



Grays-Elochoman and Cowlitz Detailed Implementation Plan

"Our mission is to prepare a locally developed plan for the beneficial management of watershed resources addressing water quantity and quality, habitat, and stream flows to meet the present and future needs of our communities, local economies, and fish & wildlife."



Volume II - Appendices E-G

**Lower Columbia Fish Recovery Board, Lead Agency
Counties of Cowlitz, Lewis, Skamania and Wahkiakum**

June 12, 2008

Grays-Elochoman & Cowlitz Detailed Implementation Plan

WRIA 25 and 26



**WA Department of Ecology
Grants #G9900028, #G0800174, #G0800001, #G0800173**

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Volume II of III

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Acronyms

ACWSP	Abbreviated Coordinated Water System Plan
ADD	Average Day Demand
AFY	Acre Feet Per Year
APA	Aquifer Protection Area
ASR	Aquifer Storage and Recovery
BMP	Best Management Practice
BOCC	Board of County Commissioners
CARA	Critical Aquifer Recharge Area
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFS	Cubic Feet Per Second
CMS	Comprehensive Monitoring Strategy
CPU	Clark Public Utilities
COA	Coordination and Oversight Agency
CRBG	Columbia River Basalt Group
CIR	Crop Irrigation Demand
CWA	Clean Water Act
DIP	Detailed Implementation Plan
DO	Dissolved Oxygen
DOH	Washington State Department of Health
EAP	Environmental Assessment Program
Ecology	Washington State Department of Ecology
EDT	Ecosystem Diagnosis and Treatment
EES	Economic and Engineering Services
EIS	Environmental Impact Statement
ENSO	El Nino/Southern Oscillation
EQIP	Environmental Quality Incentives Program
ESA	Endangered Species Act
ESHB	Engrossed Substitute House Bill
FC	Fecal Coliform
FERC	Federal Energy Regulatory Commission
FFA	Washington Farm Forest Association
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FTE	Full-Time Equivalent
GIS	Geographic Information System
GMA	Growth Management Act
GPM	Gallons Per Minute
HWS	Habitat Work Schedule
IFIM	Instream Flow Incremental Methodology
IWS	Implementation Work Schedule
LFA	Limiting Factors Analysis
LWD	Large Woody Debris
LCFRB	Lower Columbia Fish Recovery Board
M-A-G	Mill, Abernathy, and Germany Subbasin

Acronyms - Continued

MDD	Maximum Day Demand
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MGD	Million Gallons Per Day
NA	Not Applicable
NPDES	National Pollutant Discharge Elimination System
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
NWPPC	Northwest Power Planning Council
PGG	Pacific Groundwater Group
PDO	Pacific Decadal Oscillation
PUD	Public Utility District
PWR	Pacific Water Resources, Inc.
PWS	Public Water System
Qa	authorized annual withdrawal/diversion
Qi	authorized instantaneous withdrawal/diversion
Ranney Well	A shallow perforated pipe used to extract shallow ground water beneath a riverbed
RCW	Revised Code of Washington
RFP	Request for Proposals
RM	River Mile
RWTP	Regional Water Treatment Plant
SDWA	Safe Drinking Water Act
SEPA	State Environmental Policy Act
SIS	Summary Implementation Strategy
SMA	Satellite Management Agency
SOW	Scope of Work
SSA	Sole Source Aquifer
SWSL	Surface Water Source Limitation
SWSMP	Small Water System Management Program
SWTR	Surface Water Treatment Rule
TBD	To Be Determined
TAG	Technical Advisory Group
TMDL	Total Maximum Daily Load
USEPA	United States Environmental Protection Agency
USGS	United States Geological Service
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WMA	Watershed Management Act
WRATS	Water Rights Application Tracking System
WRIA	Water Resource Inventory Area
WSDA	Washington State Department of Agriculture
WSP	Water Supply Policy

Appendix E
Grays-Elochoman and Cowlitz Watersheds
Water Supply Action Schedules

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: #909 C-1 AND 909 C-2
SEE #917 A, B, C**

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #909
DEPARTMENT OF ECOLOGY – MITIGATION

Action Summary ¹	
Lead Partner(s)	Department of Ecology
Oversight Responsibilities	Department of Ecology WRIA 25/26 Planning Unit (mitigation subcommittee) LCFRB (Administration and Facilitation)
Coordinating Partner(s)	WRIA 25/26 Planning Unit (mitigation subcommittee) Washington Department of Fish and Wildlife
Action Type	Requirement <input checked="" type="checkbox"/> Recommendation <input type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing <input type="checkbox"/> Revised
Table Description	<p>Action #909: Public Water Systems develop new or expanded supplies. Requires engineering studies; approval of water system plan; water rights processing; other permitting; SEPA compliance; construction; operations & maintenance. Standard procedures exist for all of these (See Section 3.3.1).</p> <p>The Planning Unit recommends that Ecology develop clear guidance for mitigation. An existing Ecology document listing examples of past mitigation can be used as a starting point. (See section 3.3.1) Pg 3-9</p>
Plan Background & Context	<p>For water supplies except for domestic wells, the reserved supplies discussed above can be tapped only if the community first demonstrates there is no other practicable alternative, commits to effective stewardship through conservation and/or production of reclaimed water; and commits to offsetting actions and mitigating actions that minimize the effects on stream flow or aquatic habitat. Actions will be evaluated within the context of other supply alternatives, water supply total project cost, and the cost of the off-setting and mitigating actions. These costs should be reasonable within the context of other fish recovery actions that may be needed to compensate for impairment to streamflow. Pg 4-3 and 4-4</p> <p>If the supply alternatives analysis indicates that no practicable alternative is available, the water right applicant may petition Ecology to utilize a reservation of water as described in Section 4.4.1. The Planning Unit recommends that Ecology (in conjunction with Fish & Wildlife) evaluate requests for reservation use by reviewing the applicant's analysis of other alternatives <u>and</u> by evaluating the applicant's proposal in terms of off-setting and mitigating actions. Pg 3-11</p>
Relationship to Other Actions, and Coordination Needs	Development of a clear mitigation strategy is a key element necessary for the successful implementation of the WRIA 25/26 watershed management plan. This action relates to all other plan actions that address development of new or expanded water supplies, or replacement of existing sources (e.g., Actions #909, #910, #911, #913, and #915).

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Expected Outcomes	<p>Development of an effective and clear mitigation strategy and guidelines will:</p> <ul style="list-style-type: none"> • Ensure the balance between supply needs and instream flows is maintained during implementation, in accordance with existing plan priorities; • Assist regulatory agencies with consistent application of permit requirements; • Provide certainty regarding future mitigation obligations associated with reservation access and use; and • Ensure that instream flow impacts are adequately mitigated, and that mitigation efforts focus on the highest priority needs in each subbasin.
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	<p>Policy WSP-1: Access to Water Supplies (Pg 3-9) Policy WSP-1: Reservations for Water Supply (Pg 3-12) Policy WSP-1: Water Supply (Pg 3-10) Policy WSP-2: Stream Flow Protection in Developing Supplies (Pg 3-13) Policy SFP-2: Restrictions on New Water Rights (Pg 4-18, 4-19)</p>
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Medium (Phase 1 and Phase 2, approximately \$90,000)
Identify Tasks that have not been Fully Funded	Task 2 is partially funded. Although a basic mitigation strategy and guidelines will be developed during Phase 4, more refinement may be needed during the implementation phase.

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Pre-Project Planning	
Schedule		
Start Date	February 2007	
Planned Completion	April 2007	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Prepare scope of work and secure Planning Unit approval (February 2007)• Prepare and post RFP (March 2007)• Hold pre-submittal conference (March 2007)• Review submittals, interview and screen consultants (March - April 2007)• Select consultant(s), negotiate and sign contract (April 2007)	
Resource Needs		
Costs	Period Beginning: February 2007	Amount: Estimated \$2000
	Total: Estimated \$2000	
Key Cost Drivers	Advertising, staff, travel and reproduction costs.	
Funding Source(s)	Phase 3 and Phase 4 Watershed Planning funds	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	LCFRB Board approval will be needed for preparation and posting of an RFP, and entering into a contract with a consulting firm.	
Other		
Constraints and Uncertainties		
Budget constraints will limit the ability to develop a comprehensive and detailed mitigation strategy.		
Additional work and refinement may be needed during the implementation phase.		
Operation and Maintenance		
Estimated Annual Cost	NA	
Describe O&M Tasks	NA	

Task 2		Develop Mitigation Strategy and Guidelines	
Schedule			
Start Date	April 2007		
Planned Completion	December 2008 (Phases 1 and 2)		
Actual Completion	TBD		
Benchmarks/ Milestones	<ul style="list-style-type: none">• Create Planning Unit mitigation subcommittee (Planning Unit/LCFRB - April 2007)• Meet with Planning Unit and discuss SOW (Consultant - May 2007);• Attend and facilitate meetings and workshops with agencies and Planning Unit (Consultant, Planning Unit, Ecology, and Agencies – April 2007 through December 2008);• Coordinate and conduct technical evaluations (Consultant – April 2007 through November 2008);• Develop draft recommendations for strategies and guidelines (Consultant, Planning Unit, Ecology, and Agencies – April 2007 through November 2008);• Planning Unit review of draft materials (Planning Unit - November 2008);• Revisions to draft materials/finalization of recommendations (Planning Unit, LCFRB, and Consultant – November 2008); and• Planning Unit approval of Phase 1 and Phase 2 final guidelines (per SOW deliverables) for inclusion in DIP (Planning Unit – December 2008);		
Resource Needs			
Costs	Period Beginning: April 2007	Amount: \$90,000	
	Total: Approximately \$90,000		
Key Cost Drivers	Consulting services, staff time, travel, reproduction costs, etc.		
Funding Source(s)	Phase 4 Watershed Planning Funds, State General Fund.		
Logistical Needs	Coordination between the LCFRB, Planning Unit, Ecology and Department of Fish and Wildlife will be needed.		
Agreements, Ordinances, Permits & Approvals	Planning Unit approval will be needed for the final mitigation strategy and guidelines.		
Constraints and Uncertainties			
Constraint	The existing plan guidance is based upon maintaining a balance between meeting the water supply needs and maintenance of instream flows. The current level of funding is limited given the broad scope of elements that must be addressed in the mitigation guidelines.		
Response	Close coordination between the project consultants, Ecology, WDFW, the LCFRB and Planning Unit will be necessary to ensure the plan balance is maintained during strategy and guideline development. Development of a clear strategy and guidelines will reduce uncertainty regarding future mitigation obligations associated with reservation access and use. Additional funding should be sought to augment completion of this action during the implementation phase, and additional refinement may be needed over time.		
Operation and Maintenance			
Est. Annual Cost	TBD		
Describe O&M Tasks	Ongoing implementation of mitigation measures will involve effort and expenditures by multiple parties, including state, local and private entities.		

