fits into the goals.	This chapter was a result of the Water Management Work Group. The issue paper developed by that group became very long, and was broken into three chapters: Ch 4, 5, 6. Linkage with goals provided in Appendix E.
Wes McCart, Stevens County Farm Bureau	Page 4-2, second bullet from the top	How does the Spokane Tribe quantified irrigation rights on Chamokane Creek relate to the setting of the instream flow? Are there other rights the Tribe holds in the Chamokane Basin, and have they been quantified. Please explain and expand on the information contained in this bullet. It will be important to provide guidance for implementation, clarity of current water users in the area, and future planning decisions.	Please refer to the Phase 2 Level 1 Data Compilation and Technical Assessment for a complete discussion of all of these questions.
Wes McCart, Stevens County Farm Bureau	Page 4-3, second set of bullets, bullet one	Does this refer to just new water rights or new rights and transfers? Please clarify. The transfer line is much shorter, and Water Conservancy Boards are an option to process changes/transfers in a timely basis.	General comment. Added "new" water rights . . .
Wes McCart, Stevens County Farm Bureau	Page 4-4, Last bullet	Please expand on the closure on Chamokane Creek. It is note that appropriation has stopped on Chamokane Creek due to the adjudication and "the SWSL." Chamokane Creek has an instream flow set and in place. Ecology should be managing the water by the instream flow, not by any SWSL. Please have Ecology explain this discrepancy. If the instream flow must be set in state WAC, or rule, to manage the subbasin by the instream flow, then I recommend adding an obligation that Ecology set an instream flow rule on the Chamokane.	Please refer to the Phase 2 Level 1 Data Compilation and Technical Assessment for a complete discussion of all of these questions. This may be an appropriate topic for the Chamokane Watershed Work Group (WFN-3) to explore in Phase 4.
Wes McCart, Stevens County Farm Bureau	Page 4-4, Relinquishment Rule	Please change the word "rule" to <u>law</u> . what is referred to as the relinquishment rule is actually a RCW (law) not a WAC (administrative code or rule).	Requested edit complete.
Wes McCart, Stevens County Farm Bureau	Page 4-5, Recommendation WRA-2	Please change this recommendation into two separate recommendations. The first being that the State legislature provides more staff and funding for <u>new water right applications</u> . The second being that the planning unit recommends <u>establishing a regional water master</u> . A water master can do compliance, but is much more than that, as they can write permit, give technical assistance and other. I oppose providing more staff for merely compliance as this recommendation now states in the first line.	Discussed and not agreed to at 3/25/09 Planning Unit meeting
Wes McCart, Stevens County Farm Bureau	Page 4-5, Recommendation WRA-4	As stated in the working draft, I oppose this recommendation and ask that it be deleted. Considering the fact that Spokane County has more participation on this planning unit and other cross jurisdictional issues, unless a mechanism is in place to allow for fairness and balance, I can not agree to this recommendation. Please delete.	This was reconsidered by the Planning Unit, and a decision to retain it was made in December or January.
Wes McCart, Stevens County Farm Bureau	Page 5-1, Background and Issues, first sentence	This sentence contains a quote. What is the reference? Please provide. Further, the quote is inaccurate. Please correct this to be the actual quote from the law. I believe the reference to be RCW 90.82.070 (2). The population and economic growth referred to at the end of the sentence is to be <u>under the requirements of the state's growth management act</u> . The watershed plans are driven or work under the constraints of GMA, that are not to drive GMA planning. "Strategies" are required by the law to be developed. Where are these strategies listed? Please provide some detail explanation as to how the planning unit has addressed the requirement of developing strategies for their goals and objectives.	Edited text to be precise language from RCW 90.82.07. Added citation.
Wes McCart, Stevens County Farm Bureau	Page 5-1, Water Conservation, first paragraph	The first and second sentence seem to be in conflict. The first sentence states that municipal water providers are "required" to develop water use efficiency. What is the Citation for this? Please provide the citation. The second sentence talks about encouraging water use efficiency. The last sentence refers to the fact that small systems are under no timeline or obligation to develop these efficiencies. Springdale is a municipality with under 1000 connections, how do they fit into this scenario? Please provide addition language to clarify this issue.	Citation added
Wes McCart, Stevens County Farm Bureau	Page 5-2, Consideration of options, first paragraph, third sentence	It state that "the purveyor "will implement" any recommendations..." Please see the comment on recommendation WUE-4. This is inconsistent and needs to be corrected.	Wording is not inconsistent, stating "if they agree to it".
Wes McCart, Stevens County Farm Bureau	Page 5-2, Consideration of options, second paragraph, second sentence	This sentence needs to be a recommendation as stated. Please discuss this with the planning unit for inclusion. Also, if we have standards for reclaimed water, why do we need more rules? See comment above, and please provide an explanation.	This work is ongoing at the state level. Statement of Support WUE-7 provides the Planning Unit's recommendation related to reclaimed water.
Wes McCart, Stevens County Farm Bureau	Page 5-2, first bullet	Please provide more detail. In what ways are the WA-ID regional dialogue addressing water use efficiency and conservation.	Detail provided.
Wes McCart, Stevens County Farm Bureau	Page 5-2, Water Reclamation and Reuse, bullets	The first bullet states that this is the only active permit, yet the third bullet state that a current pilot project is occurring. Does this have a permit? Bullet four states that it is located in the WRIA, where? Bullet five refers to several projects under consideration, where can I get information on these projects if I am interested? Please provide more detail in this section.	Ecology website is a good source of information; for projects in development stage the project proponent is probably the best source of information.
Wes McCart, Stevens County Farm Bureau	Page 5-2, Water Reclamation and Reuse, second sentence	"The state is developing 'rules' for the safe use..." A publication reference is given. Thank you for the reference, but please provide more detail as to why this rule is necessary if we have ongoing projects. A brief summary or example is called for here to get some sense of direction as to the needs and problems of water reuse and the need for a rule to clarify. Does the planning unit want input into the rule? Please have the planning unit discuss possible input or what role they will play in further discussion, and provide the results in this section.	There is much activity within the state and nationally regarding safe use of reclaimed water. I recommend starting with the Ecology or EPA website for information.