Task 3		Incorporate Mitigation Strategy and Guidelines into Detailed Implementation Plan (DIP) and 6-Year Implementation Work Schedules (IWS)	
Schedule			
Start Date	January 2008		
Planned Completion	Integration of Mitigation Strategy and Guidelines into DIP: Phase 1 products will be included as a component of the DIP to be approved in June 2008; Phase 2 products will be integrated in December 2008) Integration of Mitigation Strategy and Guidelines into 6-Year Implementation Work Schedules: TBD		
Actual Completion	TBD		
Benchmarks/ Milestones	<ul style="list-style-type: none">• Incorporate mitigation strategy and guidelines into DIP (LCFRB, Planning Unit, and Consultant – Phase 1 June 2008; Phase 2, December 2008); and• Integrate mitigation actions into partner 6-year implementation work schedules (LCFRB, Consultants, implementation partners – timing TBD).		
Resource Needs			
Costs	Period Beginning: January 2008	Amount: See Task 2	
	Total: See Task 2		
Key Cost Drivers	Consulting services; staff time		
Funding Source(s)	Phase 4 Watershed Planning funds, Salmon Recovery funds		
Logistical Needs	Use of office facilities, computers, access to Salmon PORT, etc		
Agreements, Ordinances, Permits & Approvals	Final approval of the Planning Unit will be needed. Mitigation strategies and guidelines must be adequately referenced in the Rule. Upon development of the guidelines, inter-local or other agreements may be needed between WDFW, Ecology and others for implementation.		
Constraints and Uncertainties			
Constraint	Integration of mitigation strategies and guidelines into the DIP and 6-Year Implementation Work Schedules will require actions, commitments, and participation by implementing partners.		
Response	LCFRB should continue to seek commitments for participation by implementing partners, and facilitate development of work schedules as necessary.		
Operation and Maintenance			
Estimated Annual Cost	TBD		
Describe O&M Tasks	Periodic updates of implementation work schedules and maintenance of Salmon PORT will be needed.		
General Comments			

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #909 AND SUBACTION #909A
REVISE AND UPDATE WATER SYSTEM PLANS

Action Summary¹	
Lead Partner(s)	Cities, Counties, Department of Health, Department of Ecology, Public Utility Districts, etc.
Oversight Responsibilities	Department of Health, Department of Ecology
Coordinating Partner(s)	Various
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input checked="" type="checkbox"/> Revised
Table Description	Action #909: Public Water Systems develop new or expanded supplies. Requires engineering studies; approval of water system plan; water rights processing; other permitting; SEPA compliance; construction; operations & maintenance. Standard procedures exist for all of these. (See Section 3.3.1).
	Subaction #909A: Revise and update water system plans in a manner consistent with the adopted WRIA 25/26 Plan (See Section 3.3.1).
Plan Background & Context	<p>Implementation of plan elements through the procedure outlined in Section 3.3.1 may require updating or revisions to existing Water System Plans (WSP), if the elements are not already identified in the WSP. . Public water system plans are required to show consistency with adopted watershed plans during the established 6-year update. Small Water System Management Programs (SWSMP) are not required to be updated once initial DOH approval is granted. These plans are governed by a variety of statutes, including but not limited to the following: Efficiency Requirements Act Chapter 5, Laws of 2003; State Board of Health Code RCW 43.20; RCW 70.119; WAC 246-290 and 246-293; and RCW 90.03.</p> <p>The water supply plans of each purveyor are subject to compliance with urban growth planning policies at county and municipal levels. Pg 3-17</p>
Relationship to Other Actions, and Coordination Needs	Individual purveyors are responsible for development of Water System Plans and SWSMPs, and completion of watershed plan actions may warrant modifications to these plans. Development of Water System Plans and SWSMPs requires coordination between purveyors, the Department of Ecology and the Department of Health. Roles and responsibilities are outlined in a document entitled "Municipal Water Law: Interim Planning Guidance for Waters System Plan Small Water System Management Program Approvals" (DOH, March 2004)

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Expected Outcomes	Modification of Water System Plans and SWSMP's as necessary or required to address incorporation and implementation of applicable Watershed Plan actions.
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy WSP-1: Access to Water Supplies (Pg 3-9) Policy WSP-2: Procedure for Evaluating Existing Supplies (Pg 3-13)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Identify Tasks that have not been Fully Funded	TBD

Supporting Tasks	
Task 1	Water System Plan Update
Schedule	
Start Date	TBD
Planned Completion	TBD
Actual Completion	TBD
Benchmarks/ Milestones	<p>Development or modification of a Water System Plan or SWSMP requires the following general tasks:</p> <ul style="list-style-type: none"> • Contract for plan development (if needed) • Develop or modify plan elements to address the following: <ul style="list-style-type: none"> ○ Description of water system ○ Basic Planning Data ○ System Analysis ○ Conservation Program ○ Source water protections ○ Operation and Maintenance program ○ Distribution facilities design and construction standards (Water System Plans) ○ Capital improvement program ○ Financial program • Completion of consistency determination • Compliance with SEPA (Water System Plan systems serving over 1000 connections) • Approval by lead authority • Department of Ecology review and comment on water right information • Approval from Department of Health

Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; modeling/data analysis and assessment; coordination meetings; project oversight and administration; etc.	
Funding Source(s)	Potential funding sources include water rate and hookup charges in affected service areas, grants or low-interest loans from existing state & federal programs	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	Approval of the Department of Health is required. Compliance with the following statutes may also be required, as applicable: Efficiency Requirements Act Chapter 5, Laws of 2003 (municipal systems); State Board of Health Code RCW 43.20; RCW 70.119; WAC 246-290 and 246-293 (systems planning under the Public Water System Coordination Act); and RCW 90.03. Compliance with WAC 197-11 and RCW 43.21 may also be required.	
Other		
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes.		
Operation and Maintenance		
Estimated Annual Cost	Low (less than \$50,000) (cost relate to a single plan update and do not reflect annual costs)	
Describe O&M Tasks	Periodic updates to SWSMP's and Water System Plans may be needed to accommodate changes in service needs, boundaries, and water right permits.	

General Comments
This action outlines the general steps that will need to be taken to develop or modify a Water System Plan or SWSMP as necessary to address implementation of plan actions.

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #909 AND SUBACTION #909B
(& RELATED SUBACTIONS #909B-1 AND #909B-2)
PUBLIC WATER SYSTEMS DEVELOP NEW OR EXPANDED SUPPLIES
IMPLEMENTATION SECTION 3.3.1 PROCESS

Action Summary¹	
Lead Partner(s)	Municipalities, cities, counties, purveyors, Department of Ecology, Department of Health, Others
Oversight Responsibilities	Department of Ecology, Department of Health
Coordinating Partner(s)	Municipalities, Counties, Cities, Purveyors, Planning Unit
Action Type	Requirement <input checked="" type="checkbox"/> Recommendation <input type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #909: Public Water Systems develop new or expanded supplies. Requires engineering studies; approval of water system plan; water rights processing; other permitting; SEPA compliance; construction; operations & maintenance. Standard procedures exist for all of these (See Section 3.3.1).
	<p>Subaction #909B-1: Ensure that the Cowlitz River is considered over other water resources tributary to the Columbia River in meeting future water supply needs, in accordance with the procedure outlined in Section 3.3.1. Use of the Cowlitz River should be consistent with the reservation quantity established for the River. Pg 3-10</p> <p>Subaction #909B-2: As new water supplies are needed, give preference to mainstem Columbia River sources, adjacent lowland reaches of tributaries subject to tidal effects, and associated ground waters, rather than from flow-limited of streams tributary to the Columbia (in accordance with Section 3.3.1). Pg 3-9</p>
Plan Background & Context	<p>A strategy has been developed to guide the implementation of the water supply policy. As outlined below, the strategy addresses two issues: new or expanded municipal supplies (requiring new water rights) and existing municipal supplies (not requiring new water rights). Pg 3-9</p> <p>Inherent in this strategy is the concept that, apart from tidal reaches and potential limited uses of the Lower Cowlitz River, no new surface water diversions are recommended by the Planning Unit as a form of water provision. In those cases where additional water supplies are needed, ground water development is recommended. However, as discussed in Section 3.1.2, ground water has been shown to likely be in communication with surface water in some parts of the basin. This is especially true for withdrawals from shallow wells in proximity to tributary streams. Therefore, priority should be given to ground water supply alternatives that avoid surface water impacts. Pg 3-9</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions, and Coordination Needs	As noted above, the strategy outlined in Section 3.3.1 will be applied to requests for new or expanded water supplies. This action therefore addresses and relates directly to source substitution Actions #909 and related Subactions (Cowlitz River #909B-1, Columbia River and tidal sources #909B-1 and B-2), Action #910 and related Subactions addressing planning studies, and Action #911 and Subactions relating to actual source replacement. Action #910E (aquifer mapping) and related Subactions will provide information to help identify regional water sources. Actions relating to enhanced conservation (#912 and Subactions) are addressed in Step #1 of Section 3.3.1. This action also includes implementation of mitigation measures associated with use of water reservations. Given the comprehensive nature of Section 3.3.1, close coordination between the purveyor, Department of Ecology, Department of Fish and Wildlife, other affected jurisdictions and the Planning Unit may be needed. Pgs 3-9 through 3-12
Expected Outcomes	Development of water supplies that: Meet new or expanded needs for water supply consistent with adopted land use plans (see WSP-1); and Avoid or minimize effects on stream flows or aquatic habitat in stream reaches where flow conditions are an important factor for sustaining aquatic life, including fish populations in their various life stages. (see WSP-2)
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy WSP-1: Access to Water Supplies (Pg 3-9) Policy WSP-1: Reservations for Water Supply (Pg 3-12) Policy WSP-1: Columbia River Resource (Pg 3- 9) Policy WSP-1: Cowlitz River Resource (Pg 3-10) Policy WSP-1: Water Supply (Pg 3-10) Policy WSP-1: Aquifer Mapping (Pg 3-11) Policy WSP-2: Stream Flow Protection in Developing Supplies (Pgs 3-9) Policy WSP-2: Procedure for Evaluating Existing Supplies (Pg 3-13) Policy WSP-2: Water Supply – New Developments and Industrial Supplies (pg 3-13) Policy WSP-2: Water Supply – Small Water Systems (Pg 3-20) Policy WSP-2: Industrial Water Supply (Pg 3-23) Policy WSP-2: Agricultural Water Supply (Pg 3-23) Policy SFP-2: Restrictions on New Water Rights (Pg 4-18 to 4-19) Policy SFP-5: Source Substitution (Pg 4-26)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Medium
Identify Tasks that have not been Fully Funded	Tasks 1 through 6

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Evaluate Relationship of Proposed Supply Project to Stream Flows (If existing source is being considered)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Pre-planning: Identify funding sources<ul style="list-style-type: none">○ Secure funds○ Prepare RFP/hire contractor (if needed)○ Conduct water demand projections and analysis<ul style="list-style-type: none">▪ Coordinate with existing service providers▪ Quantify land use in proposed service area▪ Project build out density in the service area▪ Project water demand for planning horizon• Determine proposed amount of requested water right• Conduct analysis of instream flow impacts (location, timing, quantity, fish and aquatic resource impacts, etc.)• Options -<ul style="list-style-type: none">○ If impacts identified, proceed to Task 2○ If no impacts identified:<ul style="list-style-type: none">▪ Apply to Ecology for water right▪ Implement source replacement or development actions▪ Implement any required optimization and conservation actions	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; project oversight and administration; etc.	
Funding Source(s)	Water rates and hookup charges in affected service area. Grants or low-interest loans from existing state & federal programs, etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	Water right permit from Ecology would be needed for new or expanded sources, or for temporary withdrawals associated with testing.	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; potential surface water impacts will affect project outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	Not Applicable	
Describe O&M Tasks	Not Applicable	

Task 2	Conduct Alternative Supply Analysis (If Task 1 identifies flow regime impacts)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">Identify potential supply source alternatives, including but not limited to:<ul style="list-style-type: none">Different (most likely deeper) aquiferPurchase of water neighboring communityDevelopment of tidally-influenced sourcePurchase from regional water system(Note: addresses Subactions #909B-1 and #909B-2)Coordinate with adjacent or existing service providers as neededConduct feasibility analysis of alternatives (impacts, costs, logistics, etc.)Publish alternatives analysis reportOptions -<ul style="list-style-type: none">If preferred and practicable alternative is available:<ul style="list-style-type: none">Apply to Ecology for water rightImplement source replacement or development actionsImplement any required optimization and conservation actionsIf no preferred and practicable alternative is available, proceed to Task 3	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; project oversight and administration; etc.	
Funding Source(s)	Water rates and hookup charges in affected service area. Grants or low-interest loans from existing state & federal programs, etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work and assessment; revisions to Water Supply Plan and/or Small Water System Management Programs (SWSMP) may be required, which may also necessitate compliance with SEPA.	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect alternatives considered in the analysis; potential surface water impacts will affect project outcomes and identification of a preferred alternative; etc.		
Operation and Maintenance		
Est. Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 3		Petition Ecology to Utilize Reservation (If no practicable alternative is identified under Task 2)	
Schedule			
Start Date	TBD		
Planned Completion	TBD		
Actual Completion	TBD		
Benchmarks/ Milestones	<ul style="list-style-type: none">• Develop application package for proposed water right• Develop proposal for off-setting and mitigating actions addressing<ul style="list-style-type: none">◦ Acquisition of upstream water rights◦ Flow related actions◦ Habitat restoration actions (per Section 3.3.1)• Submit application to Ecology• Ecology review and coordination with WDFW• Consultation with Planning Unit (if needed)• Decision on application considering consistency with plan guidance, proposal for off-setting and mitigating actions, and requirements of RCW 90.03.290, including the following:<ul style="list-style-type: none">◦ Water will be put to beneficial use◦ There is no impairment to existing, or senior, rights;◦ Flow related actions◦ Water is available for appropriation◦ Issuance of the requested water right will not be detrimental to the public welfare.		
Resource Needs			
Costs	Period Beginning: TBD	Amount: TBD	
	Total: TBD		
Key Cost Drivers	Consulting services; staff time; application fees; modeling/data analysis and assessment; acquisition of water rights; agency coordination meetings; field assessment and studies; project administration; etc.		
Funding Source(s)	Proponent: Water rates and hookup charges in affected service area. Grants or low-interest loans from existing state & federal programs, etc. Permitting agencies: State General Fund		
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; etc.		
Agreements, Ordinances, Permits & Approvals	Water right permit from Ecology will be needed. Permit outcomes will depend upon Ecology’s permit approval criteria and consistency with plan guidance and mitigation requirements; permit delays may result from agency processing timelines and limitations.		
Constraints and Uncertainties			
Constraint	Legal requirements and standards associated with individual permits may limit project alternatives and mitigation requirements; differences in permit requirements may lead to incompatible outcomes; if not factored into analyses, mitigation requirements may increase project costs above projected; permit review and approval timelines may delay project construction or limit construction periods; permit processing timelines will depend upon the quality and clarity of information provided for review; reserve amount will affect quantity of water available for supply needs.		
Response	Develop a sound application proposal consistent with the mitigation guidelines and reserve strategy outlined in the plan.		
Operation and Maintenance			
Est. Annual Cost	Not applicable		
O&M Tasks	Not applicable		