Commenter	Location	Comment	Action Taken
Wes McCart, Stevens County Farm Bureau	Page 5-3, Recommendation WUE-1	This recommendation should be an objective, with each of the dashes being recommendations, NOT suggestions. Please change. I disagree with the third dash item. If this is for Spokane only, please state. Otherwise, there should not be an ordinance, we should be using incentives. Laws should always be of last resort.	Planning Unit discussed and agreed on this format in the Fall of 2008. Added "and/or educational outreach" after the word ordinance.
Wes McCart, Stevens County Farm Bureau	Page 5-3, Recommendation WUE-2	This recommendation should be an objective, with each of the dashes being recommendations, NOT suggestions. Also, "local governments" needs to be expanded to include purveyors and individuals. Please change. What about education and outreach to achieve this? Please consider. On dash one, I suggest changing "...and thirsty grassy swale (these require irrigation)" to <u>grassy swales that require additional irrigation</u> . Dash four needs to be reworded as it talks about regulations and incentives and is very confusing. If no regulations exist, I oppose adding regulations, and in all cases incentives should be the preferred method. Please delete dash five. This plan should not be recommending plat conditions that prevent development. Again the watershed plan is to work under GMA to help provide water, not drive GMA to stop development.	No changes; Planning Unit discussed and agreed on this format in the Fall of 2008. These are just suggested items that are not binding to any participants, but were requested to include by some to capture ideas discussed for implementation.
Wes McCart, Stevens County Farm Bureau	Page 5-3, Recommendation WUE-4	Why does the planning unit want notice? What is the intent or objective in asking for notice? If the intent is to provide comment, please state this in the recommendation. Otherwise, consider deleting.	Intent or objective is to provide people the opportunity to decide whether they will choose to comment.
Wes McCart, Stevens County Farm Bureau	Page 5-3, Recommendations, first sentence	This sounds like a recommendation or an objective to have regional implement efficiency projects. Please have the planning unit discuss this as an objective.	This is a topic sentence. No changes made to text.
Wes McCart, Stevens County Farm Bureau	Page 5-4, Statement of Support WUE-6	Please change this to a recommendation. We should also support <u>continuing funding</u> for the conservation districts. Please add this intent. Local groups, such as the Stevens County Farm Bureau, provide input and emphasis in EQIP projects application ranking and this is important to continue that input with emphasis toward irrigation efficiency.	Requested edit accepted.
Wes McCart, Stevens County Farm Bureau	Page 5-4, Statement of Support WUE-7	Please change this statement to an objective with the dashes each being recommendations. Also, please change the first dash to read ... <u>support existing and new agriculture and landscape irrigation where appropriate and cost effective</u> .	See revised text.
Wes McCart, Stevens County Farm Bureau	Page 6-1, Background and Issues, bullets	These bullet percentages do not agree with those on figure 6-1 as stated. Further, the permit exemptions do not agree with previous figures given and comments made. Please correct these for consistency. Actual usage along with percentages would be welcome here also as percentages can be misleading. We are also talking about consumptive use here. Please provide some detail explanation on consumptive use and how this was arrived at. Bullet 3 is very misleading in that it combines permit exempt and small systems. It is almost as if we are trying to make a case against the use of permit exempt wells, and I definitely oppose this trend. Please correct.	Please refer to the Phase 2 Level 1 Data Compilation and Technical Assessment for a detailed discussion of this topic.
Wes McCart, Stevens County Farm Bureau	Page 6-1, Background and Issues, bullets on bottom	There is approximate 30,00 acre-ft/yr of water that is unaccounted for here. Please provide more detail and an explanation.	Please refer to the Phase 2 Level 1 Data Compilation and Technical Assessment for a detailed discussion of this topic.
Wes McCart, Stevens County Farm Bureau	Page 6-1, Background and Issues, fourth paragraph, second sentence	This statement is inconsistent with page 3-1 and the following discussion. It is a big factor to exclude the City of Spokane water right in this discussion, and a separate discussion on the City's water right is appropriate to give an accurate picture of the water use and needs. Please correct this.	Please refer to the Phase 2 Level 1 Data Compilation and Technical Assessment for a detailed discussion of this topic.
Wes McCart, Stevens County Farm Bureau	Page 6-1, Background and Issues, third paragraph, second sentence	What is 57 percent increase based on? Please provide detail, an explanation, and a reference.	Based on population projections and per capita water use.
Wes McCart, Stevens County Farm Bureau	Page 6-2, Areas of High Water Demand..., first paragraph, first sentence	Please add more narrative for figure 6-2. Does this figure identify these areas with the boxes? If so, please state this. There should be a description of each of the identified areas in the text of this section. Please add this detail. What about the Ford subarea?	Figure edited to provide more description.
Wes McCart, Stevens County Farm Bureau	Page 6-2, Areas of High Water Demand..., third paragraph, last sentence	Please provide a map of the current and future interties. Many people who see this plan will not know where Craig Road and Highway 902 are located. A map would also be helpful for management and future planning efforts.	Please refer to the Multipurpose water storage study, which provides several maps to illustrate intertie options.
Wes McCart, Stevens County Farm Bureau	Page 6-2, Figure 6-1	This figure breakdown does not agree with the previous page. Also, please add a statement to the bottom: <u>The total estimated consumptive use of 56,639 ac-ft annually</u> . Please check quantities.	Corrected.
Wes McCart, Stevens County Farm Bureau	Page 6-4 Spokane Reservation Water Systems	Please delete the statement regarding arsenic and move to the water quality section. Arsenic is a large water quality concern and should be addressed with a recommendation in the water quality section. Please have the planning unit discuss this. Also reword this section to read about the three systems with one needing more water.	The decision to include this here was based on grouping needs associated with providing municipal/domestic water. Added short section regarding arsenic problem to water quality section.
Wes McCart, Stevens County Farm Bureau	Page 6-4, Along the Spokane River...	The fourth sentence speaks of a "rural urban growth area." Please delete the word "rural" as this is a contradiction of terms. This area is also not different than many suburban areas all over the state. Also, please delete the last sentence as it is out of context and misleading.	This term is an official designation.
Wes McCart, Stevens County Farm Bureau	Page 6-4, Permit Exempt Wells	Please delete the discussion beyond the word "restriction." This summarizes the formal Attorney General Opinion. The other language, if it is added, needs to be in a separate area, and not in the bullet. Further, the director of Ecology has issued a statement stating that there will be NO interruption of existing livestock operations by the Ecology interpretation. Also, this issue is currently being discussed inside and outside of the legislature and is far from any conclusion.	please see revised text.
Wes McCart, Stevens County Farm Bureau	Page 6-4, Permit Exempt Wells, last paragraph	In the first sentence, please delete "of water purveyors." It is not just water purveyors who have an inability to obtain new water rights.	Requested edit completed.
Wes McCart, Stevens County Farm Bureau	Page 6-5, Permit Exempt Wells, first full paragraph, third sentence	It is stated that "about 11 percent of the estimated consumptive water use..." It is actually according to the figures given, 10% of total current use, 3% of the allocated water use, and only 1% of the consumptive use. This is inconsistent with other sections and needs to be corrected.	Review
Wes McCart, Stevens County Farm Bureau	Page 6-7 & 8, Recommendation WFN-4	This recommendation should be an objective, with each of the dashes being recommendations. Please consider this with the planning unit. All dashed items will need to be reworded as recommendations. On dash two, this consolidation is allowed by RCW and has policy. Please reference both at the end of the recommendation. Dash three is fine except for adding the words <u>and other</u> to the end of the yellow portion. The first dash on page 6-8 should read: <u>Support use of permit exempt wells in areas where public water service is not available</u> . Delete all language after this. Please delete the fourth dash as I can not agree with this. It is very important to the northern counties and their residents that the last two dashes be elevated to recommendations. This is a high priority and it should state that we consider water banking a high priority to retain water in the northern areas.	Planning Unit agreed on this formatting in the Fall of 2008. Please see revised format that specifies "obligation, recommendation, or action to consider in implementation."
Wes McCart, Stevens County Farm Bureau	Page 6-7, first paragraph, second sentence	Please delete everything in the sentence after the word "available." Rural areas only have the option of using exempt wells and these needs to be supported. We must develop and explore options to improve water availability where water may be short or impacts occur. Our task is to develop strategies that meet future water demand, not to limit development.	The rest of that sentence is very important to other Planning Unit members.
Wes McCart, Stevens County Farm Bureau	Page 6-7, Recommendation WFN-2 and WFN-2	Are the dashes past of the recommendation? Please clarify.	Please see revised format that specifies "obligation, recommendation, or action to consider in implementation."
Wes McCart, Stevens County Farm Bureau	Page 6-8, Recommendation WFN-5	This recommendation should be change to an objective and the dashes changed to recommendations. What is the planning unit going to do with the data collected? Also, the recommendation without the dashes is suppose to be what watershed planning is all about. The second dash needs to end after the word "subbasins" and delete the rest of the sentence. I feel that this is a high priority recommendation to get a supply and demand forecast for the entire watershed. How can you manage water if you do not know what you have and what you need? This goes well beyond a water balance and gives you the tool to manage water resources. The last dash needs to have the words "critical areas ordinance or" deleted. I support water supply overlay zones, but this is an inappropriate use of the CAO. The CAO would be used for CARA's, but not short water supplies.	Planning Unit agreed on this formatting in the Fall of 2008. Please see revised format that specifies "obligation, recommendation, or action to consider in implementation." Edit to last dash accepted.
Wes McCart, Stevens County Farm Bureau	Page 7-1, Background and Issues, last sentence	Please delete the words "desirability of" from this sentence. There is a large segment of the population that desires new dam storage, but environmental concerns has always been a consideration. There are pluses and minuses with everything.	Replaced with "ease of"
Wes McCart, Stevens County Farm Bureau	Page 7-1, Columbia River Water Management Program	The second sentence should state "...aggressively pursue development of <u>new</u> water supplies..." The fourth sentence states "...flows and cannot be used in the tributary subbasin." Please delete all language after the word "flows." This is not factual. Instream flow in the tributary is a use. The one third must remain as an instream use and cannot be used for out of stream uses. It can be stored for later release, which is another use.	Requested edit accepted.
Wes McCart, Stevens County Farm Bureau	Page 7-1, Structural alternatives	What about NEW storage options? Enhanced surface storage in the last sentence speaks to "existing features." One structural option not talked about and extremely important is new storage. Please add this option and some corresponding discussion. There seems to be some under the enhanced surface storage section that can be moved. Also, please delete interties from this section and move to section 6.	Content of this chapter is intended to link directly to the multipurpose storage assessment, which is the basis for these recommendations.
Wes McCart, Stevens County Farm Bureau	Page 7-2, Bullet one, Instream reservoirs...	Please delete or reword the second sentence. It does not make sense and if it is speaking to new dams on the Spokane River it should be specific. The last sentence speaks to new storage on the Chamokane, which should be under a different heading. There are also many other potential sites that have been identified in this subbasin.	Added reference to other possible sites in Chamokane watershed.
Wes McCart, Stevens County Farm Bureau	Page 7-3, Reclaimed Water Use, first sentence	Reclaimed water could also include captured storm water for treatment. Please add this to the discussion.	Treated stormwater is not included in the definition for reclaimed water.
Wes McCart, Stevens County Farm Bureau	Page 7-4, Increased Connectivity	This section is not about storage, but infrastructure and should be moved to chapter 6. Although not under any specific heading, keeping the second sentence in this general section would be good and appropriate.	Content of this chapter is intended to link directly to the multipurpose storage assessment, which is the basis for these recommendations and combining this evaluation with other traditional storage concepts.