Task 4	Project Design and Engineering (If water right permit granted)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> Contract for design and engineering services (or use existing staff) Develop preliminary design and engineering plans Prepare final design and engineering plans for approval Approval of preferred alternative by lead authority/ authorities, Department of Health and Department of Ecology 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; modeling/data analysis and assessment; coordination meetings; public outreach; project oversight and administration; plan review and approval; etc	
Funding Source(s)	Water rates and hookup charges in affected service area. Grants or low-interest loans from existing state & federal programs, etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; field equipment; drafting hardware and software; etc	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work; approval of final design and engineering by the project proponent, Department of Health and Department of Ecology.	
Other		
Constraints and Uncertainties		
Constraint	Availability of funding may limit ability to conduct design and engineering analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect design and engineering alternatives; etc.	
Operation and Maintenance		
Estimated Annual Cost	Not applicable	
Describe O&M Tasks	Not applicable	

Task 5		Project Permitting and Approvals	
Schedule			
Start Date	TBD		
Planned Completion	TBD		
Actual Completion	TBD		
Benchmarks/ Milestones	<ul style="list-style-type: none">• Complete and file permit applications: shoreline substantial development permit; critical areas; floodplain; grading and clearing; Section 404 (if needed); and Section 401 Certification (if needed);• Prepare and submit revisions to Water System Plan for review and approval by Washington Departments of Health and Ecology;• Prepare and submit biological assessment for ESA consultation (if needed);• Complete SEPA (if EIS needed, more refined benchmarks and milestones will be needed); and• Secure necessary permits, authorizations and approvals		
Resource Needs			
Costs	Period Beginning: TBD	Amount: TBD	
	Total: TBD		
Key Cost Drivers	Consulting services; staff time; application fees; modeling/data analysis and assessment; agency coordination meetings; public outreach and notification; field assessment and studies; project administration; publication/ printing costs; etc.		
Funding Source(s)	Water rates in affected service area; grants or low-interest loans from existing state & federal programs		
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; etc.		
Agreements, Ordinances, Permits & Approvals	Shoreline substantial development permit; critical areas permit; floodplain permit; grading and clearing permit; Section 404 permit (if needed); Section 401 Certification (if needed); water right permit; SEPA/NEPA compliance; and water system plan update and approval. Revisions to the Water System Plan may be required, which may also necessitate compliance with SEPA.		
Other			
Constraints and Uncertainties			
Constraint	Legal requirements and standards associated with individual permits may limit project alternatives and mitigation requirements; differences in permit requirements may lead to incompatible outcomes; if not factored into analyses, mitigation requirements may increase project costs above projected; permit review and approval timelines may delay project construction or limit construction periods; permit processing timelines will depend upon the quality and clarity of information provided for review.		
Operation and Maintenance			
Estimated Annual Cost	TBD		
Describe O&M Tasks	TBD		

Task 6		Project Construction	
Schedule			
Start Date	TBD		
Planned Completion	TBD		
Actual Completion	TBD		
Benchmarks/ Milestones	<ul style="list-style-type: none">• Prepare final construction plans and specifications• Prepare RFP and hire contractor(s);• Initiate construction;• Project management and oversight; and• Project completion• Operation and Maintenance		
Resource Needs			
Costs	Period Beginning: TBD	Amount: TBD	
	Total: TBD		
Key Cost Drivers	Consulting services; contractor services; staff time; permitting and application fees; project oversight and administration; mitigation implementation; monitoring; permit fees; supplies and materials; project meetings; compliance inspections; etc.		
Funding Source(s)	Water rates and hookup charges in affected service area. Grants or low-interest loans from existing state & federal programs, etc.		
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; equipment rentals; supply and material handling and transport; etc		
Agreements, Ordinances, Permits & Approvals	Will vary depending on specific project. Examples of required permits include: shoreline substantial development permit; critical areas; floodplain; grading and clearing; ESA consultation; Section 404; Section 401 certification; hydraulic project approval; and SEPA compliance.		
Constraints and Uncertainties			
Constraint	Construction may be delayed if permit approvals are not secured sufficiently in advance; changes in supply and material costs may affect construction timelines and budgets; weather constraints affect project timing; permit requirements may affect construction methods, timing and design.		
Response	Close coordination with permitting agencies will be needed throughout alternatives review analysis and project design, engineering and construction phases.		
Operation and Maintenance			
Estimated Annual Cost	TBD		
Describe O&M Tasks	Once completed, the project will require ongoing monitoring, infrastructure maintenance and upgrades. Project plans and funding approaches should include provisions for long-term operation and maintenance.		

General Comments	
<p>General Constraints and Uncertainties:</p> <ul style="list-style-type: none"> • Availability of funding for feasibility, design/engineering, and construction work; and • Approval of regulatory permits, approvals and authorizations 	

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION 909 and SUBACTION #909D
PUBLIC WATER SYSTEMS DEVELOP NEW OR EXPANDED SUPPLIES
CITY OF LONGVIEW & COWLITZ PUD - IMPLEMENT REGIONAL WATER TREATMENT
PLAN EXPANSION ALTERNATIVES

Action Summary¹	
Lead Partner(s)	City of Longview, Cowlitz Public Utility District (PUD)
Oversight Responsibilities	City of Longview, Cowlitz PUD, Department of Ecology, Department of Health
Coordinating Partner(s)	City of Kelso
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input type="checkbox"/> New <input checked="" type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #909: Public Water Systems develop new or expanded supplies. Requires engineering studies; approval of water system plan; water rights processing; other permitting; SEPA compliance; construction; operations & maintenance. Standard procedures exist for all of these (See Section 3.3.1).
	Subaction #909D: Implement the Regional Water Treatment Plant (RWTP) expansion alternatives presented in the Longview-Kelso Urban Area Comprehensive Water Plan (1999) to meet the area's future water demands. Section 3.3.1, Pgs 3-14, 3-15, 3-16 and 3-17
Plan Background & Context	<p>The Planning Unit endorses the two alternatives presented in the Longview-Kelso Urban Area Comprehensive Water Plan (1999) to meet the area's future water demands. Both alternatives involve expansion of the RWTP to meet the future demands of Longview and the Cowlitz PUD. The future demands of Kelso would also be met by the RWTP under one alternative, while such demands would be met by new ground water wells under the other alternative. The City of Longview currently has the necessary water rights to meet its demand and RWTP expansion. Furthermore, the RWTP intake is low in the Cowlitz River basin and is within the zone of tidal influence. The additional diversions planned by the City are not expected to negatively impact habitat and other instream needs, as long as plans are consistent with the approach described in Section 3.3.1. Pgs 3-14 and 3-15</p> <ol style="list-style-type: none"> 1. New Kelso Ground Water Source: (i) all future water demand for both Longview and the Cowlitz PUD would be through expansion of the RWTP, which would provide water only to Longview and Cowlitz PUD; (ii) existing Kelso WTP would convert to a surface water treatment plant and would maintain its current capacity; and (iii) new ground water wells would be installed in South Kelso along with associated treatment plant(s) as necessary. 2. Kelso Participates in Longview RWTP: (i) existing Kelso WTP

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

	<p>would convert to a surface water treatment plant and would maintain its current capacity; and (ii) All future demand for Longview, Cowlitz PUD, and Kelso would be met through expansion of the RWTP. Pgs 3-14, 3-15 and 3-16</p> <p>The same recommendations for the Cowlitz PUD are applied as those for the City of Longview, since the two entities share the same source of supply and coordinate planning. Pg 3-17</p> <p>Note: A new Water System Plan for the City of Longview was approved by the Department of Health in August of 2006. Revisions address development of a new water source because of siltation concerns at the existing intake and treatment plant.</p>
Relationship to Other Actions, and Coordination Needs	This Subaction is integrally related to the City of Kelso's Subaction #909E, which involves implementation of groundwater well development alternatives presented in the Longview-Kelso Urban Area Comprehensive Water Plan (1999) to meet the areas future water demands. Close coordination between the City of Longview, Cowlitz PUD, and City of Kelso will therefore be required. Completion of this action would also be consistent with the regional water source Subactions #909B-1 and #909B-2.
Expected Outcomes	Expansion of a regional water supply source to meet the long-term growth needs of the Longview-Kelso region, in a manner consistent with the approach outlined in Section 3.3.1
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	<p>Policy WSP-1: Access to Water Supplies (Pg 3-9)</p> <p>Policy WSP-1: Water Supply – Longview, Kelso and Cowlitz PUD (Pg 3-14 and 3-15)</p> <p>Policy WSP-1: Columbia River Resource (Pg 3-9)</p> <p>Policy WSP-1: Cowlitz River Resource (Pg 3-10)</p> <p>Policy WSP-1: Water Supply (Pg 3-10)</p> <p>Policy WSP-1: Tidally Influenced Reaches (Pg 3-14)</p> <p>Policy WSP-2: Procedure for Evaluating Existing Water Supplies (Pg 3-13)</p> <p>Policy WSP-2: Water Supply – New Developments and Industrial Supplies (Pg 3-13)</p> <p>Policy SFP-2: Restriction on New Water Rights (4-18 and 4-19)</p>
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	High
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Identify Preferred Alternative (Assumes water right permits already granted per Section 3.4.1)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Coordinate with adjacent or existing service providers as needed• Based on existing RWTP guidance, projected supply demands, costs, feasibility and other appropriate factors, identify potential supply source alternatives, consistent with Section 3.3.1.• Conduct feasibility analysis of alternatives• Publish alternatives analysis report• Approval of “preferred alternative” by appropriate authorities (e.g., City of Longview, Cowlitz PUD, City of Kelso)	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; project oversight and administration; etc.	
Funding Source(s)	Water rates in affected service area; grants or low-interest loans from existing state & federal programs	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc	
Agreements, Ordinances, Permits & Approvals	Formal agreements between the City of Longview, City of Kelso, and Cowlitz PUD may be required; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work and assessment; etc.	
Other		
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect alternatives considered in the analysis; sediment dynamics and maintenance requirements at existing water intakes may affect project feasibility; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 2	Water System Plan Update (If needed)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	If needed, modification of a Water System Plan or SWSMP would require the following general tasks: <ul style="list-style-type: none">• Contract for plan development (or conduct with existing staff)• Develop or modify plan elements to address the following:<ul style="list-style-type: none">◦ Description of water system◦ Basic Planning Data◦ System Analysis◦ Conservation Program◦ Source water protections◦ Operation and Maintenance program◦ Distribution facilities design and construction standards◦ Capital improvement program◦ Financial program• Completion of consistency determination• Compliance with SEPA• Approval by lead authority• Approval from Department of Health and Department of Ecology	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; modeling/data analysis and assessment; coordination meetings; project oversight and administration; etc.	
Funding Source(s)	Potential funding sources include water rate and hookup charges in affected service areas, grants or low-interest loans from existing state & federal programs	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies;etc	
Agreements, Ordinances, Permits & Approvals	Approval of the Department of Health is required. Compliance with the following statutes is also required: Efficiency Requirements Act Chapter 5, Laws of 2003; State Board of Health Code RCW 43.20; RCW 70.119; WAC 246-290 and 246-293; and RCW 90.03. Compliance with WAC 197-11 and RCW 43.21 may also be required.	
Constraints and Uncertainties		
Constraint	Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes.	
Operation and Maintenance		
Est. Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 3	Project Design and Engineering	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">Contract for design and engineering services (or conduct with existing staff)Conduct field testing as needed (permits may be required)Develop preliminary design and engineering plans for the preferred alternativeReview of preliminary design and engineering plansPrepare final design and engineering plans for approval by City of Longview, Cowlitz PUD, City of Kelso, Department of Ecology and Department of Health (approval entities will vary depending upon option selected)Approval of final design and engineering plans	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; modeling/data analysis and assessment; coordination meetings; public outreach; project oversight and administration; plan review and approval; etc.	
Funding Source(s)	Water rates and hookup charges in affected service area; grants or low-interest loans from existing state & federal programs, etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; field equipment; drafting hardware and software; etc.	
Agreements, Ordinances, Permits & Approvals	Approval of final design and engineering by the project proponent(s), Department of Health and Department of Ecology. Permitting may be needed for any required field-testing or analyses.	
Other		
Constraints and Uncertainties		
Constraint	Availability of funding may limit ability to conduct design and engineering analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect design and engineering alternatives; etc.	
Operation and Maintenance		
Estimated Annual Cost	Not applicable	
Describe O&M Tasks	Not applicable	