Commenter	Location	Comment	Action Taken
Wes McCart, Stevens County Farm Bureau	Page 7-4, Nonstructural Alternatives, bullet Water rights transfers	The second to the last sentence mentions "...an established water bank." We currently do not have water bank authority outside of Yakima. Please correct this statement. Also, we need to make a recommendation as previously commented to that urges legislative approval and support of water banks, water trusts (water conservancy boards to administer and include ground water), and water leasing.	Added "if this option becomes available statewide"
Wes McCart, Stevens County Farm Bureau	Page 7-4, Recommendation WS-2	Please move this recommendation to Section 6 and retitle as appropriate.	Content of this chapter is intended to link directly to the multipurpose storage assessment, which is the basis for these recommendations and combining this evaluation with other traditional storage concepts.
Wes McCart, Stevens County Farm Bureau	Page 7-4, Recommendation WS-3	This recommendation seems to be inconsistent with previous discussions. Further, we should be supporting any and all viable storage options.	Consistent with recommendation
Wes McCart, Stevens County Farm Bureau	Page 7-4, Recommendations	Please add a recommendation that <u>Stevens County (could include other counties, tribe, or entities) establish a storage project data base as a management tool for future water supply needs.</u> This should be an obligation. Also, Stevens County has started this.	Per Planning Unit discussion on 3/25/09, added as "action to consider" under WS-3
Wes McCart, Stevens County Farm Bureau	Page 7-4, Recommendations	Please add a recommendation that <u>the planning unit encourages and supports small private storage projects and recommends that the legislature make changes to law to allow for this storage development.</u>	Consistent with recommendation WS-3
Wes McCart, Stevens County Farm Bureau	Page 8-1, Box of Recommendations	If the recommendation are to be list here, please add a <u>continued on next page</u> statement.	Requested edit completed
Wes McCart, Stevens County Farm Bureau	Page 8-3, WRIA 54 GMA Participation, first paragraph, last sentence	Please add the following to the end of the sentence: ..., <u>however they must address critical areas and natural resource lands designations.</u>	Check with Lincoln County
Wes McCart, Stevens County Farm Bureau	Page 8-3, WRIA 54 GMA Participation, third paragraph	Either delete this section, or add specifics for Stevens County and Lincoln County. We need to be treating each jurisdiction equally. How does this relate to the cities? They have there own policies and should also be considered. Perhaps a reference to each jurisdiction on where to find their policies would be more appropriate.	These are included because Spokane County chose to make specific commitments regarding its land use policies and administration that relate directly to the information provided here.
Wes McCart, Stevens County Farm Bureau	Page 8-4, Recommendation LU-2	Please change this to an objective and make all of the dashes recommendations.	Planning Unit agreed on this formatting in the Fall of 2008. Please see revised format that specifies "obligation, recommendation, or action to consider."
Wes McCart, Stevens County Farm Bureau	Page 8-4, Spokane Tribe, last sentence	Please restate this sentence. What jurisdiction does the Tribe have in the basin outside of the reservation? None. The entire idea behind the Chamokane Basin working group is bring all of the affected parties together to use the study results to develop management strategies for the Chamokane watershed. The Tribe only has jurisdiction on the Reservation, and by working together, the County and locals along with the Tribe can make good planning decisions respective of their jurisdictions.	Added "and other" after Spokane Tribe.
Wes McCart, Stevens County Farm Bureau	Page 8-4, Statement of Support LU-1	Please change this to a recommendation and reword to address the issues.	The Planning Unit discussed and agreed on this at the December Planning Unit meeting based on current information.
Wes McCart, Stevens County Farm Bureau	Page 8-5, Recommendation LU-3	Are the dashes part of the recommendation or other? This is very confusing. Consider rewording as an objective and corresponding recommendations. Please have the planning unit discuss this option.	Planning Unit agreed on this formatting in the Fall of 2008. Please see revised format that specifies "obligation, recommendation, or action to consider."
Wes McCart, Stevens County Farm Bureau	Page 8-5, Recommendation LU-6	Where is the local citizen involvement? I am opposed to a closed doors bureaucrat driven process for developing guidelines to show water availability. Please reword, or delete this recommendation.	This suggested item was not intended to prevent citizen participation. Clarified.
Wes McCart, Stevens County Farm Bureau	Page 8-6, Background, Issues and Consideration of Options	Please add a discussion on the Spokane Reservation to this section. Perhaps it would also be appropriate to add a discussion on the major cities and Fairchild to this section.	Background information is provided that pertains directly to Plan recommendations. Spokane Tribe general land use administration is described earlier in this chapter.
Wes McCart, Stevens County Farm Bureau	Page 8-7, Recommendation LU-13	I am opposed to the second and third dashes and ask that these be deleted. This would set precedence and under GMA neighboring plans must be consistent. I do not believe this falls within the jurisdiction of watershed planning to dictate planning, but to coordinate. This is not coordination.	This recommendation is specific to Spokane County; they have requested its inclusion
Wes McCart, Stevens County Farm Bureau	Page 8-8 & 9, Statement of Support LU-14	Please make this an objective and all dashes recommendations. Also, delete the word sustainable. On the second dash, please delete all language after the word "land." On the second dash on page 8-9, please add the words <u>or a water bank if it becomes available</u> after the word "...trust water program". In the last dash, change the word "consider" to <u>recommend</u> .	Planning Unit agreed on this formatting in the Fall of 2008. Please see revised format that specifies "obligation, recommendation, or action to consider in implementation." "Sustainable" deleted in heading and definition deleted. Second dash requested edit not accepted - this concept was discussed and considered important by other Planning Unit members. Water bank edit accepted. Last dash edit not accepted as this would be confusing since this is a suggestion.
Wes McCart, Stevens County Farm Bureau	Page 8-8, Background, Issues and Consideration of Options, second sentence	Please add the word <u>fiber</u> after the word "food."	Edit accepted.
Wes McCart, Stevens County Farm Bureau	Page 8-8, bullet 7	Please add FPA (forest practice application) administered by WA DNR.	Edit accepted.
Wes McCart, Stevens County Farm Bureau	Page 8-8, Maintaining and Enhancing Sustainable Agriculture	Please delete any and all references to "sustainable", including in the title to the section. Also, please DELETE the box that tries to wrongly define what sustainable means. This inclusion is highly objectionable and had not been discussed at any meeting. Most people who have never farmed have no idea what it takes to keep a farm sustained and in business. This is an insult to the entire farming community.	Word "sustainable" deleted from heading. Definition also deleted.
Wes McCart, Stevens County Farm Bureau	Page 8-9, Background, Issues and Consideration of Options, first sentence	Please delete the words "along Lake Spokane" at the end of this sentence. It is a large concern in portions of the Chamokane basin and other areas.	Edit accepted.
Wes McCart, Stevens County Farm Bureau	Page 8-9, Background, Issues and Consideration of Options, third sentence	What legislation is this sentence referring to? A bill was passed a couple of years ago, but vetoed by the governor stating that WDFW would take care of this. Also, I personally contacted WDFW this fall to ask about a pair of beavers that had taken up residence in a bad spot on my property and was told that WDFW does NOT relocate or trap problem beavers, and that I could hire a trapper, buy my own trapping permit, or shoot them if they were damaging my property. Please delete this sentence.	Edit accepted.
Wes McCart, Stevens County Farm Bureau	Page 8-9, Recommendation LU-16	Please delete the reference to "on Lake Spokane." As stated in a comment above, beavers can be a problem in many places throughout the watershed. The Chamokane water quality needs assessment revealed that beavers had good and bad component ant places that were appropriate, and not appropriate.	This recommendation was specifically requested by other Planning Unit members and discussed and agreed upon at earlier Planning Unit meetings.
Wes McCart, Stevens County Farm Bureau	Page 8-9, Statement of Support LU-15	Please change this to an objective and all of the dashes to recommendations. Note that the last dash uses the word "recommending."	Planning Unit agreed on this formatting in the Fall of 2008. Please see revised format that specifies "obligation, recommendation, or action to consider in implementation."
Wes McCart, Stevens County Farm Bureau	Page 9-1, Background, Issues and Consideration of Options	There is a yellow highlighted reference to Appendix X. This should have been part of the draft plan so comment could have been made on it, and on items related to it in this section. I believe this is an oversight, and should be available for future further comments before the plan is finalized. (This reference also occurs in other locations.)	This is the Instream Flow Memo. It was provided previously, and on the County website.
Wes McCart, Stevens County Farm Bureau	Page 9-1, Instream Flow, second paragraph, last sentence	Please add to the end of the section: <u>However, the WRIA 54 planning unit has not made a recommendation to Ecology to set the instream flow on any water body in the WRIA. The process of determining the minimum flows and other associated components of a rule may continue into the implementation phase.</u>	Suggested edit accepted.
Wes McCart, Stevens County Farm Bureau	Page 9-2, Statement of Position ISF-1	This entire section is narrative and should be included as such, not under a Recommendation Heading or as a statement. Please delete titles and rename appropriately. Please provide more detail on the last sentence in paragraph two related to the "West Arm."	Although it is lengthy and more narrative in nature, this section captures the larger extent of the Planning Unit's position on this topic. For more discussion on the "West Arm" analysis, please see documentation developed by Mike Hermanson for the Instream Flow Work Group (refer to Spokane County web site).
Wes McCart, Stevens County Farm Bureau	Page 9-2, Statement of Position ISF-1, fifth paragraph, last sentence	This sentence should be the recommendation. Please consider adding the recommendation: <u>Ecology and the planning unit will continue to develop a minimum instream flow setting and draft rule using a broader community based approach.</u>	Planning Unit previously discussed this on several occasions and agreed that this would be a Statement of Position.
Wes McCart, Stevens County Farm Bureau	Page 9-2, Statement of Position ISF-1, fourth paragraph, second sentence	This refers to "prioritization of water uses..." yet there are not priorities listed in this plan. The planning unit needs to discuss prioritizing water uses and include this in the plan. The plan is the best determination of local concerns and provides guidance from the locals on water manage. Therefore, please include a list of priorities.	This prioritization could be done as part of an instream flow rule (aka water management rule) as described in the context of this discussion. Added item to Chapter 13: Consider prioritizing beneficial uses.
Wes McCart, Stevens County Farm Bureau	Page 9-3, Statement of Position ISF-2	Again this is just narrative and the headings should be deleted and allow the comments to be text. Please delete the headings.	Edit accepted.
Wes McCart, Stevens County Farm Bureau	Page 9-3, WRIA 54 Tributaries	As part of this section, a recommendation should be made to: <u>Install a gage at the Little Chamokane to allow for setting on instream flows and management of the subbasin.</u> Please have the planning unit add this.	This is covered, if it were to be prioritized by the Planning Unit during implementation, in TI-4 and ISF-3.
Wes McCart, Stevens County Farm Bureau	Page 9-4, top line	Contained in parenthesis is "(except Chamokane)." This is inconsistent with other parts of the plan as stated in previous comments. The <u>Little Chamokane</u> has been previously stated to have year round flow and should be added here. Also, it was mentioned earlier about Latch Creek and the Little Spokane River. For consistency, these should be mentioned as lying outside of the boundaries of WRIA 54, but do contribute flow to the Spokane River. Please add appropriate language for consistency and accuracy.	Added Little Chamokane Creek



Commenter	Location	Comment	Action Taken
Wes McCart, Stevens County Farm Bureau	Page iv	"Schedule for updating plan" listed twice. Please delete one reference.	Corrected.
Wes McCart, Stevens County Farm Bureau	Page iv	Please add a section reference for appendices, including public comments and responses to comments.	Added
Wes McCart, Stevens County Farm Bureau	Page iv	Please add a reference for all pictures and figures in the document.	Added
Wes McCart, Stevens County Farm Bureau	Table 2-5 (pages 2-11 to 2-13)	- Fisheries listed here fits several of the goals, but there are no objectives. Does the planning unit support or want to improve fisheries? Please have the planning unit discuss and possibly add this objective. Much of the data for life stages and timing are assumed or lacking. Is this a data gap? Is it something the planning unit feels needs to be address? I do not see any recommendations for filling this gap and I do not recall any discussions. The planning unit should discuss this and make a recommendation if appropriate. The lines that extend to separate fish also separate comments. Please correct this as many of the comments apply to an entire section/reach rather than a specific fish. Specific to the Chamokane Creek, there is no timing for the species. Please add timing. Do Mountain whitefish and Chinook occur on the entire stream, or just below the falls? Please clarify this information.	Information provided by Spokane Tribe, Avista, and WDFW. Habitat element not selected for WRIA 54 Watershed Plan; thus the Plan does not address these issues.
Wes McCart, Stevens County Water Conservancy Board	Page 11-3; Table 11-1; Water Appropriation; box two	Please note that a study of the overlap between claims and permit exempt water rights has a low potential of yielding results. Please have the planning unit reconsider this option and or consider ranking at the bottom.	This table does not represent a prioritized list of data needs - clarifying language added to introduction on page 11-1. Reconciling claims and permit exempt wells may be part of a future water demand evaluation for specific areas where this may be significant information.
Wes McCart, Stevens County Water Conservancy Board	Page 12-1; Chapter 12	Please note that high quality - low cost curricula and materials are available from the American Geological Institute, the American Water Resources Association, and others.	Requested edit completed.
Wes McCart, Stevens County Water Conservancy Board	Page 3-1; Chapter 3	There is no mention that ground water in the southern portion of WRIA 54 has a supplying connection to WRIA 43 and/or WRIA 53. There is also no mention of ground water having a supplying connection in northern WRIA 54 with WRIA 59. Please add this to the discussion in this chapter.	Please refer to the Phase 2 Level 1 Data Compilation and Technical Assessment for a complete discussion of all of these questions.
Wes McCart, Stevens County Water Conservancy Board	Page 3-1; Water Rights	There seems to be some mixing of terms as it relates to claims. Please clarify that a claim is not a water right certificate, but merely a statement that people are using water and that water use was established prior to the water code. There is much uncertainty to a claim; it may be relinquished or it may just be a claim.	Requested edits complete.
Wes McCart, Stevens County Water Conservancy Board	Page 3-1; Water Rights; bullet 1	Is the WRIA 54 planning unit going to review all of the claims and determine if they are valid to refine actual current use? This sound like a job for a water cop or an adjudication not a study. Please clarify.	No, the WRIA 54 Planning Unit has not plan to review claims.
Wes McCart, Stevens County Water Conservancy Board	Page 3-1; Water Use	Please clarify the methodology used for the water use estimate and where the data was obtained. We assume that "potential water rights" are all certificates and claims. What is the assumption used on exempt wells? Is it 5,000 gals/day or some other figure? Also, these figures are not consistent with other sections of the plan. Please correct this inconsistency.	Please refer to the Phase 2 Level 1 Data Compilation and Technical Assessment for a complete discussion of all of these questions.
Wes McCart, Stevens County Water Conservancy Board	Page 3-10	Please note that the studies for inadequate water supply in the West Plains and infrastructure cost to bring in outside water or store water are all externalized development cost, therefore these cost should be paid entirely by the affected owners.	The Plan does not address financial responsibilities.
Wes McCart, Stevens County Water Conservancy Board	Page 3-2; Table 3-1	The net demand is 50% of the amount stated on the previous page. A consumptive use quantity of 56,639 or 25,970 is critical to determine demands for human use. Please clarify this figure and explain the differences. Also, if you figure the total area of WRIA 54 and multiply that by the average rainfall and subtract the evapotranspiration, you will see that the WRIA basin as a whole is dependent of water from outside its borders. This is a different picture then the table gives you of only 0.4% from human use. Please add this to your discussion.	Please refer to the Phase 2 Level 1 Data Compilation and Technical Assessment for a complete discussion of all of these questions.
Wes McCart, Stevens County Water Conservancy Board	Page 3-3; last bullet on page	Please note that the entire burden to solve the low DO problem is placed on WRIA 57 and Avista. Please add language to address this issue.	This was not discussed. No edits made to the Plan.
Wes McCart, Stevens County Water Conservancy Board	Page 3-3; Potential Future Water Sources; bullet 1	Please add to this item that this possible surface water availability is <u>mostly subject to downstream demand for consumptive use, power and cooling, and instream flow.</u>	Bullet is accurate as written.
Wes McCart, Stevens County Water Conservancy Board	Page 3-3; Potential Future Water Sources; bullet 2	Please note that only Chamokane Creek has significant potential for storage for out of stream use. Please add language to address this issue.	Storage opportunities in Chamokane Creek are noted elsewhere in the Plan. The Plan also provides for possible support of other storage projects, not currently identified.
Wes McCart, Stevens County Water Conservancy Board	Page 3-3; Potential Future Water Sources; bullet 3	Please note that the paleochannel aquifers are tributary to WRIA 43. Please add language to address this issue.	Current understanding of the paleochannel aquifers indicates flow toward the Spokane River.
Wes McCart, Stevens County Water Conservancy Board	Page 3-3; Potential Future Water Sources; bullet 4	Please note that the CRBG aquifers are recharged in WRIA 54 and flow into WRIA's 43 and 53. Please add language to address this issue.	Please refer to the Phase 2 Level 1 Data Compilation and Technical Assessment for a complete discussion of all of these questions.
Wes McCart, Stevens County Water Conservancy Board	Page 3-3; Potential Future Water Sources; bullet 6	Please note that 99% of the SVRP is in Idaho and 1% is from WRIA 57. WRIA 54 ranks dead last in political power to place demand on the SVRP. Please add language to address this issue.	The political power of WRIA 54 is not an appropriate topic for inclusion in the Plan.
Wes McCart, Stevens County Water Conservancy Board	Page 3-4; bullet 1	Please note that heavy metals in suspended sediment are 1-2 orders of magnitude higher in the Spokane Arm compared to anywhere else in Lake Roosevelt. Please add language to address this issue.	Please provide data to support this.
Wes McCart, Stevens County Water Conservancy Board	Page 3-4; bullet 6	Please note that the Sherwood Mine reclamation included the mill site at Ford with ponds of acidic tailings along Chamokane Creek. The final cap material was changed from imported low-level waste to clean fill after public protest in the early 1980's. Please add language to address this issue.	Requested edits completed.
Wes McCart, Stevens County Water Conservancy Board	Page 3-4; bullet 7	Please note that the contaminate compound is ClO4. Please add language to address this issue.	Requested edit completed
Wes McCart, Stevens County Water Conservancy Board	Page 3-5; last dash on right at bottom of the page	Please add ClO4 to the list of materials that need to be studied.	Requested edit accepted.
Wes McCart, Stevens County Water Conservancy Board	Page 3-9; Example Draft Instream Flow Recommendations	Please include language that: <u>The setting of the instream flow for the Spokane River is the single most contentious part of this document.</u>	This topic is covered in Chapter 9.
Wes McCart, Stevens County Water Conservancy Board	Page 4-3; Background and Issues; bullet 1	Please note that this statement is not the result of relinquishment alone, but because there is a lack of alternative incentives. Please add language to address this issue.	The relinquishment example is just one case of unintended negative consequences.
Wes McCart, Stevens County Water Conservancy Board	Page 4-5; Recommendations	Please consider adding the following recommendation: <u>Encourage the legislature to allow Water Conservancy Boards to establish water banking programs and trust water programs, where the Water Conservancy Board holds the contract for the water.</u>	Per Planning Unit discussion on 3/25/09, added as "Recommendation WFN-6.
Wes McCart, Stevens County Water Conservancy Board	Page 4-5; Recommendations	Please consider adding the following recommendation: <u>Determination of quantity and validity should be part of the due diligence for NRCS cost share of water projects. Water Conservancy Boards could provide support in helping NRCS with their determinations.</u>	Per Planning Unit discussion on 3/25/09, not added.
Wes McCart, Stevens County Water Conservancy Board	Page 5-2; Water Reclamation and Reuse	Please add a bullet that states: <u>At least one family of four in Bruce Creek watershed supports a high standard of living with only water harvested from the dwelling roof.</u>	Need more information before this could be added.
Wes McCart, Stevens County Water Conservancy Board	Page 5-3; Recommendation WUE-1	Please note that there is no mention of Stevens County PUD as a significant purveyor in WRIA 54. Please add language to address this issue.	Stevens P.U.D. added.
Wes McCart, Stevens County Water Conservancy Board	Page 6-5; first paragraph; third sentence	The figure of 5,792 acre-feet/year means that the average daily use of permit exempt wells is 1,400 gals/day every day of the year. This seems like an unreasonable amount. Please verify and provide some information on how this assumption was made and its validity. Also, this seems inconsistent with figures in other places of the plan. Please provide consistency.	Please see revised text which provides an estimate developed using methodology developed for the Colville River watershed.
Wes McCart, Stevens County Water Conservancy Board	Page 7-2	Please add to the appropriate bullet that: <u>The entire length of Chamokane Creek has potential for soil aquifer storage by stream grade control.</u>	This was not discussed. We would need more information before this could be added.
Wes McCart, Stevens County Water Conservancy Board	Page 7-2; bullet 6; Beaver Ponds	All of the northern tributaries (to the Spokane River) have lots of beaver potential, but forage is a common limiting factor. Please add language to address this issue.	Noted, no edit to Plan.
Wes McCart, Stevens County Water Conservancy Board	Page 7-3; 1st bullet	Please note that this could be done on a large scale in the Bull Pasture area of the Spokane Reservation. Also, near contour, high flow diversions can augment recharge in the CBRG aquifers by increasing the intersection of the aquifers by the southern tributaries to the Spokane River. Please add language to address this issue.	Noted. These could be projects brought to the Planning Unit during implementation. These were not evaluated in the water storage study done for WRIA 54.
Wes McCart, Stevens County Water Conservancy Board	Page 7-3; last bullet	Please note that a storm water infiltration project will be built on south Lincoln Street in Spokane this year.	Noted
Wes McCart, Stevens County Water Conservancy Board	Page 7-4; Water conservation policies and projects bullet	Please note that riparian plantations and replacing riparian bluegrass lawns with low growing shrubs can conserve instream flow in urbanized areas. Please add language to address this issue.	Content of this bullet does not include specifics regarding methodologies.