Task 4	Project Construction	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Prepare final construction plans and specifications for permitting• Permitting: TBD (e.g., shoreline substantial development permit; critical areas; floodplain; grading and clearing; Section 404; Section 401 Certification; hydraulic project approval; SEPA compliance, etc).• Prepare RFP and hire contractor(s) (or conduct with existing staff);• Initiate construction;• Project management and oversight; and• Project completion	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; contractor services; staff time; permitting and application fees; project oversight and administration; mitigation implementation; monitoring; permit fees; supplies and materials; project meetings; compliance inspections; etc.	
Funding Source(s)	Water rates and hookup charges in affected service area. Grants or low-interest loans from existing state & federal programs, etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; equipment rentals; supply and material handling and transport; etc.	
Agreements, Ordinances, Permits & Approvals	Will vary depending on specific project. Examples of required permits include: shoreline substantial development permit; critical areas; floodplain; grading and clearing; ESA consultation; Section 404; Section 401 certification; hydraulic project approval; and SEPA compliance.	
Constraints and Uncertainties		
Constraint	Construction may be delayed if permit approvals are not secured sufficiently in advance; changes in supply and material costs may affect construction timelines and budgets; weather constraints affect project timing; permit requirements may affect construction methods, timing and design; etc.	
Response	Close coordination with permitting agencies will be needed throughout alternatives review analysis and project design, engineering and construction phases.	
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	Once completed, the project will require ongoing monitoring, infrastructure maintenance and upgrades. Project plans and funding approaches should include provisions for long-term operation and maintenance.	
General Comments		
Ongoing maintenance and operation problems relating to the existing Cowlitz River surface water intake may limit project feasibility.		

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #909 AND SUBACTION #909E
PUBLIC WATER SYSTEMS DEVELOP NEW OR EXPANDED SUPPLIES
CITY OF KELSO - IMPLEMENT REGIONAL WATER TREATMENT PLAN EXPANSION
ALTERNATIVES

Action Summary¹	
Lead Partner(s)	City of Kelso
Oversight Responsibilities	City of Kelso, Department of Ecology, Department of Health
Coordinating Partner(s)	City of Longview, Cowlitz PUD
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input type="checkbox"/> New <input checked="" type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #909: Public Water Systems develop new or expanded supplies. Requires engineering studies; approval of water system plan; water rights processing; other permitting; SEPA compliance; construction; operations & maintenance. Standard procedures exist for all of these (See Section 3.3.1).
	Subaction #909E: Implement the Groundwater Well Development alternatives presented in the Longview-Kelso Urban Area Comprehensive Water Plan (1999) to meet the area's future water demands. Section 3.3.1. Pg 3-16
Plan Background & Context	<p>The Planning Unit endorses the alternatives presented in the Longview-Kelso Urban Area Comprehensive Water Plan (1999) to meet the area's future water demands. Both alternatives involve expansion of the RWTP to meet the future demands of Longview and the Cowlitz PUD. The future demands of Kelso would also be met by the RWTP under one alternative, while such demands would be met by new ground water wells under the other alternative. Should new wells be developed, they may be hydraulically connected to the Cowlitz River like the existing Ranney well. However, they would be located low in the Cowlitz River basin and within the zone of tidal influence. The additional ground water wells planned by the City are not expected to negatively impact habitat and other instream needs, as long as plans are consistent with the policies developed in this watershed plan. Pgs 3-15, 3-16 and 3-17</p> <p>The Planning Unit also supports the City of Kelso's second alternative to participate in the expansion of the RWTP. See Section 3.4.1 Pgs 3-15, 3-16 and 3-17</p> <p>Note: A new Water System Plan for the City of Kelso was approved by the Department of Health in August of 2006.</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions, and Coordination Needs	This Subaction is integrally related to the City of Longview and Cowlitz PUD's Subaction #909D, which involves implementation of source expansion alternatives presented in the Longview-Kelso Urban Area Comprehensive Water Plan (1999) to meet the areas future water demands. Close coordination between the City of Longview, Cowlitz PUD, and City of Kelso will therefore be required. Completion of this action would also be consistent with the regional water source Subactions #909B-1 and #909B-2.
Expected Outcomes	Expansion of a regional water supply source to meet the long-term growth needs of the Longview-Kelso region, in a manner consistent with the approach outlined in Section 3.3.1
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy WSP-1: Access to Water Supplies (Pg 3-9) Policy WSP-1: Water Supply – Longview, Kelso and Cowlitz PUD (Pg 3-14 and 3-15) Policy WSP-1: Columbia River Resource (Pg 3-9) Policy WSP-1: Cowlitz River Resource (Pg 3-10) Policy WSP-1: Water Supply (Pg 3-10) Policy WSP-1: Tidally Influenced Reaches (Pg 3-14) Policy WSP-2: Procedure for Evaluating Existing Water Supplies (Pg 3-13) Policy WSP-2: Water Supply – New Developments and Industrial Supplies (Pg 3-13) Policy SFP-2: Restriction on New Water Rights (4-18 and 4-19)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	High
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Identify Preferred Alternative (Assumes water right permits already granted per Section 3.4.1)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> Coordinate with adjacent or existing service providers as needed Based on existing RWTP guidance, projected supply demands, costs, feasibility and other appropriate factors, identify potential supply source alternatives, consistent with Section 3.3.1. Conduct feasibility analysis of alternatives Publish alternatives analysis report Approval of "preferred alternative" by appropriate authorities (e.g., City of Longview, Cowlitz PUD, City of Kelso) 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; project oversight and administration; etc.	
Funding Source(s)	Water rates in affected service area; grants or low-interest loans from existing state & federal programs	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc	
Agreements, Ordinances, Permits & Approvals	Formal agreements between the City of Longview, City of Kelso, and Cowlitz PUD may be required; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work and assessment; etc.	
Other		
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect alternatives considered in the analysis; sediment dynamics and maintenance requirements at existing water intakes may affect project feasibility; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 2	Water System Plan Update (If needed)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<p>If needed, modification of a Water System Plan or SWSMP would require the following general tasks:</p> <ul style="list-style-type: none"> • Contract for plan development (or conduct with existing staff) • Develop or modify plan elements to address the following: <ul style="list-style-type: none"> ◦ Description of water system ◦ Basic Planning Data ◦ System Analysis ◦ Conservation Program ◦ Source water protections ◦ Operation and Maintenance program ◦ Distribution facilities design and construction standards ◦ Capital improvement program ◦ Financial program • Completion of consistency determination • Compliance with SEPA • Approval by lead authority • Approval from Department of Health and Department of Ecology 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; modeling/data analysis and assessment; coordination meetings; project oversight and administration; etc.	
Funding Source(s)	Potential funding sources include water rate and hookup charges in affected service areas, grants or low-interest loans from existing state & federal programs	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc	
Agreements, Ordinances, Permits & Approvals	Approval of the Department of Health is required. Compliance with the following statutes is also required: Efficiency Requirements Act Chapter 5, Laws of 2003; State Board of Health Code RCW 43.20; RCW 70.119; WAC 246-290 and 246-293; and RCW 90.03. Compliance with WAC 197-11 and RCW 43.21 may also be required.	
Other		
Constraints and Uncertainties		
Constraint	Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes.	
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 3	Project Design and Engineering	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> Contract for design and engineering services (or conduct with existing staff) Conduct field testing as needed (permits may be required) Develop preliminary design and engineering plans for the preferred alternative Review of preliminary design and engineering plans Prepare final design and engineering plans for approval by City of Longview, Cowlitz PUD, City of Kelso, Department of Ecology and Department of Health (approval entities will vary depending upon option selected) Approval of final design and engineering plans 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; modeling/data analysis and assessment; coordination meetings; public outreach; project oversight and administration; plan review and approval; etc.	
Funding Source(s)	Water rates and hookup charges in affected service area; grants or low-interest loans from existing state & federal programs, etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; field equipment; drafting hardware and software; etc.	
Agreements, Ordinances, Permits & Approvals	Approval of final design and engineering by the project proponent(s), Department of Health and Department of Ecology. Permitting may be needed for any required field-testing or analyses.	
Other		
Constraints and Uncertainties		
Availability of funding may limit ability to conduct design and engineering analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect design and engineering alternatives; etc.		
Operation and Maintenance		
Estimated Annual Cost	Not applicable	
Describe O&M Tasks	Not applicable	

Task 4	Project Construction	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Prepare final construction plans and specifications for permitting • Permitting: TBD (e.g., shoreline substantial development permit; critical areas; floodplain; grading and clearing; Section 404; Section 401 Certification; hydraulic project approval; SEPA compliance, etc). • Prepare RFP and hire contractor(s) (or conduct with existing staff); • Initiate construction; • Project management and oversight; and • Project completion 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; contractor services; staff time; permitting and application fees; project oversight and administration; mitigation implementation; monitoring; permit fees; supplies and materials; project meetings; compliance inspections; etc.	
Funding Source(s)	Water rates and hookup charges in affected service area. Grants or low-interest loans from existing state & federal programs, etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; equipment rentals; supply and material handling and transport; etc.	
Agreements, Ordinances, Permits & Approvals	Will vary depending on specific project. Examples of required permits include: shoreline substantial development permit; critical areas; floodplain; grading and clearing; ESA consultation; Section 404; Section 401 certification; hydraulic project approval; and SEPA compliance.	
Constraints and Uncertainties		
Constraint	Construction may be delayed if permit approvals are not secured sufficiently in advance; changes in supply and material costs may affect construction timelines and budgets; weather constraints affect project timing; permit requirements may affect construction methods, timing and design; etc.	
Response	Close coordination with permitting agencies will be needed throughout alternatives review analysis and project design, engineering and construction phases.	
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	Once completed, the project will require ongoing monitoring, infrastructure maintenance and upgrades. Project plans and funding approaches should include provisions for long-term operation and maintenance.	
General Comments		
Ongoing maintenance and operation problems relating to the existing Cowlitz River surface water intake may limit project feasibility.		

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #909 AND SUBACTIONS #909F and #913B
PUBLIC WATER SYSTEMS DEVELOP NEW OR EXPANDED SUPPLIES
URBAN, SUBURBAN OR INDUSTRIAL FACILITIES

Action Summary¹	
Lead Partner(s)	Urban/Suburban Development Providers, Industrial facilities - TBD
Oversight Responsibilities	Department of Ecology, Department of Health
Coordinating Partner(s)	Municipalities, Counties, Cities, Purveyors, Planning Unit
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #909: Public Water Systems develop new or expanded supplies. Requires engineering studies; approval of water system plan; water rights processing; other permitting; SEPA compliance; construction; operations & maintenance. Standard procedures exist for all of these (See Section 3.3.1).
	Subaction #909F: New urban or suburban developments or industrial facilities that require new or expanded water supplies shall seek to obtain water from existing municipal or other water suppliers rather than developing separate sources of supply. If an existing municipal supplier or other water supplier is not available, then the new development or industrial facility should follow the procedure described in Section 3.3.1. Pg 3-13
	Action #913: Industrial supplies: Expand conservation & reuse; develop non-potable sources; connect to municipal systems (See 3.5.3)
	Subaction #913B: Where feasible, industries requiring additional sources of supply in the future should connect to existing municipal water supplies. Where not feasible due to technical issues or cost, it is recommended that the industry evaluate alternative sources as described in Section 3.3.1. Pg 3-23
Plan Background & Context	<p>In general, the Planning Unit recommends that new urban or suburban developments or industrial facilities that require new or expanded water supplies shall seek to obtain water from existing municipal or other water suppliers rather than developing separate sources of supply. (Note: this would not apply to agricultural uses). If an existing municipal supplier or other water supplier is not available, then the new development or industrial facility should follow the procedure described in Section 3.3.1. Options to provide financial incentives and/or technical assistance to large industries for water conservation and water reuse will be explored, where this can be linked directly to protection of stream flows. Pg 3-13</p> <p>Projection of water usage by self-supplied industry in the future is highly uncertain. In general, a basic assumption is that existing industries will continue to use the same amount of water used now; and that new industries will be supplied by major public water systems, with their needs included in existing demand projections. Pg 3-23</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions, and Coordination Needs	Implementation of this action relies upon use of existing municipal or other water sources to meet urban, suburban or industrial facility needs. This Subaction therefore relates to water supply actions for municipal providers (e.g. Action #909 and Subactions). If existing sources are not available, then the strategy outlined in Section 3.3.1 would be applied as described in Subaction 909B. This Subaction also relates to Industrial Supply Subactions #913A, #913B, #913C and #913D, which address technical assistance, development of Columbia River non-potable supplies, and financial incentives for water conservation and reuse. Given the comprehensive nature of Section 3.3.1, close coordination between the action lead and existing purveyors and regulatory agencies will be needed. Pgs 3-9 through 3-12
Expected Outcomes	Development of water supplies that: Meet new or expanded needs for urban, suburban and industrial water supply consistent with adopted land use plans (see WSP-1); and Avoid or minimize effects on stream flows or aquatic habitat in stream reaches where flow conditions are an important factor for sustaining aquatic life, including fish populations in their various life stages. (see WSP-2)
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy WSP-1: Access to Water Supplies (Pg 3-9) Policy WSP-1: Reservations for Water Supply (Pg 3-12) Policy WSP-1: Columbia River Resource (Pg 3- 9) Policy WSP-1: Cowlitz River Resource (Pg 3-10) Policy WSP-1: Water Supply (Pg 3-10) Policy WSP-1: Aquifer Mapping (Pg 3-11) Policy WSP-1: Tidally-influenced Reaches (Pg 3-14) Policy WSP-2: Stream Flow Protection in Developing Supplies (Pgs 3-9) Policy WSP-2: Procedure for Evaluating Existing Supplies (Pg 3-13) Policy WSP-2: Water Supply – New Developments and Industrial Supplies (pg 3-13) Policy WSP-2: Industrial Water Supply (Pg 3-23) Policy SFP-5: Source Substitution (Pg 4-26)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Medium to High
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Supply Needs and Availability Assessment	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Identify funding sources• Secure funds• Prepare RFP/hire contractor (or complete with existing staff)• Conduct water demand assessment for planning horizon• Determine gap between existing water rights and future water demand, and net quantity needed• Identify existing purveyors that could potentially provide service• For each purveyor, review existing water right information using the following sources:<ul style="list-style-type: none">○ WRATS○ DOH database○ WRIA 25/26 Plan○ Inchoate assessment○ Purveyor information• Identify potential providers based upon initial screening of quantities available in relation to documented demand)• Contact potential providers to discuss possibility of obtaining water Options - <ul style="list-style-type: none">• If purveyor is willing and water rights are available and adequate, negotiate supply agreement and proceed to Task 2.• If purveyors are not willing and/or water is not available and adequate, pursue source expansion/substitution actions per Section 3.3.1 (See Action 909B)	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; modeling/data analysis and assessment; coordination meetings; project oversight and administration; etc.	
Funding Source(s)	Water rates and hookup charges in affected service area; grants or low-interest loans from existing state & federal programs; private industry; public water system; private industry; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc	
Agreements, Ordinances, Permits & Approvals	Water right permit from Ecology may be needed if expansion of existing purveyor source is needed; if multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work and assessment; etc	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes.		

Operation and Maintenance	
Estimated Annual Cost	TBD
Describe O&M Tasks	TBD

Task 2	Project Design and Engineering	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">Contract for design and engineering services (or use existing staff)Develop preliminary design and engineering plansPrepare final design and engineering plans for approvalApproval of preferred alternative by project proponent, purveyor, Department of Health and Department of Ecology	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; modeling/data analysis and assessment; coordination meetings; public outreach; project oversight and administration; plan review and approval; etc.	
Funding Source(s)	Water rates and hookup charges in affected service area; grants or low-interest loans from existing state & federal programs; private industry; public water system; private industry; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; field equipment; drafting hardware and software; etc.	
Agreements, Ordinances, Permits & Approvals	Approval of final design and engineering by the project proponent, purveyor, Department of Health and Department of Ecology; modification of existing purveyor Water System Plans may be needed (See Action 909B); if multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work; etc	
Other		
Constraints and Uncertainties		
Constraint	Availability of funding may limit ability to conduct design and engineering analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect design and engineering alternatives; etc.	
Operation and Maintenance		
Estimated Annual Cost	Not applicable	
Describe O&M Tasks	Not applicable	

Task 3	Project Construction	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Prepare final construction plans and specifications for permitting• Permitting: TBD (e.g., shoreline substantial development permit; critical areas; floodplain; grading and clearing; Section 404; Section 401 Certification; hydraulic project approval; SEPA compliance, etc).• Prepare RFP and hire contractor(s) (or use existing staff)• Initiate construction• Project management and oversight• Project completion• Operation and Maintenance	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; contractor services; staff time; permitting and application fees; project oversight and administration; mitigation implementation; monitoring; permit fees; supplies and materials; project meetings; compliance inspections; etc.	
Funding Source(s)	Water rates and hookup charges in affected service area; grants or low-interest loans from existing state & federal programs; private industry; public water system; private industry; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; equipment rentals; supply and material handling and transport; etc.	
Agreements, Ordinances, Permits & Approvals	Permits for construction will vary depending on specific project. Examples of required permits include: shoreline substantial development permit; building; critical areas; floodplain; grading and clearing; ESA consultation; Section 404; Section 401 certification; hydraulic project approval; and SEPA compliance. Approval of final construction plans by the project proponent, purveyor, Department of Health and/or Department of Ecology may be required; if multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions related to construction; contracts between proponents and consultants/contractors may be needed; etc.	
Constraints and Uncertainties		
Constraint	Construction may be delayed if permit approvals are not secured sufficiently in advance; changes in supply and material costs may affect construction timelines and budgets; weather constraints affect project timing; permit requirements may affect construction methods, timing and design.	
Response	Close coordination with permitting agencies and purveyor will be needed throughout analysis, project design, engineering and construction phases.	

Operation and Maintenance	
Estimated Annual Cost	TBD
Describe O&M Tasks	Once completed, the project will require ongoing monitoring, infrastructure maintenance and upgrades. Project plans and funding approaches should include provisions for long-term operation and maintenance, in coordination with purveyors.

General Comments

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #910 AND
SUBACTIONS #910A AND #911D
PLANNING STUDIES TO EXPLORE
ALTERNATIVE SOURCES OF MUNICIPAL SUPPLY**

Action Summary¹	
Lead Partner(s)	Public Water Systems/Planning Unit
Oversight Responsibilities	Public Water Systems
Coordinating Partner(s)	Planning Unit, Department of Ecology, Department of Health, Department of Fish and Wildlife
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #910 (#901): Planning studies to explore alternative sources of supply to replace an existing source (selected communities) (See Section 3.3.2).
	<p>Subaction #910A: Conduct an assessment to identify <i>existing</i> municipal supplies (as contrasted with planned <i>future</i> supplies) that have the potential to negatively impact flows in critical stream reaches, undertake a review of alternative sources of supply, similar to that described in Section 3.3.1. It is recommended that, where feasible, these water suppliers cease or limit the use of certain existing supplies and develop alternative sources of supply that are less likely to impact flows in critical stream reaches. It is also recommended that implementation of such alternatives be eligible for funding from regional, state, or federal funding programs (see Section 3.6). Pg 3-13</p> <p>Subaction #911D: Pending positive outcome of the assessment described above, <i>existing</i> municipal supplies (as contrasted with planned <i>future</i> supplies) that have the potential to negatively impact flows in critical stream reaches should cease or limit the use of certain existing supplies and develop alternative sources of supply that are less likely to impact flows in critical stream reaches. It is also recommended that implementation of such alternatives be eligible for funding from regional, state, or federal funding programs (see Section 3.6). Pg 3-13</p>
Plan Background & Context	Consistent with Water Supply Policies WSP-1 and WSP-2, these two Subactions call for assessment of existing municipal supplies to identify those that have the potential to adversely affect flows in critical stream reaches, and identification of alternative sources or approaches to reduce impacts. The assessment component of these Subactions calls for use of a process "similar to that described in Section 3.3.1". Pgs 3-10, 3-11 and 3-12

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions, and Coordination Needs	Implementation of these Subactions supports Action #911, which involves replacement of existing sources of supply with a different source to reduce instream flow impacts. These Subactions will work in conjunction with Subaction #928A, which addresses source replacement for communities or areas served by exempt wells, rather than municipal supplies. Aquifer mapping as described in Subaction #910E and identification of tidally influenced reaches in rule per Action #909C-2 would help to identify alternative supply sources for consideration. Implementation of conservation measures identified through this assessment process would also support Action #912, which addresses enhanced conservation measures.
Expected Outcomes	Replacement of existing municipal supplies that adversely affect instream flows in critical stream reaches with a source that is less likely to impact flows in critical stream reaches; and/or Curtailment of the use of certain existing supplies to lessen the impact in critical stream reaches.
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy WSP-1: Access to Water Supplies (Pg 3-9) Policy WSP-1: Reservations for Water Supply (Pg 3-12) Policy WSP-1: Columbia River Resource (Pg 3- 9) Policy WSP-1: Cowlitz River Resource (Pg 3-10) Policy WSP-1: Water Supply (Pg 3-10) Policy WSP-1: Aquifer Mapping (Pg 3-11) Policy WSP-1: Tidally Influenced Reaches (Pg 3-11) Policy WSP-2: Stream Flow Protection in Developing Supplies (Pgs 3-9) Policy WSP-2: Procedure for Evaluating Existing Supplies (Pg 3-13) Policy SFP-2: Restrictions on New Water Rights (Pg 4-18 to 4-19) Policy SFP-3: Water Conservation (Pg 4-25) Policy SFP-5: Source Substitution (Pg 4-26)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Low (will vary by entity and scope of project)
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Project Pre-planning	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Planning Unit coordination and outreach with purveyors to identify level of support for project development • If purveyor and Planning Unit support exists, prepare scope of work and secure Planning Unit approval (LCFRB) • Develop agreement between purveyors and other entities engaged in process • Prepare and post RFP • Hold pre-submittal conference • Review submittals, interview and screen consultants • Select consultant(s), negotiate and sign contract 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; Planning Unit time; coordination meetings; public outreach; advertising; project oversight and administration; etc.	
Funding Source(s)	Legislative appropriation, water rates in affected service area, Grants from Department of Health or Department of Ecology; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers & printers; meeting locations and scheduling; coordination with permitting entities, purveyors, and Planning Unit; etc.	
Agreements, Ordinances, Permits & Approvals	Agreements and/or contracts between purveyors, funding agencies and implementing entities may be needed; Planning Unit Approval of draft and final documents may be needed; etc.	
Other		
Constraints and Uncertainties		
Availability of funding may limit ability to complete pre-project planning; the level of coordination and cooperation between entities may affect project success and outcomes.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 2	Critical Stream Reach Identification and Prioritization	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">Identify critical reaches for preservation or enhancement of instream flows using information in<ul style="list-style-type: none">Salmon Recovery/Subbasin Plans<ul style="list-style-type: none">Population priorityReach priorityLimiting factors relating to flowOther relevant informationWRIA 25/26 Watershed Plan<ul style="list-style-type: none">Identified low flow problemsInstream flow/toe width dataTarget flow prioritiesStatus of basin (e.g., closed, open, etc.)Tidal versus non-tidal reachesReservation statusTechnical assessments and studiesOther applicable watershed or resource plansPrioritize critical reaches for preservation or enhancement of instream flowsPrepare report summarizing critical reach identification and prioritization	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; public outreach; project administration; etc.	
Funding Source(s)	Legislative appropriation, water rates in affected service area, Grants from Department of Health or Department of Ecology; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	Agreements and/or contracts between purveyors, funding agencies and implementing entities may be needed; Planning Unit Approval of draft and final documents may be needed; etc.	
Constraints and Uncertainties		
Constraint	Availability of funding may limit ability to complete pre-project planning; the level of coordination and cooperation between entities may affect project success and outcomes; etc.	
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 3	Municipal Water Source Identification and Screening	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">Identify and inventory existing municipal water suppliers in the basin using available information:<ul style="list-style-type: none">Inchoate water right assessment resultsWRATSDOH databaseWRIA 25/26 PlanPurveyor informationDocument water right quantities and current/projected demand<ul style="list-style-type: none">QuantitiesLocationTimingType (surface/ground)Collect available information on potential interaction between existing water supply sources and critical stream reaches<ul style="list-style-type: none">WRIA 25/26 PlanWRIA 25/26 Technical MemorandaStudies and assessmentsHydrological/geological reportsOther pertinent informationConduct additional modeling as necessary to document potential stream flow impactsIn coordination with purveyors and the Planning Unit and based on the above, develop a prioritized list of potential municipal water purveyors for possible source substitution actions.Contact high priority providers to discuss possibility of pursuing source substitution or other actions to reduce instream flow impacts<ul style="list-style-type: none">If purveyor is willing, proceed to Task 4.	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; project oversight and administration; etc.	
Funding Source(s)	Legislative appropriation, water rates in affected service area, Grants from Department of Health or Department of Ecology; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work and assessment; etc	