WRIA 54 Planning Unit  
**WRIA 54 (Lower Spokane) Watershed Plan**

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**APPENDIX D.**  
**GLOSSARY AND ACRONYMS**

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August 2009



## ACRONYMS

ASR = Aquifer Storage and Recovery  
BMPs = Best Management Practices  
CFS = Cubic Feet Per Second  
CRBG = Columbia River Basalt Group  
CWSP = Coordinated Water System Plan  
DIP = Detailed Implementation Plan  
DOH or WDOH = Washington Department of Health  
DNS = Determination of Non-significance  
DO = Dissolved Oxygen  
DS = Determination of Significance  
E3 = Education, Environment, Economy (Washington State Education Program)  
Ecology or WDOE = Washington Department of Ecology  
EIS = Environmental Impact Statement  
EPA = Environmental Protection Agency  
FERC = Federal Energy Regulatory Commission  
FOTOG = Field Operations Technical Guide  
GIS = Geographical Information System  
GMA = Growth Management Act (Chapter 36.70A RCW)  
GPD = Gallons Per Day  
IRMP = Integrated Resource Management Plan  
LID = Low Impact Development  
MOA = Memorandum of Agreement  
MOU = Memorandum of Understanding  
NDMA = N-nitrosodimethylamine  
NOAA = National Oceanic and Atmospheric Administration  
NPDES = National Pollutant Discharge Elimination System  
NRCS = Natural Resource Conservation Service  
OFM = Office of Financial Management  
PCB = Polychlorinated Biphenyl  
PHABSIM = Physical Habitat Simulation System  
PRISM = Parameter-elevation Regressions on Independent Slopes Model  
PUD = Public Utility District  
QAPP = Quality Assurance Monitoring Plan  
RCW = Revised Code of Washington  
RWCC = Regional Water Conservation Collaboration  
SEPA = State Environmental Policy Act  
SMA = Shorelines Management Act  
SVRP = Spokane Valley Rathdrum Prairie Aquifer  
SWSL = Surface Water Source Limitations  
TCE = Trichloroethylene  
TDG = Total Dissolved Gas  
TMDL = Total Maximum Daily Load  
UGA = Urban Growth Area  
USFS = United States Forest Service  
USFWS = United States Fish and Wildlife Service  
USGS = United States Geological Survey  
WA = Washington

WAC = Washington Administrative Code  
WDFW = Washington Department of Fish and Wildlife  
WDOE or Ecology = Washington Department of Ecology  
WDOH or DOH = Washington Department of Health  
WDNR = Washington Department of Natural Resources  
WRATS = Water Right Application Tracking System  
WRIA = Water Resource Inventory Area  
WRIA 54 = Water Resource Inventory Area 54 (the Lower Spokane River Watershed)  
WSU = Washington State University  
WUCC = Washington Utilities Coordinating Council  
WUA = Weighted Usable Area



WRIA 54 Planning Unit  
**WRIA 54 (Lower Spokane) Watershed Plan**

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**APPENDIX E.**  
**LINKAGE BETWEEN WATERSHED PLAN LEGAL**  
**REQUIREMENTS AND WRIA 54 GOALS, OBLIGATIONS,**  
**RECOMMENDATIONS AND STATEMENTS OF SUPPORT OR**  
**POSITION**

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August 2009



Linkage between Watershed Plan Legal Requirements and WRIA 54 Goals, Obligations, Recommendations and Statements of Support or Position		
RCW 90.82 Watershed Plan Requirement	WRIA 54 Watershed Plan Goals	WRIA 54 Watershed Plan Obligations, Recommendations, and Statements of Support or Position
No specific requirement – applies to multiple watershed plan elements	<ul style="list-style-type: none"> <li>– Address data gaps that are critical to implementing watershed plan goals and recommendations.</li> <li>– Prioritize technical data needs. Prioritization is needed to manage workload and will reveal overlapping needs.</li> <li>– As issues and data gaps are prioritized, these priorities may influence other entities’ projects and focus areas. Funding may also be sought for prioritized projects.</li> <li>– Raise public awareness of water resources issues in WRIA 54.</li> <li>– Support WRIA 54</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Recommendation TI-4:</b> Stream flow monitoring for WRIA 54 tributaries—Establish stream flow monitoring program for WRIA 54 tributaries. Monitoring locations would be determined based on available funding, labor and equipment resources and the priorities as determined by the Planning Unit at the time of initiating the monitoring program.</li> <li>• <b>Recommendation TI-6:</b> Recommend local governments and conservation districts seek to increase funding for water and natural resources staff, in part to carry forth Plan implementation beyond the Phase 4 grant funding. Additional staff and/or funding support is needed to implement water resources management projects and programs, and to conduct and supervise technical studies needed for water management.</li> <li>• <b>Recommendation TI-7:</b> Recommend that the Legislature support Ecology’s ambient groundwater monitoring program and recommend that Ecology consider the West Plains for an ambient groundwater monitoring program.</li> <li>• <b>Statement of Support TI-8:</b> Support Collection of Water Resources Data—Continued data collection is essential to building the knowledge base necessary for informed water resources management. Data collection efforts may be accomplished by individual entities, the Planning Unit, and volunteer efforts. All data collected through Planning Unit supported efforts will be available to Planning Unit members.</li> <li>• <b>Statement of Support EDU-1:</b> Water resources education programs in WRIA 54 should contribute information to and support E3 Washington.</li> </ul>

	<p>Watershed Plan recommendations.</p> <ul style="list-style-type: none"> <li>– Raise public awareness of how the actions of individuals affect the watershed and encourage citizens to change their behavior related to watershed issues.</li> <li>– Support and collaborate with education and outreach programs.</li> <li>– Create a mechanism to educate elected officials about watershed issues and options and to support informed decisions.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Recommendation EDU-2:</b> Conduct a water resource education needs assessment in WRIA 54.</li> <li>• <b>Statement of Support EDU-3:</b> Include funding for education and outreach (staff and materials) within grant applications where applicable.</li> <li>• <b>Recommendation EDU-4:</b> The legislature should provide additional funding for education and outreach staff, such as for conservation districts, for efforts within WRIA 54.</li> <li>• <b>Statement of Support EDU-5:</b> Ecology should make education and outreach a priority.</li> <li>• <b>Statement of Support EDU-6:</b> Encourage local governments to hire or retain education and outreach staff.</li> <li>• <b>Obligation IMP-1:</b> Develop a framework for the future structure of the WRIA 54 Planning Unit to guide implementation and water resources management during and beyond Phase 4.</li> <li>• <b>Obligation IMP-2:</b> The Planning Unit recommends that the Memorandum of Agreement that guides the Planning Unit’s Phase 3 activities be amended to include Phase 4.</li> <li>• <b>Obligation IMP-3:</b> The Planning Unit agreed that memoranda of understanding or memoranda of agreement between the implementing entities and Ecology should be developed in the first year of Phase 4 to guide management of WRIA 54 water resources beyond Phase 4. Because Ecology does not represent other state agencies in Phase 4 as it does in Phase 3, the Planning Unit may also need agreements with other state agencies. The Planning Unit acknowledged that the agreements should have a broad scope and provide over-arching guidance to address water resources issues across jurisdictional boundaries.</li> <li>• <b>Recommendation IMP-4:</b> The Planning unit recommends updating the Watershed Plan and Detailed Implementation Plan (DIP) in year four of implementation (2012-2013) and then every five years following this first update. For efficiencies, the Planning Unit recommends that the DIP be updated in conjunction with the Watershed Plan. Although it</li> </ul>
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		<p>would be convenient for Watershed Plan and DIP updates to coincide with planning updates under the state Growth Management Act, this would not be practical since WRIA 54 includes three counties (i.e., Spokane, Stevens and Lincoln Counties) that have different GMA planning timelines.</p>
<p>Water Quantity Element (RCW 90.82.070): “Watershed planning under this chapter shall address water quantity in the management area by undertaking an assessment of water supply and use in the management area and developing strategies for future use. (2) Strategies for increasing water supplies in the management area, which may include,</p>	<ul style="list-style-type: none"> <li>– Strive for water availability in the future to protect quality of life, a healthy economy, and a healthy environment.</li> <li>– Promote sustainable use of water resources.</li> <li>– Strive for realistic laws and regulations that support sustainable management of water resources.</li> <li>– Coordinate water availability and areas of development.</li> <li>– Promote implementation of water storage projects that will provide water for both instream and out-of-stream needs.</li> <li>– Encourage, perform and coordinate studies to better</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Recommendation WRA-1:</b> Recommend that the State legislature provide more staff and funding to the Washington Department of Ecology to process water rights and for compliance activities. The Planning Unit particularly encourages consideration of establishing a regional water master.</li> <li>• <b>Recommendation WRA-2:</b> Regular updates from Ecology to the Planning Unit regarding water right activity in WRIA 54. The Planning Unit or its members may provide input to Ecology through the normal public comment periods associated with these actions.</li> <li>• <b>Recommendation WRA-3:</b> Consider prioritizing hydrologic subbasins for Ecology to process water rights applications. Note that all subbasins in a priority area would need to be included and that Ecology has to follow state laws to process water rights in order of application date, but can do so within a subbasin or watershed.</li> <li>• <b>Recommendation WRA-4:</b> Conservancy Boards in Stevens, Spokane and Lincoln Counties should develop and maintain a public database of willing water rights buyers and sellers within their counties. The Conservancy Boards will need to make statements that the extent and validity of water rights in the database are not guaranteed. (This is currently being implemented by the Stevens County Water Conservancy Board.)</li> <li>• <b>Recommendation WRA-5:</b> Recommend that the Spokane Tribe develop a water code for the Spokane Tribe and Reservation, including fee lands.</li> <li>• <b>Recommendation WRA-6:</b> Planning Unit will review, discuss, and recommend improvements to the relinquishment law.</li> <li>• <b>Recommendation WUE-1:</b> Coordinate water use efficiency and</li> </ul>

<p>but are not limited to, increasing water supplies through water conservation, water reuse, the use of reclaimed water, voluntary water transfers, aquifer recharge and recover, additional water allocations, or additional water storage and water storage enhancements. The objective of these strategies is to supply water in sufficient quantities to satisfy the minimum instream flows for fish and to</p>	<p>understand water resources.</p> <ul style="list-style-type: none"> <li>– Strive for consistency and coordination between the WRIA 54 Watershed Plan and local land use plans and development regulations.</li> <li>– Coordinate water availability and areas of development.</li> <li>– Strive for development that results in sustainable land use.</li> <li>– Support property owners’ rights, including legal access to water.</li> <li>– Support public access to water for recreation.</li> </ul>	<p>conservation measures in WRIA 54 through the existing Regional Water Conservation Collaboration and Spokane County Coordinated Water System Planning.</p> <ul style="list-style-type: none"> <li>• <b>Recommendation WUE-2:</b> Recommend that local governments work toward improved water use efficiency in landscaping and other outdoor water uses.</li> <li>• <b>Recommendation WUE-3:</b> Recommend that counties, cities and water purveyors develop and implement indoor and outdoor water conservation incentives.</li> <li>• <b>Recommendation WUE-4:</b> Recommend that purveyors provide notice to the Planning Unit when they initiate water use efficiency/conservation goal setting.</li> <li>• <b>Recommendation WUE-5:</b> Additional funding is needed to support implementation of water conservation and reclaimed water use.</li> <li>• <b>Statement of Support WUE-6:</b> Where cost-effective and appropriate, support continued funding for County Conservation Districts and the U.S. Natural Resources Conservation Service (NRCS) work with agricultural irrigators to assess and improve water use efficiency.</li> <li>• <b>Statement of Support WUE-7:</b> Where cost-effective and appropriate, support development of and coordinate with surrounding WRIsAs for use of reclaimed water.</li> <li>• <b>Recommendation WFN-1:</b> Consider a regional management and coordination organization for water supply on the West Plains. This organization should encourage improvement of connectivity between water systems, as allowed by cost and water right constraints.</li> <li>• <b>Recommendation WFN-2:</b> Complete planning for water usage on the reservation and improvements needed for the Spokane Tribe’s water systems.</li> <li>• <b>Recommendation WFN-3:</b> Recommend formation of a Chamokane Basin Watershed Council to resolve water-related issues in the Chamokane Basin. This Watershed Council may</li> </ul>
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<p>provide water for future out-of-stream uses for water identified in the assessment and to ensure that adequate water supplies are available for agriculture, energy production, and population and economic growth under the requirements of the state's growth management act, chapter 36.70A RCW. These strategies, in and of themselves, shall not be construed to confer new water rights. The watershed plan must address the</p>		<p>consist of Chamokane Basin residents, Stevens County, the Spokane Tribe, WRIA 54 Planning Unit members and others.</p> <ul style="list-style-type: none"> <li>• <b>Recommendation WFN-4:</b> Local governments, the Tribe and water purveyors should assess subarea water supply needs, identify appropriate measures from a range of options, and facilitate options that are economically viable and provide long-term sustainability.</li> <li>• <b>Recommendation WFN-5:</b> Establish a program to collect data and evaluate where permit-exempt wells are a concern. Develop management options for problem areas. Affected local governments and Ecology should provide technical support and funding; counties, purveyors, Ecology and Regional Health District should coordinate.</li> <li>• <b>Recommendation WFN-6:</b> The WRIA 54 Planning Unit, Ecology, counties, and the Stevens, Spokane and Lincoln County Water Conservancy Boards should explore water rights trusts, banking, water leasing and acquisition.</li> <li>• <b>Recommendation WFN-7:</b> The state Legislature should amend current law to allow water banking throughout the state.</li> <li>• <b>Recommendation WS-1:</b> Evaluate aquifer storage and recovery and enhanced recharge for the West Plains, considering reclaimed water as a priority source but not excluding other water sources.</li> <li>• <b>Recommendation WS-2:</b> Promote the connectivity of the West Plains area so that water can be efficiently distributed where it is needed. Increased connectivity could consist of building more infrastructure for intermittent buying and selling of water or for permanent water rights transfers.</li> <li>• <b>Recommendation WS-3:</b> Promote and support water storage projects initiated by individual entities throughout the watershed to meet instream flows and to provide water for residents, business and projected growth in Spokane, Lincoln, and Stevens Counties and the Spokane Indian Reservation. Several projects have been identified in the Chamokane Creek watershed.</li> <li>• <b>Statement of Support LU-1:</b> The Washington Utilities Coordinating Council has initiated a review of the Coordinated</li> </ul>
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<p>strategies required under this subsection.</p>		<p>Water System Plan and determined not to conduct a complete update at this time. If an update is initiated, the Planning Unit supports addressing such issues as: use of consistent population estimates; consistency with approved Comprehensive Plans; improvements to the way commitments to provide water are managed for plats that may not develop for several years; planning to provide water for current and future needs on the West Plains; evaluation of transferring water from the Spokane Valley-Rathdrum Prairie (SVRP) Aquifer to the West Plains; sharing, leasing and acquisition of water rights; sharing of water system plans with adjacent purveyors; water-right transfers; connectivity; infrastructure improvements; and conservation.</p> <ul style="list-style-type: none"> <li>• <b>Recommendation LU-2:</b> Water system plans and other local land use plans should be consistent.</li> <li>• <b>Recommendation LU-3:</b> Entities involved in long-range land use planning within WRIA 54 should evaluate the “carrying capacity” of land related to available or proposed water supply to support responsible development consistent with comprehensive planning. If water is not available, there needs to be a plan to provide water to the area. Funding assistance will be necessary to implement this recommendation.</li> <li>• <b>Recommendation LU-4:</b> The state should provide technical support and funding to counties and cities to identify areas of strained water resources.</li> <li>• <b>Recommendation LU-5:</b> Counties and cities should identify and consider adding areas of strained water resources to comprehensive land use plans and development regulations (through, for example, water supply overlay zones).</li> <li>• <b>Recommendation LU-6:</b> Recommend that counties, purveyors, Ecology, and interested Planning Unit members collaborate to develop flexible local guidelines for demonstration of water supply availability and sustainability. Methods may include but are not limited to hydrogeologic investigation and characterization reports.</li> <li>• <b>Recommendation LU-7:</b> Recommend that Ecology provide</li> </ul>
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		<p>technical assistance and funding for ongoing support in the implementation of guidelines developed in Recommendation LU-6 to demonstrate sufficient water availability and sustainability for proposed and existing uses for Comprehensive Plan amendments and associated zoning changes.</p> <ul style="list-style-type: none"><li>• <b>Recommendation LU-8:</b> Recommend that Spokane County require applicants to demonstrate sufficient water availability and sustainability for proposed and existing uses for Comprehensive Plan amendments and associated zoning changes.</li><li>• <b>Recommendation LU-9:</b> Pursue funding to conduct more regional water supply availability studies through WRIA 54 Watershed Plan implementation.</li><li>• <b>Recommendation LU-10:</b> Spokane County should identify barriers and plan for the implementation of the Comprehensive Plan goals and policies discussed above, which are aimed at securing adequate water quantity for the residents of Spokane County. This will require development of methodologies to accurately evaluate the “carrying capacity” of land related to water supply, and application of these methodologies to ensure responsible development consistent with the Comprehensive Plan. Spokane County and Ecology could collaborate to develop guidelines for demonstration of water supply availability and sustainability. Methods may include but are not limited to hydrogeologic investigation and characterization reports.</li><li>• <b>Recommendation LU-11:</b> The Planning Unit recommends an evaluation of methodologies and the review process used to determine water availability for proposed development projects, in order to better determine that permitted projects have a viable water supply.</li><li>• <b>Recommendation LU-12:</b> Recommend that Spokane County add the following condition for the approval of a final plat: “Prior to filing the final plat, the applicant will demonstrate provision of adequate potable water supply by providing one of the following:<ul style="list-style-type: none"><li>– A letter from a water purveyor stating they will serve the</li></ul></li></ul>
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		<p>proposed subdivision. If a plat is not developed for a specified amount of time, this commitment may need to be reconfirmed by the water purveyor.</p> <ul style="list-style-type: none"> <li>– A copy of a water right permit from the Department of Ecology with adequate quantity to serve the proposed subdivision;</li> <li>– A plan to supply the proposed subdivision within the groundwater exemption specified in Revised Code of Washington (RCW) 90.54.050 that complies with the 1997 Attorney General Opinion, Washington State Supreme Court Decision <i>Department of Ecology vs. Campbell and Gwinn, LLC</i> and Washington State Department of Health guidelines for residential water use.”</li> </ul> <ul style="list-style-type: none"> <li>• <b>Recommendation LU-13:</b> Recommend that Spokane County add one or more of the following to the requirements for exemption from the subdivision ordinance: <ul style="list-style-type: none"> <li>– Demonstration of water supply</li> <li>– Only three parcels can be created</li> <li>– Parcels must be 40 acres or greater</li> <li>– Public notice of proposed land division.</li> </ul> </li> <li>• <b>Statement of Support LU-14:</b> The Planning Unit recommends support for sustainable agriculture (including forestry).</li> <li>• <b>Statement of Support LU-15:</b> Support efforts to provide public access to water-related recreation areas.</li> <li>• <b>Recommendation LU-16:</b> A study is recommended to evaluate the land use impacts of beavers on Lake Spokane and to consider relocation of beavers to the properties of willing landowners. This could be coordinated with the Lands Council project to evaluate the role of beavers in providing water storage.</li> <li>• <b>Recommendation TI-1:</b> Basalt Aquifer Groundwater Study—The Columbia River Basalt Group aquifers that underlie the West Plains area are used for water supply. Groundwater levels have declined in some areas, indicating the groundwater resource is potentially strained. A better understanding of the aquifers in the West Plains area would be beneficial to understand how this resource can be</li> </ul>
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		<p>used in a sustainable way.</p> <ul style="list-style-type: none"> <li>• <b>Recommendation TI-2:</b> Identification of Areas of Strained Water Resources—Identifying potential and existing areas of strained water resources, where water supply is not currently available to meet growing water demand for out-of-stream water needs, is a major data need for WRIA 54. The Planning Unit supports development of methodologies to accurately identify areas of strained water resources, and development of tools to manage land use needs associated with these areas.</li> <li>• <b>Recommendation TI-3:</b> Develop Water Supply and Demand Forecast for Prioritized Areas <ul style="list-style-type: none"> <li>– Utilize growth projections, zoning, building/permit activity</li> <li>– Relate to parcel data, water service areas</li> <li>– Identify existing water sources and capacity</li> <li>– Determine unit water needs and conservation/infrastructure assumptions</li> </ul> </li> </ul>
<p>Instream Flow Element (RCW 90.82.080)t: “If minimum stream flows have not been adopted by rule for a stream within the management area, setting the minimum instream flows</p>	<ul style="list-style-type: none"> <li>– Balance the needs of instream and out of stream uses.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Statement of Position ISF-1:</b> The Spokane River Instream Flow Work Group’s memorandum documents the WRIA 54 Planning Unit’s position regarding instream flow for the main stem Spokane River above Nine Mile Dam, with the one addition of requesting that the option of a water right reservation be considered from the “West Arm” of the SVRP Aquifer. When Ecology undertakes setting an instream flow for the Spokane River, the WRIA 54 Planning Unit recommends considering the option of a water right reservation from the “West Arm” of the SVRP Aquifer. Prioritization of water uses for future allocation within WRIA 54 could be applied if a reservation for future water use were included in an instream flow rule, by reserving water for certain purposes such as, in no order of priority, environmental enhancement, agriculture, domestic or municipal supply, stock watering or commercial and industrial purposes. The Planning Unit understands that the state caucus will not currently support a</li> </ul>