Constraints and Uncertainties	
Constraint	Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect alternatives considered in the analysis; potential surface/ground water relationships will affect project outcomes and identification of a preferred alternative.
Operation and Maintenance	
Estimated Annual Cost	TBD
Describe O&M Tasks	TBD

Task 4	Conduct Alternative Supply/Impact Reduction Analysis
Schedule	
Start Date	TBD
Planned Completion	TBD
Actual Completion	TBD
Benchmarks/ Milestones	<ul style="list-style-type: none"> • In coordination with purveyor, identify: <ul style="list-style-type: none"> ◦ Potential supply source alternatives, including but not limited to: <ul style="list-style-type: none"> ▪ Different (most likely deeper) aquifer ▪ Purchase of water neighboring community ▪ Development of tidally-influenced source ▪ Purchase from regional water system ◦ Other potential measures to reduce instream flow impacts, including but not limited to: <ul style="list-style-type: none"> ▪ Permanent curtailment of use ▪ Seasonal curtailment of use ▪ Conservation measures ▪ Infrastructure improvements ▪ Water re-use and reclamation • Coordinate with adjacent or existing service providers as needed • Conduct feasibility analysis of alternatives (impacts, costs, logistics, instream flow benefits, etc.) • Publish alternatives analysis report

Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; project oversight and administration; etc.	
Funding Source(s)	Legislative appropriation, water rates in affected service area, Grants from Department of Health or Department of Ecology; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work and assessment; etc.	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect alternatives considered in the analysis; potential surface water impacts will affect project outcomes and identification of a preferred alternative; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 5	Project Implementation	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> If practicable and feasible alternatives are available and purveyors are willing based on the above, implement source replacement or impact reduction actions. See Action #911 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	See Action #911	
Funding Source(s)	See Action #911	
Logistical Needs	See Action #911	
Agreements, Ordinances, Permits & Approvals	See Action #911	
Other	See Action #911	
Constraints and Uncertainties		
Constraint	See Action #911	
Response	See Action #911	
Operation and Maintenance		
Estimated Annual Cost	See Action #911	
Describe O&M Tasks	See Action #911	

General Comments

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTIONS #910 AND #911, SUBACTIONS #910B and #911B
PLANNING STUDIES TO EXPLORE ALTERNATIVE SOURCES OF SUPPLY

Action Summary ¹	
Lead Partner(s)	Cowlitz, Lewis and Wahkiakum Counties, Cities, local governments, Ecology and/or others as appropriate – TBD (Note: given the scope of this action and the number of entities involved, it may be appropriate for the Planning Unit to be lead for soliciting funds and completing the assessment)
Oversight Responsibilities	Department of Ecology, Department of Health
Coordinating Partner(s)	Planning Unit, Department of Ecology, Department of Health, Department of Fish and Wildlife
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #910 (#901): Planning studies to explore alternative sources of supply to replace an existing source (selected communities) (See Section 3.3.2).
	<p>Subaction #910B: Conduct an assessment to identify communities using water sources (surface or ground water) that significantly reduce base flows in any stream that provides important fish habitat within WRIAs 25 and 26, and evaluate alternative sources of supply that eliminate or minimize these effects. It is anticipated that this would require examination of cost, potential rate impacts, reliability considerations, and evaluation of other feasibility criteria. This is a Planning Unit recommendation for voluntary actions. Implementation should not be mandated by the State. Pg 4-26</p> <p>In limited cases, this action may also apply to rural areas where residents rely on individual domestic wells (exempt wells). Cowlitz, Lewis and Wahkiakum Counties, Cities, local governments, Ecology and/or others as appropriate should assess this possibility through a water-balance analysis, in selected rural areas where extensive new development is expected to occur or where there is substantial existing development served by exempt wells. Pg 4-26</p>
	Action #911: Replace an existing source of supply with a different source to reduce impacts on stream flow. Requires engineering studies; water rights processing; other permitting; inter-local agreements or contracts; construction; operations & maintenance (See Section 3.3.2).
	<p>Subaction #911B: Pending positive outcome of the assessment described above, communities using water sources (surface or ground water) that significantly reduce base flows in any stream that provides important fish habitat within WRIAs 25 and 26 should replace existing sources with a new source of supply that eliminates or minimizes these effects. It is anticipated that this would require examination of cost, potential rate impacts, reliability considerations, and evaluation of other feasibility criteria. Pg 4-26</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Plan Background & Context	During preparation of a watershed plan in the nearby WRIs 27 and 28, LCFRB commissioned a pilot review of data on individual domestic wells (exempt wells) in the Washougal River subbasin. In this setting, where rural residences are relatively low-density, and where most houses have septic systems that return domestic water to the subsurface, well withdrawals have a relatively small effect on stream flow in the dry season. Based on this finding, management of exempt wells does not appear to be a high priority at the regional scale within WRIs 25 and 26. However, there may be localized areas where due to density, availability of public sewer service, or other conditions, even individual domestic wells could cause problems for stream flow. The recommendation above addresses this situation. Pg 4-26
Relationship to Other Actions, and Coordination Needs	Implementation of Subaction #910B supports Action #911, which involves replacement of existing sources of supply with a different source to reduce instream flow impacts, consistent with WSP-1 and WSP-2. Subaction #911D is a companion Subaction that involves the actual replacement of sources for areas served by existing municipal supplies, pending completion of the assessment and a positive outcome. This Subaction also relates to Subaction #928A addresses source replacement for communities or areas served by exempt wells. Aquifer mapping as described in Subaction #910E and identification of tidally influenced reaches in rule per Subaction #909C-2 would help to identify alternative supply sources for consideration. Implementation of conservation measures identified through this assessment process would also support Action #912, which addresses enhanced conservation.
Expected Outcomes	Replacement of existing water supplies that adversely affect instream flows in critical stream reaches with a source that is less likely to impact flows in critical stream reaches.
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy WSP-1: Access to Water Supplies (Pg 3-9) Policy WSP-1: Reservations for Water Supply (Pg 3-12) Policy WSP-1: Columbia River Resource (Pg 3- 9) Policy WSP-1: Cowlitz River Resource (Pg 3-10) Policy WSP-1: Water Supply (Pg 3-10) Policy WSP-1: Aquifer Mapping (Pg 3-11) Policy WSP-1: Tidally Influenced Reaches (Pg 3-11) Policy WSP-2: Stream Flow Protection in Developing Supplies (Pgs 3-9) Policy WSP-2: Procedure for Evaluating Existing Supplies (Pg 3-13) Policy WSP-2: Water Supply-Individual Household Wells (Pg 3-21) Policy SFP-2: Restrictions on New Water Rights (Pg 4-18 to 4-19) Policy SFP-3: Water Conservation (Pg 4-25) Policy SFP-5: Source Substitution (Pg 4-26)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Low
Tasks not Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Pre-project Planning	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Purveyor coordination and outreach with other purveyors and Planning Unit to identify level of support for project development • Prepare scope of work and secure approval • Develop agreement between purveyors and other entities engaged in process • Prepare and post RFP • Hold pre-submittal conference • Review submittals, interview and screen consultants • Select consultant(s), negotiate and sign contract (Note: this task could also be completed with existing staff)	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; coordination meetings; public outreach; advertising; project oversight and administration; etc.	
Funding Source(s)	Varies depending on entity. Potential sources include: water rates and hookup charges in affected service area; grants or low-interest loans from existing state & federal programs; private industry; public water system; legislative appropriations; congressional appropriations; state, county, city general fund revenues; misc. grants; county development fees; large water users and hydropower facilities; agricultural producers; assessments of affected properties (local improvement districts); Phase 4 implementation grants; grants from DOH or Ecology; private industry; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; etc.	
Other		
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 2		Critical Stream Reach Identification and Prioritization	
Schedule			
Start Date	TBD		
Planned Completion	TBD		
Actual Completion	TBD		
Benchmarks/ Milestones	<ul style="list-style-type: none">Identify critical reaches for preservation or enhancement of instream flows using information in:<ul style="list-style-type: none">Salmon Recovery/Subbasin Plans<ul style="list-style-type: none">Population priorityReach priorityLimiting factors relating to flowOther relevant informationWRIA 25/26 Watershed Plan<ul style="list-style-type: none">Identified low flow problemsInstream flow/toe width dataTarget flow prioritiesStatus of basin (e.g., closed, open, etc.)Tidal versus non-tidal reachesReservation statusTechnical assessments and studiesOther applicable watershed or resource plansPrioritize critical reaches for preservation or enhancement of instream flowsPrepare report summarizing critical reach identification and prioritization		
Resource Needs			
Costs	Period Beginning: TBD	Amount: TBD	
	Total: TBD		
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; public outreach; project administration; etc.		
Funding Source(s)	See Task 1		
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.		
Agreements, Ordinances, Permits & Approvals	Agreements and/or contracts between purveyors, funding agencies and implementing entities may be needed; Planning Unit Approval of draft and final documents may be needed (if completed as PU action); etc.		
Other			
Constraints and Uncertainties			
Constraint	Availability of funding may limit ability to complete pre-project planning; the level of coordination and cooperation between entities may affect project success and outcomes; etc.		
Response	TBD		
Operation and Maintenance			
Est. Annual Cost	TBD		
Describe O&M Tasks	TBD		

Task 3	Existing Water Source Identification and Screening
Schedule	
Start Date	TBD
Planned Completion	TBD
Actual Completion	TBD
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Identify and inventory existing water suppliers and individual well densities in the basin using available information: <ul style="list-style-type: none"> ○ Inchoate water right assessment results ○ WRATS ○ DOH database ○ WRIA 25/26 Plan ○ Purveyor information ○ County/City Building permit records ○ Well logs and records (Ecology, Health Departments, etc.) • Document water withdrawal quantities and current demand <ul style="list-style-type: none"> ○ Quantities ○ Location ○ Timing ○ Type (surface/ground) • Collect available information on potential interaction between existing water supply sources and critical stream reaches <ul style="list-style-type: none"> ○ WRIA 25/26 Plan ○ WRIA 25/26 Technical Memoranda ○ Studies and assessments ○ Hydrological/geological reports ○ Other pertinent information • Conduct additional modeling as necessary to document potential stream flow impacts • Based on the above, develop a prioritized list of potential water sources for possible substitution actions. • Contact high priority providers and/or communities to discuss possibility of pursuing source substitution or other actions to reduce instream flow impacts. (Note: additional public outreach and involvement may be required) <ul style="list-style-type: none"> ○ If purveyor(s) and/or communities are willing, proceed to Task 4.

Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; project oversight and administration; etc.	
Funding Source(s)	See Task 1.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work and assessment; etc	
Other	TBD	
Constraints and Uncertainties		
Constraint	Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect alternatives considered in the analysis; potential surface/ground water relationships will affect project outcomes and identification of a preferred alternative.	
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 4	Conduct Alternative Supply/Impact Reduction Analysis	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• In coordination with purveyor and/or communities, identify:<ul style="list-style-type: none">◦ Potential supply source alternatives, including but not limited to:<ul style="list-style-type: none">▪ Different (most likely deeper) aquifer▪ Purchase of water neighboring community▪ Development of tidally-influenced source▪ Purchase from regional water system◦ Other potential measures to reduce instream flow impacts, including but not limited to:<ul style="list-style-type: none">▪ Permanent curtailment of use▪ Seasonal curtailment of use▪ Conservation measures▪ Infrastructure improvements▪ Water re-use and reclamation• Coordinate with adjacent or existing service providers as needed• Conduct feasibility analysis of alternatives including assessment of costs, logistics, instream flow benefits, potential rate impacts, reliability considerations, and evaluation of other feasibility criteria.• Publish alternatives analysis report	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; project oversight and administration; etc.	
Funding Source(s)	See Task 1.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work and assessment; etc.	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect alternatives considered in the analysis; potential surface water impacts will affect project outcomes and identification of a preferred alternative; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 5	Project Implementation	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> If practicable and feasible alternatives are available and purveyors and/or communities are willing based on the above, implement source replacement or impact reduction actions. See Action #911 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	See Action #911 - General	
Funding Source(s)	See Action #911 - General	
Logistical Needs	See Action #911 - General	
Agreements, Ordinances, Permits & Approvals	See Action #911 - General	
Other	See Action #911 - General	
Constraints and Uncertainties		
Constraint	See Action #911 - General	
Response	See Action #911 - General	
Operation and Maintenance		
Estimated Annual Cost	See Action #911 - General	
Describe O&M Tasks	See Action #911 - General	

General Comments

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTIONS #910 and #911, SUBACTIONS #910C
and #911A
LEWIS COUNTY – COWLITZ RIVER SOURCE SUBSTITUTION**

Action Summary¹	
Lead Partner(s)	Lewis County
Oversight Responsibilities	Lewis County Department of Health
Coordinating Partner(s)	Department of Ecology City of Winlock City of Toledo City of Vader Cowlitz Tribe Water System Purveyors within Proposed Service Area WRIA 25/26 Planning Unit
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing <input type="checkbox"/> Revised
Table Description	Action #910 (#901): Planning studies to explore alternative sources of supply to replace an existing source (selected communities) (See Section 3.3.2).
	Subaction #910C: Conduct a study to determine the feasibility of developing a regional water supply on the mainstem Cowlitz River near Interstate 5, to replace existing sources in Winlock, reduce tributary impacts, and support projected growth. Pg 3-13
	Action #911: Replace an existing source of supply with a different source to reduce impacts on stream flow. Requires engineering studies; water rights processing; other permitting; inter-local agreements or contracts; construction; operations & maintenance (See Section 3.3.2).
	Subaction #911A: Pending positive outcome of studies and analyses described above, develop a regional water supply on the mainstem Cowlitz River near Interstate 5, to replace existing sources in Winlock to reduce tributary impacts and support projected growth. Pg 3-13, Pg 3-20

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Plan Background & Context	<p>Communities using water sources (surface or ground water) that significantly reduce base flows in any stream that provides important fish habitat within WRIAs 25 and 26 should evaluate alternative sources of supply that eliminate or minimize these effects. It is anticipated that this would require examination of cost, potential rate impacts, reliability considerations, and evaluation of other feasibility criteria. This is a Planning Unit recommendation regarding voluntary actions. Implementation should not be mandated by the State. Pg 4-7 & 4-26</p> <p>For cases in which <i>existing</i> municipal supplies (as contrasted with planned <i>future</i> supplies) have the potential to negatively impact flows in critical stream reaches, the Planning Unit recommends that the selected communities undertake a review of alternative sources of supply, similar to that described in Section 3.3.1. It is recommended that, where feasible, these water suppliers cease or limit the use of certain existing supplies and develop alternative sources of supply that are less likely to impact flows in critical stream reaches. It is also recommended that implementation of such alternatives be eligible for funding from regional, state, or federal funding programs (see Section 3.6). This is a Planning Unit recommendation for voluntary action. Implementation should not be mandated by the State. Pg 3-13</p> <p>The Planning Unit views the Cowlitz River as a significant regional resource. Due to the abundant supply in the mainstem Cowlitz River, the Planning Unit recommends that it be considered over other water resources tributary to the Columbia River in meeting future water supply needs. Use of the Cowlitz River should be consistent with the reservation quantity established for the river (See Section 4.4.1). Pg 3-10.</p>
Relationship to Other Actions, and Coordination Needs	<p>Completion of this action would be contingent upon first establishing in rule a "reserve" for the Cowlitz River in accordance with the Plan (See Action #909C-1, #917, #917A, B and C). This action also relates to and addresses in part actions/subactions #909A, #909B-1, #910 and #910C, #924 and #924A.</p>
Expected Outcomes	<p>Provide a long-term regional water source to meet projected residential, commercial and industrial growth needs within the City of Winlock and surrounding areas; and</p> <p>Improve summer low flow conditions within Olequa Creek and other tributaries that may be affected by existing or future groundwater withdrawals.</p>

Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy WSP-1: Access to Water Supplies (pg 3-9); and Cowlitz River Resource (pg 3-9). Policy SFP-1: Target Flow (Olequa Creek) (Pg G-3, G-4, G-7, G-8) Policy SFP-5: Source substitution (pg 4-26) Policy SFP-6: Transfer of Water Rights to State Trust (Pg 4-27)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	High
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Conduct Preliminary Feasibility Study (also addresses Subaction #910C)	
Schedule		
Start Date	April 2007	
Planned Completion	July 2007	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Coordinate with existing service providers• Quantify land use in proposed service area• Project build out density in the service area• Project water demand for each planning horizon• Relate to today dollar cost per gallon• If no fatal flaw, proceed with Task 2	
Resource Needs		
Costs	Period Beginning: April 2007	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; public outreach; project administration; etc.	
Funding Source(s)	Lewis County general fund, County staff time	
Logistical Needs	GIS Support, meeting rooms, and meeting coordination	
Agreements, Ordinances, Permits & Approvals	Agreements from Lewis County Board of County Commissioners to explore Coordinated Water System Plan	
Other		
Constraints and Uncertainties		
If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 2	Conduct Feasibility Study (also addresses Subaction #910C)	
Schedule		
Start Date	August 2007	
Planned Completion	March 2008	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Identify funding sources;• Secure funds;• Prepare RFP/hire contractor (RFP also includes Task 2 and 3);• Complete feasibility study, including field engineering and assessment (permitting may be needed);• Identify project alternatives, including “preferred alternative”;• Approval of “preferred alternative” by Lewis County Board of Commissioners;• Publish feasibility report.	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; public outreach; project administration; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work; etc.	
Other	TBD	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect alternatives considered in the analysis; potential surface water impacts will affect project outcomes and identification of a preferred alternative; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 3	Define Critical Water Supply Service Area (CWSSA)	
Schedule		
Start Date	March 2008	
Planned Completion	July 2008	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">Conduct Preliminary Assessment (WAC 246-293-130)<ul style="list-style-type: none">Notify affected parties preliminary assessment is underway;Preliminary assessment report including:<ul style="list-style-type: none">Existing water systemsAvailability and adequacy of future water sources<ul style="list-style-type: none">Apply for water right (Task ?, concurrent)Service area boundariesPresent growth rateStatus of water system planning, land use planning and coordination, including a list of land use plans and policies adopted by local general purpose governmentsPresent report to Lewis County BOCC, Department of Health and all potentially affected water purveyorsForm and advisory committee<ul style="list-style-type: none">Possible MOU/MOA between jurisdictionsEstablish CWSSA Boundaries<ul style="list-style-type: none">CWSSA Report<ul style="list-style-type: none">Narrative on recommendation defining recommended boundary location, the criteria used and relative importance of eachMap of proposed boundariesPublic meetings on proposed CWSSA boundariesCounty ratify proposed CWSSA boundaries	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; modeling/data analysis and assessment; coordination meetings; public outreach; project administration; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; GIS system; modeling software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	Approval from Department of Health, MOU between Lewis County and affected jurisdictions, ordinance approving Abbreviated Coordinated Water System Plan (ACWSP)	
Constraints and Uncertainties		
Constraint	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; etc.	

Operation and Maintenance	
Estimated Annual Cost	TBD
Describe O&M Tasks	TBD

Task 4		Water Right Permitting	
Schedule			
Start Date		TBD	
Planned Completion		TBD	
Actual Completion		TBD	
Benchmarks/ Milestones		<ul style="list-style-type: none">• Develop application package for proposed water right• Develop proposal for off-setting and mitigating actions addressing (if needed)<ul style="list-style-type: none">◦ Acquisition of upstream water rights (if needed)◦ Flow related actions◦ Habitat restoration actions (per Section 3.3.1)• Submit application to Ecology• Ecology review and coordination with WDFW• Consultation with Planning Unit (if needed)• Decision on application considering consistency with plan guidance, proposal for off-setting and mitigating actions (if needed), and requirements of RCW 90.03.290, including the following:<ul style="list-style-type: none">◦ Water will be put to beneficial use◦ There is no impairment to existing, or senior, rights;◦ Flow related actions◦ Water is available for appropriation◦ Issuance of the requested water right will not be detrimental to the public welfare.	
Resource Needs			
Costs		Period Beginning: TBD	Amount: TBD
		Total: TBD	
Key Cost Drivers		Consulting services; staff time; application fees; modeling/data analysis and assessment; acquisition of water rights; agency coordination meetings; field assessment and studies; project administration; etc.	
Funding Source(s)		See Task 1	
Logistical Needs		Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; etc.	
Agreements, Ordinances, Permits & Approvals		Permit outcomes will depend upon consistency with Ecology’s permit approval criteria, plan guidance and mitigation requirements.	
Constraints and Uncertainties			
Constraint		Permitting outcome will depend on how well the application package addresses requirements outlined in the plan and requirements of RCW 90.03.290.	
Response		Develop a sound application proposal consistent with the guidelines and strategy outlined in the plan.	

Operation and Maintenance	
Estimated Annual Cost	TBD
Describe O&M Tasks	TBD

Task 5	Develop Abbreviated Coordinated Water System Plan (ACWSP) (RCW 70.116)	
Schedule		
Start Date	August 2008	
Planned Completion	February 2009	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Contract for plan development• Develop Plan<ul style="list-style-type: none">◦ Identify future service area◦ Designation of minimum design standards◦ Utility service review procedure◦ Public meetings• Plan approval from Lewis County BOCC• Submit for approval to Department of Health	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; modeling/data analysis and assessment; coordination meetings; public outreach; project administration; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; etc.	
Agreements, Ordinances, Permits & Approvals	Approval from Department of Health, MOU between Lewis County and affected jurisdictions, ordinance approving ACWSP	
Other		
Constraints and Uncertainties		
Constraint	Availability of funding may limit ability to conduct analyses and assessments; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; etc.	
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 6	Develop Water System Plan	
Schedule		
Start Date	March 2009	
Planned Completion	November 2009	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Contract for plan development• Development Plan<ul style="list-style-type: none">◦ Description of water system◦ Basic Planning Data◦ System Analysis◦ Conservation Program◦ Source water protections◦ Operation and Maintenance program◦ Distribution facilities design and construction standards◦ Capital improvement program◦ Financial program• Approval from Lewis County BOCC• Approval from Department of Health and Department of Ecology	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: \$45,000	
Key Cost Drivers	Consulting services; staff time; modeling/data analysis and assessment; coordination meetings; outreach and education; project oversight and administration; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; etc.	
Agreements, Ordinances, Permits & Approvals	Approval from Lewis County BOCC, Department of Health, Department of Ecology, MOU between Lewis County and affected jurisdictions	
Other		
Constraints and Uncertainties		
Constraint	Availability of funding may limit ability to conduct analyses and assessments; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; etc.	
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 7	Project Design and Engineering	
Schedule		
Start Date	January 2010	
Planned Completion	November 2010	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">Contract for plan developmentDevelop preliminary design and engineering plans for the preferred alternativePrepare final design and engineering plans for approval.	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: \$50,000	
Key Cost Drivers	Consulting services; staff time; modeling/data analysis and assessment; coordination meetings; public outreach; project oversight and administration; plan review and approval; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; field equipment; drafting hardware and software; etc	
Agreements, Ordinances, Permits & Approvals	Approval of final design and engineering by Department of Health, Lewis County and Ecology.	
Other		
Constraints and Uncertainties		
Constraint	Availability of funding may limit ability to conduct design and engineering analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect design and engineering alternatives; etc.	
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 8	Project Construction
Schedule	
Start Date	November 2010
Planned Completion	June 2013
Actual Completion	TBD
Benchmarks/ Milestones	<ul style="list-style-type: none">• Prepare final construction plans and specifications• Permitting: shoreline substantial development permit; critical areas; floodplain; grading and clearing; Section 404 (if needed); Section 401 Certification (if needed); and hydraulic project approval;