<p>shall be a collaborative effort between the department (of Ecology) and members of the planning unit. The department must attempt to achieve consensus and approval among the members of the planning unit regarding the minimum flows to be adopted by the department. Approval is achieved if all government members and tribes that have been invited and accepted on the planning unit present for a recorded vote unanimously</p>		<p>reservation of water for municipal water supply due to existing inchoate water rights in the Spokane River watershed that can meet future water demand, Other concerns include declining summer low flows, water quality issues, and impacts on senior water right holders.</p> <p>Prior to Ecology undertaking rule-making for this reach, the Planning Unit would like a broader community-based process that incorporates the flexibility needed to meet the varied water needs of the region and presents a complete set of the information that was developed through the Watershed planning process. This is likely to require a minimum two-year effort. If Ecology is prepared to support this effort, the Planning Unit urges Ecology to initiate this work as soon as possible.</p> <ul style="list-style-type: none"> <li>• <b>Statement of Position ISF-2:</b> The Planning Unit chose not to recommend a control point at Little Falls at this time.</li> <li>• <b>Recommendation ISF-3:</b> The Planning Unit recommends a phased pursuit of instream flow rules for tributary subbasins. A phased approach is recommended, such that the effort could be discontinued if it is found that development of a rule does not provide water management benefits for the tributary basin.</li> <li>• <b>Recommendation TI-5:</b> Evaluate feasibility of establishing a stream flow gauge below Nine Mile Dam. Such a gage was identified as a need by the Spokane River Instream Flow Work Group so that Spokane River flow, including discharge from the SVRP Aquifer downstream from the ‘at Spokane’ gage, could be measured directly rather than estimated.</li> </ul>
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<p>vote to support the proposed minimum instream flows, and all nongovernmental members of the planning unit present for the recorded vote, by a majority, vote to support the proposed minimum instream flows.”</p>		
<p>Water Quality Element (RCW 90.82.090): “Watershed shall include:</p> <p>A recommended approach for implementing the total maximum daily load established for achieving compliance with water</p>	<ul style="list-style-type: none"> <li>– The WRIA 54 Watershed Plan will identify and address water quality issues within WRIA 54, recognizing that select issues and needs are currently being addressed through separate programs/processes.</li> <li>– The WRIA 54 Planning Unit will coordinate with separate ongoing programs and processes that relate</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Recommendation WQ-1:</b> Implement the monitoring described in the <i>Quality Assurance Project Plan for Nine Mile Area Non-Point Source Monitoring Study: Water Quality Monitoring Study</i> (Tetra Tech, 2009) and proceed with a study to monitor and assess non-point sources from the surface water and groundwater that drain directly to Lake Spokane. Implementation is recommended as an early action or Phase 4 action.</li> <li>• <b>Statement of Support WQ-2:</b> Support monitoring efforts undertaken by individual entities, regional groups or the Planning Unit. Current applicable monitoring programs include new Ecology ambient surface water quality monitoring stations that do not currently have secure long-term funding, and City of Spokane sediment oxygen demand sampling in Lake Spokane.</li> <li>• <b>Obligation WQ-3:</b> Ecology will keep the Planning Unit informed about progress on all total maximum daily loads (water quality improvement plans) in WRIA 54, either through verbal updates at Planning Unit meetings or email updates to those on the email</li> </ul>

<p>quality standards for the nonmarine bodies of water in the management area, unless a total maximum daily load process has begun in the mangment area as of the date the watershed planning process is initiated under RCW 90.82.060.</p> <p>Recommended means of monitoring by appropriate government agencies whether actions taken to implement the approach to bring about improvements in water</p>	<p>to water quality.</p>	<p>distribution list.</p> <ul style="list-style-type: none"> <li>• <b>Recommendation WQ-4:</b> Implement the monitoring program described in the <i>Quality Assurance Project Plan for the Paleochannel Water Quality Monitoring Study</i> (Tetra Tech and GeoEngineers, March 2009).</li> <li>• <b>Statement of Support WQ-5:</b> The Planning Unit will support non-point source assessments, monitoring, and reduction efforts, including non-point source reduction efforts recommended in the Chamokane Creek Watershed Plan.</li> <li>• <b>Statement of Position WQ-6:</b> The Planning Unit recommends implementation of existing city and county stormwater management plans and development of stormwater programs in the WRIA where none currently exists. The Planning Unit emphasizes the following elements in managing stormwater: <ul style="list-style-type: none"> <li>– Improve coordination between land use regulators (counties, cities and the Washington Department of Natural Resources) and Ecology regarding stormwater permits so that land use regulators have improved understanding of when this type of permitting is required.</li> <li>– Encourage counties and cities to develop land clearing and grading incentives or ordinances such as best management practices based on NRCS FOTOG and the <i>Eastern Washington Stormwater Manual</i>.</li> <li>– Encourage counties and cities to consider incentives for low impact development that incorporates measures such as pervious surfaces and on-site stormwater treatment.</li> <li>– Encourage counties to consider land use policies that preserve vegetation in natural (undeveloped) drainages.</li> <li>– Recommend that that cities and counties, the Washington Department of Health, Ecology and health districts address inadequate wastewater and stormwater systems.</li> </ul> </li> <li>• <b>Recommendation WQ-7:</b> The Planning Unit recommends that local governments retain qualified wetlands scientists to review wetland delineations and administer the wetland portion of critical</li> </ul>
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quality are sufficient to achieve compliance with water quality standards.		areas ordinances.
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WRIA 54 Planning Unit  
**WRIA 54 (Lower Spokane) Watershed Plan**

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**APPENDIX F.**  
**SPOKANE COUNTY SEPA CHECKLIST**

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**August 2009**





## **APPENDIX F**

### **SPOKANE COUNTY SEPA CHECKLIST**

*Note: The SEPA analysis presented in Appendix B may fulfill SEPA review requirements for Lincoln and Stevens County through adoption of the Statewide Environmental Impact Statement. Spokane County requires additional SEPA review. As such, a SEPA Checklist and Addendum for Non-Project Actions has been prepared and is provided below.*

#### **Purpose of Checklist:**

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

#### **Instructions for Applicants:**

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

#### **Use of checklist for nonproject proposals:**

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." In addition, complete the Supplemental Sheet for Nonproject Actions (Part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site," should be read as "proposal," "proposer," and "affected geographic area," respectively.

**A. BACKGROUND**

**1. Name of proposed project, if applicable:**

Watershed Management Plan - Water Resource Inventory Areas 54

Lower Spokane River

**2. Name of applicant:**

Water Resource Inventory Areas 54 Planning Unit

Spokane County – Lead Agency

**3. Address and phone number of applicant and contact person:**

Spokane County Public Works Department, Division of Utilities

Attn: Robert Lindsay, LG, Water Resources Mgr.

1026 West Broadway Avenue

Spokane, WA 99260-0430

Phone Number: (509) 477-3604

**4. Date checklist prepared:**

April 20, 2009

**5. Agency requesting checklist:**

Spokane County Public Works Department, Division of Utilities

**6. Proposed timing or schedule (including phasing, if applicable):**

The WRIA 54 Watershed Management Plan (Plan) includes recommended actions but does not include a schedule for implementation. The next phase of the project is to develop a Detailed Implementation Plan (DIP) that will include a schedule.

**7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain:**

As stated above, the next phase is the development of a DIP. The DIP will include a schedule for implementation of recommended actions detailed in the Plan. Activities identified for implementation by various participating agencies will be reviewed for SEPA compliance at the time of implementation planning specific to the recommended action.

**8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.**

Separate Environmental Checklists, with detailed environmental information, will be prepared for specific recommended actions, as required.

9. **Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.**

No applications are pending at this time.

10. **List any government approvals or permits that will be needed for your proposal, if known.**

Per Washington State RCW 90.82, approval of the WRIA 54 Watershed Management Plan is achieved by a majority of the commissioners in Spokane, Lincoln, and Stevens Counties.

11. **Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)**

The expectation of the WRIA 54 Planning Unit is to implement the various recommended actions of the Plan. The Plan has approximately 53 recommended actions. Specific projects have been envisioned in the Plan and strategies for implementation of those projects will be developed in the initial year following approval.

12. **Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.**

The Plan pertains to the areas described as the Lower Spokane River Watershed (WRIA 54) in Spokane, Lincoln, and Stevens Counties.

13. **Does the proposed action lie within the Aquifer Sensitive Area (ASA)? The City of Spokane, Spokane Valley or Liberty Lake?**  
Yes

14. **The following questions supplement Part A.**

- a. **Critical Aquifer Recharge Area (CARA) / Aquifer Sensitive Area (ASA).**

(1) **Describe any systems, other than those designed for the disposal of sanitary waste installed for the purpose of discharging fluids below the ground surface (includes systems such as those for the disposal of stormwater or drainage from floor drains). Describe the type of system, the amount of material to be disposed of through the system and the types of material likely to be disposed**

Does not apply.

- (2) **Will any chemicals (especially organic solvents or petroleum fuels) be stored in aboveground or underground storage tanks? If so, what types and quantities of material will be stored?**

Does not apply.

- (3) **What protective measures will be taken to insure that leaks or spills of any chemicals stored or used on site will not be allowed to percolate to groundwater. This includes measures to keep chemicals out of disposal systems.**

Does not apply.

- (4) **Will any chemicals be stored, handled or used on the site in a location where a spill or leak will drain to surface or groundwater or to a stormwater disposal system discharging to surface groundwater?**

Does not apply.

**b. Stormwater.**

- (1) **What are the depths on the site or groundwater and to bedrock (if known)?**

Does not apply.

- (2) **Will stormwater be discharged into the ground? If so, describe any potential impacts.**

Does not apply.

**B. ENVIRONMENTAL ELEMENTS**

**1. Earth**

- a. **General description of the site (circle one): Flat, rolling, hilly, steep slopes, mountainous, other**

The area covered by the Plan is large and encompasses a wide range of terrains, slopes, soils, and bodies of surface water. Separate Environmental Checklists, with detailed environmental information, will be prepared for specific recommended actions, as required.

- b. **What is the steepest slope on the site (approximate percent slope)?**

See 1.a.

- c. **What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.**

See 1.a.

- d. **Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.**

See 1.a.

- e. **Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.**

Does not apply..

- f. **Could erosion occur as a result of clearing, construction, or use? If so, generally describe.**

Does not apply.

- g. **About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?**

Does not apply.

- h. **Proposed measures to reduce or control erosion, or other impacts to the earth, if any:**

Does not apply.

## **2. Air**

- a. **What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.**

Does not apply.

- b. **Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.**

Does not apply.

- c. **Proposed measures to reduce or control emissions or other impacts to air, if any:**

Does not apply.

## **3. Water**

- a. **Surface:**

- 1) **Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes,**

**ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.**

Yes, the area covered by the Plan is large and encompasses a wide range of terrains, slopes, soils, and bodies of surface water. Separate Environmental Checklists, with detailed environmental information, will be prepared for specific recommended actions, as required.

- 2) Will the project require any work over, in, adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.**

Potentially, see 3.a.1

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.**

See 3.a.1

- 4) Will the proposal require surface water withdrawals or diversions? Give general descriptions, purpose, and approximate quantities if known.**

See 3.a.1

- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.**

See 3.a.1

- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

Does not apply.

**b. Ground:**

- 1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.**

Potentially. The Plan includes a wide range of options to augment stream flows and/or recharge the aquifers in the area. Separate Environmental Checklists, with detailed environmental information, will be prepared for specific recommended actions, as required.

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following applicable), or the number of animals or humans the system(s) are expected to serve.**



Does not apply.

**c. Water Runoff (including storm water):**

- 1) **Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

Does not apply.

- 2) **Could waste materials enter into ground or surface waters? If so, generally describe.**

Does not apply.

**d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:**

Does not apply.

**4. Plants**

**a. Check or circle types of vegetation found on the site:**

deciduous tree: alder, maple, aspen, other

evergreen tree: fir, cedar, pine, other

shrubs

grass

pasture

crop or grain

wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other

water plants: water lily, eelgrass, milfoil, other

other types of vegetation

**b. What kind and amount of vegetation will be removed or altered?**

Does not apply.

**c. List threatened or endangered species known to be on or near the site.**

Does not apply.

**d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:**

Does not apply.

**5. Animals**

- a. **Circle any birds and animals which have been observed on or near the site or are known to be on or near the site:**

The project area includes all animals listed below.

birds: hawks, herons, eagles, songbirds, other

mammals: deer, elk, bear, beaver, moose, squirrel, other

fish: trout, whitefish, pike, carp, other

- b. **List any threatened or endangered species known to be on or near the site.**

The WRIA 54 watershed includes, but may not be limited to, the following endangered and threatened species: American White Pelican, Bald Eagle, Peregrine Falcon, Sandhill Crane, Upland Sandpiper.

- c. **Is the site part of a migration route? If so, explain.**

Portions of the Spokane River corridor may function as migration routes.

- d. **Proposed measures to preserve or enhance wildlife, if any:**

Implementation of various recommended actions in the Plan will create mechanisms to manage and conserve water resources in the region, thus creating additional habitat for fish and other aquatic biota, and enhancing habitat in existing wetlands and shoreline environments.

## 6. **Energy and Natural Resources**

- a. **What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.**

Does not apply.

- b. **Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.**

Does not apply.

- c. **What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:**

Does not apply.

## **7. Environmental Health**

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.**

Does not apply.

- 1) Describe special emergency services that might be required.**
- 2) Proposed measures to reduce or control environmental health hazards, if any:**

### **b. Noise**

Does not apply.

- 1) What types of noise exist in the area which may affect your project (for example, traffic, equipment, operation, other)?**
- 2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.**
- 3) Proposed measures to reduce or control noise impacts, if any:**

## **8. Land and Shoreline Use**

The project area includes all land in the Lower Spokane River watershed. The Plan includes a wide range of options that may impact zoning and land use in the watersheds, including shorelines. Separate Environmental Checklists, with detailed environmental information, will be prepared for specific recommended actions, as required.

- 1. What is the current use of the site and adjacent properties?**

Does not apply.

- 2. Has the site been used for agriculture? If so, describe.**

Does not apply.

### **c. Describe any structures on the site.**

Does not apply.

### **d. Will any structures be demolished? If so, what?**

Does not apply.

**e. What is the current zoning classification of the site?**

Does not apply.

**f. What is the current comprehensive plan designation of the site?**

Does not apply.

**g. If applicable, what is the current shoreline master program designation of the site?**

Does not apply.

**h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.**

The Spokane Valley / Rathdrum Prairie Aquifer is designated as a sole-source aquifer to the region. Within Spokane County, portions of the WRIA 54 watershed area identified as Critical Aquifer Recharge Areas.

**i. Approximately how many people would reside or work in the completed project?**

Does not apply.

**j. Approximately how many people would the completed project displace?**

Does not apply.

**k. Proposed measures to avoid or reduce displacement impacts, if any:**

Does not apply.

**l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:**

Does not apply.

**9. Housing**

**a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.**

Does not apply.

**b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.**

Does not apply.

**c. Proposed measures to reduce or control housing impacts, if any:**

Does not apply.

**10. Aesthetics**

**a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?**

Does not apply.

**b. What views in the immediate vicinity would be altered or obstructed?**

Does not apply.

**Proposed measures to reduce or control aesthetic impacts, if any:**

Does not apply.

**11. Light and Glare**

**a. What type of light or glare will the proposal produce? What time of day would it mainly occur?**

Does not apply.

**b. Could light or glare from the finished project be a safety hazard or interfere with views?**

Does not apply.

**c. What existing off-site sources of light or glare may affect your proposal?**

Does not apply.

**d. Proposed measures to reduce or control light and glare impacts, if any:**

Does not apply.

**12. Recreation**

The Lower Spokane River watershed provide a wide variety of recreational opportunities including fishing, boating, swimming, and hiking. Separate Environmental Checklists, with detailed environmental information, will be prepared for specific recommended actions, as required.

**a. What designated and informal recreational opportunities are in the immediate vicinity?**

Does not apply.

- b. Would the proposed project displace any existing recreational uses? If so, describe.**

Does not apply.

- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:**

Does not apply.

**13. Historic and Cultural Preservation**

- a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.**

Separate Environmental Checklists, with detailed information, will be prepared for specific recommended actions, as required.

- b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.**

Separate Environmental Checklists, with detailed information, will be prepared for specific recommended actions, as required.

- c. Proposed measures to reduce or control impacts, if any:**

Does not apply.

**14. Transportation**

Separate Environmental Checklists, with detailed information, will be prepared for specific recommended actions, as required.

- a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.**

Does not apply.

- b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?**

Does not apply.

- c. How many parking spaces would the completed project have? How many would the project eliminate?**

Does not apply.

- d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).**

Does not apply.

- e. **Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.**

Does not apply.

- f. **How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.**

Does not apply.

- g. **Proposed measures to reduce or control transportation impacts, if any:**

Does not apply.

#### **15. Public Services**

- a. **Would the project result in an increased need for public services (for example, fire protection, police protection, health care, schools, other)? If so, generally describe.**

Separate Environmental Checklists, with detailed information, will be prepared for specific recommended actions, as required.

- b. **Proposed measures to reduce or control direct impacts on public services, if any.**

Does not apply.

#### **16. Utilities**

- a. **Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other, all.**

Does not apply. This is a non-project action.

- b. **Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity, which might be needed.**

Does not apply.

### **C. SIGNATURE**

I, the undersigned, swear under the penalty of perjury that the above responses are made truthfully and to the best of my knowledge. I also understand that, should there be any willful misrepresentation or willful lack of full disclosure on my part, the agency may withdraw any determination of nonsignificance that it might issue in reliance upon this checklist.





## SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS

(Do not use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

- 1. How would the proposal be likely to increase discharge to water, emission to air, production, storage, or release of toxic or hazardous substances; or production of noise?**

Implementation of the Plan is not likely to increase noise or increase discharges of toxic or hazardous substances to the environment.

**Proposed measures to avoid or reduce such increases are:**

Does not apply.

- 2. How would the proposal be likely to affect plants, animals, fish, or marine life?**

Implementation of various recommended actions in the Plan will create mechanisms to manage and conserve water resources in the region, thus creating additional habitat for fish and other aquatic biota, and enhancing existing habitat in wetlands and shoreline environments.

**Proposed measures to protect or conserve plants, animals, fish, or marine life are:**

Implementation of various recommended actions in the Plan will create mechanisms to manage and conserve water resources in the region, thus creating additional habitat for fish and other aquatic biota, and enhancing habitat in existing wetlands and shoreline environments.

- 3. How would the proposal be likely to deplete energy or natural resources?**

Implementation of various recommended actions in the Plan will have the potential to increase the availability of water resources in the region.

**Proposed measures to protect or conserve energy and natural resources are:**

The Plan identifies numerous recommended actions to be evaluated for the conservation of water resources in the region.

- 4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental**

**protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?**

Implementation of various recommended actions in the Plan will create mechanisms to manage and conserve water resources in the watersheds, including the environmentally sensitive sole-source aquifer that supplies drinking water to the Spokane/Coeur d'Alene region.

**Proposed measures to protect such resources or to avoid or reduce impacts are:**

The Plan identifies numerous recommended actions to be evaluated for the protection and enhancement of wetlands and other environmentally sensitive areas related to the watersheds.

**5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?**

Implementation of various recommended actions will provide information with which to make appropriate land use and zoning policy decisions regarding developments outside of existing public water service areas.

**Proposed measures to avoid or reduce shoreline and land use impacts are:**

The Plan identifies numerous recommended actions to be evaluated for the protection and enhancement of wetlands and other environmentally sensitive areas related to the watersheds.

**6. How would the proposal be likely to increase demands on transportation or public services and utilities?**

No impacts to transportation networks are anticipated.

**Proposed measures to reduce or respond to such demands(s) are:**

Does not apply.

**7. Identify, if possible, whether the proposal may conflict with local, State, or Federal laws or requirements for the protection of the environment.**

In accordance with RCW Chapter 90.82, watershed management plans (Plan) may not conflict with local, State, or Federal laws or requirements for the protection of the environment.

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**FOR STAFF USE ONLY**

Staff Member(s) Reviewing Checklist: \_\_\_\_\_

Based on this staff review of the environmental checklist and other pertinent information, the staff:

- Concludes that there are no probable significant adverse impacts and recommends a Determination of Nonsignificance.
- Concludes that probable significant adverse environmental impacts do exist for the current proposal and recommends a Mitigated Determination of Nonsignificance with conditions.
- Concludes that there are probable significant adverse environmental impacts and recommends a Determination of Significance.