	<ul style="list-style-type: none"> • Prepare RFP and hire contractor(s); • Initiate construction; • Project management and oversight; and • Project completion
Resource Needs	
Costs	Period Beginning: TBD Amount: TBD
	Total: TBD
Key Cost Drivers	Consulting services; contractor services; staff time; permitting and application fees; project oversight and administration; mitigation implementation; monitoring; permit fees; supplies and materials; project meetings; compliance inspections; etc.
Funding Source(s)	See Task 1
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; equipment rentals; supply and material handling and transport; etc.
Agreements, Ordinances, Permits & Approvals	Permits for construction will vary depending on specific project. Examples of required permits include: shoreline substantial development permit; building; critical areas; floodplain; grading and clearing; ESA consultation; Section 404; Section 401 certification; hydraulic project approval; and SEPA compliance. Approval of final construction plans by the project proponent, purveyor, Department of Health and/or Department of Ecology may be required; if multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions related to construction; contracts between proponents and consultants/contractors may be needed; etc.
Constraints and Uncertainties	
Constraint	Construction may be delayed if permit approvals are not secured sufficiently in advance; changes in supply and material costs may affect construction timelines and budgets; weather constraints affect project timing; permit requirements may affect construction methods, timing and design; etc.
Operation and Maintenance	
Estimated Annual Cost	TBD
Describe O&M Tasks	Once completed, the project will require ongoing monitoring, infrastructure maintenance and upgrades. Project plans and funding approaches should include provisions for long-term operation and maintenance.
General Comments	

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #910 AND SUBACTION #910D
ELOCHOMAN RIVER SOURCE SUBSTITUTION/AUGMENTATION ASSESSMENT**

Action Summary ¹	
Lead Partner(s)	Town of Cathlamet
Oversight Responsibilities	Department of Health, Department of Ecology
Coordinating Partner(s)	Department of Ecology Water System Purveyors WRIA 25/26 Planning Unit
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing <input type="checkbox"/> Revised
Table Description	<p>Action #910 (#901): Planning studies to explore alternative sources of supply to replace (and/or augment) an existing source (selected communities) (See Section 3.3.2).</p> <p>Subaction #910D: Conduct a study to determine the feasibility of replacing the Town of Cathlamet's Elochoman River water supply.</p>
Plan Background & Context	<p>Communities using water sources (surface or ground water) that significantly reduce base flows in any stream that provides important fish habitat within WRIAs 25 and 26 should evaluate alternative sources of supply that eliminate or minimize these effects. It is anticipated that this would require examination of cost, potential rate impacts, reliability considerations, and evaluation of other feasibility criteria. This is a Planning Unit recommendation regarding voluntary actions. Implementation should not be mandated by the State. Pgs 4-7 and 4-26</p> <p>For cases in which <i>existing</i> municipal supplies (as contrasted with planned <i>future</i> supplies) have the potential to negatively impact flows in critical stream reaches, the Planning Unit recommends that the selected communities undertake a review of alternative sources of supply, similar to that described in Section 3.3.1. It is recommended that, where feasible, these water suppliers cease or limit the use of certain existing supplies and develop alternative sources of supply that are less likely to impact flows in critical stream reaches. It is also recommended that implementation of such alternatives be eligible for funding from regional, state, or federal funding programs (see Section 3.6). This is a Planning Unit recommendation for voluntary action. Implementation should not be mandated by the State. Pg 3-13</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

	<p>The Town's water source is derived from the Elochoman River through an infiltration gallery with a peak capacity of 1 mgd. Minimal growth is expected in the City's service area. With the addition of 0.25 mgd in new water rights during 2001, the current inventory of available water is considered adequate for the next 20 years (Pg 3-19). However, problems with the current infrastructure have been identified and in the future may potentially necessitate source substitution or infrastructure improvements. Although Section 4.6 of the Plan identifies the Elochoman River as a high priority watershed for management actions that improve stream flows (Pg 4-34), the primary effects of the existing diversion are in the lower reaches of the river, which is also subject to tidal influence (Pgs 4-40 and 4-41). Assessment of net instream flow benefits would therefore be an important component of the feasibility study.</p>
Relationship to Other Actions, and Coordination Needs	<p>Completion of this Subaction would support implementation of the broader source substitution assessment and feasibility Actions #910 and #911. Aquifer mapping as described in Subaction #910E and identification of tidally influenced reaches in rule per Action #909C-2 would help to identify alternative supply sources for consideration. If net stream flow benefits would result, this Subaction would support implementation of a target flow program per Subaction #919.</p>
Expected Outcomes	<p>Provide a long-term regional water source to meet projected residential, commercial and industrial growth needs for the Town of Cathlamet; and</p> <p>Improve summer low flow conditions within the Elochoman River.</p>
Is the Action Fully Addressed by the Tasks Below?	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
Supporting Strategies, Policies & Recommendations	<p>Policy WSP-1: Access to Water Supplies (Pg 3-9) Policy WSP-1: Columbia River Resource (Pg-9) Policy WSP-1: Water Supply (Pg 3-10) Policy WSP-1: Aquifer Mapping (Pg 3-11) Policy WSP-1 Tidally Influenced Reaches (Pg 3-11) Policy WSP-2: Water Supply – New Developments and Industrial Supplies (Pg 3-13) Policy SFP-1: Target Flow (Pgs G-3 through G-8) Policy SFP-5: Source Substitution (pg 4-26)</p>
Is the Activity Fully Funded?	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
Financial/Economic Costs ²	<p>Medium (based on 2009-11 Ecology implementation grant proposal submitted by Town of Cathlamet)</p>
Identify Tasks that have not been Fully Funded	<p>TBD</p>

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Pre-project Planning	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Pre-planning:• Identify funding sources• Secure funds• Prepare RFP/hire contractor (if needed) (addresses following Tasks)• Coordinate with existing service providers and affected jurisdictions• Possible MOU/MOA between jurisdictions• Conduct water demand projections and analysis<ul style="list-style-type: none">◦ Coordinate with existing service providers◦ Quantify land use in proposed service area◦ Project build out density in the service area◦ Project water demand for planning horizon• Determine proposed water amount needed to meet long-term growth needs	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; coordination meetings; public outreach; advertising; project oversight and administration; etc.	
Funding Source(s)	2009-11 Ecology Watershed Implementation Grant applied for in May 2008. Other potential sources include: water rates and hookup charges in affected service area; grants or low-interest loans from existing state & federal programs; private industry; public water system; legislative appropriations; congressional appropriations; state, county, city general fund revenues; misc. grants; county/city development fees; large water users and hydropower facilities; agricultural producers; assessments of affected properties (local improvement districts); Phase 4 implementation grants; grants from DOH or Ecology; private industry; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; etc.	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 2		Conduct Feasibility Study	
Schedule			
Start Date	TBD		
Planned Completion	TBD		
Actual Completion	TBD		
Benchmarks/ Milestones	<ul style="list-style-type: none">Identify potential supply source alternatives, including but not limited to:<ul style="list-style-type: none">Different (most likely deeper) aquiferPurchase of water neighboring communityDevelopment of tidally-influenced sourcePurchase from regional water systemCoordinate with adjacent or existing service providers as neededConduct feasibility analysis of alternatives (impacts, costs, logistics, etc.), including field assessment<ul style="list-style-type: none">Conduct analysis of instream flow impacts and benefits (location, timing, quantity, fish and aquatic resource impacts, etc.)Research and apply for redirection of water rights from Abe Creek and Cougar Creek to a new underground water sourceConduct a hydro-geologic study and analysis of existing and potential underground aquifers within the Town's watershed, and identify a likely site for performing a test-drillConduct a test drilling at the site identified in the above project , perform qualitative and quantitative analyses if the water content and flow rate, and prepare written recommendations on what well, pumping, treatment, and related costs would be to develop the new sourceIdentify “preferred alternative”Approval of preferred alternative by lead authority/authorities, Department of Health and Department of EcologyPublish alternatives analysis report		
Resource Needs			
Costs	Period Beginning: July 1, 2009	Amount: Estimated \$105,000	
	Total: Estimated \$105,000		
Key Cost Drivers	Consulting services; staff time; field testing; test wells; modeling/data analysis and assessment; coordination meetings; public outreach; project administration; etc.		
Funding Source(s)	2009-11 Ecology Watershed Implementation Grant applied for in May 2008. Other potential sources include: water rates and hookup charges in affected service area; grants or low-interest loans from existing state & federal programs; private industry; public water system; legislative appropriations; congressional appropriations; state, county, city general fund revenues; misc. grants; county/city development fees; large water users and hydropower facilities; agricultural producers; assessments of affected properties (local improvement districts); Phase 4 implementation grants; grants from DOH or Ecology; private industry; etc.		
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; field equipment for construction and testing of wells; general field supplies; etc.		

Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work; etc.
Constraints and Uncertainties	
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect alternatives considered in the analysis; potential surface water impacts will affect project outcomes and identification of a preferred alternative; etc.	
Operation and Maintenance	
Estimated Annual Cost	TBD
Describe O&M Tasks	TBD

Task 3	Project Implementation	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">If practicable and feasible alternatives are available and purveyors and/or communities are willing based on the above, implement source replacement actions. See Action #911	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	See Action #911 - General	
Funding Source(s)	See Action #911 - General	
Logistical Needs	See Action #911 - General	
Agreements, Ordinances, Permits & Approvals	See Action #911 - General	
Constraints and Uncertainties		
Constraint	See Action #911 - General	
Operation and Maintenance		
Est. Annual Cost	See Action #911 - General	
Describe O&M Tasks	See Action #911 - General	
General Comments		
As noted in Section 3 of the Plan, the existing Elochoman River water supply is considered adequate for the next 20 years (Pg 3-19). Source substitution for the Town of Cathlamet is not specifically called for in the Plan. This Subaction therefore addresses feasibility assessment for voluntary source substitution.		

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #910 AND SUBACTION#910E
DEVELOP AQUIFER MAP**

Action Summary¹	
Lead Partner(s)	Planning Unit
Oversight Responsibilities	Planning Unit, Ecology
Coordinating Partner(s)	Ecology, Planning Unit, USGS (potentially)
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #910: Planning studies to explore alternative sources of supply to replace (and/or augment) an existing source (selected communities) (See Section 3.3.2).
	Subaction #910E: Develop a map that depicts locations of deep aquifers suitable for water supply development. Such a map could be developed in partnership with the USGS, and will involve a study to identify aquifers that are not in hydraulic continuity with streams that are a priority for flow protection. Pg 3-11
Plan Background & Context	<p>The WRIA 25/26 Plan recognizes that water supply management has a significant relationship to management of stream flows. To achieve a balance between protection of instream flows and water supply needs, the Plan recommends increased emphasis on groundwater supplies rather than surface water supplies, and utilization of "regional" water sources such as the Columbia River, Cowlitz River, or deep aquifers that are not in direct continuity with tributary streams, per the following:</p> <p>The Planning Unit views the Columbia River and ground water in hydraulic continuity with the Columbia River as a major water resource to meet water supply needs. As new water supplies are needed, it is preferable they be withdrawn from the Columbia River, adjacent lowland reaches of tributaries subject to tidal effects, and associated ground waters, rather than from flow-limited reaches of streams tributary to the Columbia. This approach can meet regional supply needs, while protecting important aquatic habitat in the region. Pg 3-9</p> <p>The Planning Unit views the Cowlitz River as a significant regional resource. Due to the abundant supply in the mainstem Cowlitz River, the Planning Unit recommends that it be considered over other water resources tributary to the Columbia River in meeting future water supply needs. Use of the Cowlitz River should be consistent with the reservation quantity established for the river (See Section 4.4.1) Pg 3-10</p> <p>To assist with identification of alternative water sources, the Plan provides the following recommendation:</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

	The Planning Unit recommends that a map be developed during the implementation phase of the watershed planning process that would depict locations of deep aquifers suitable for water supply development. Such a map could be developed in partnership with the USGS and will involve a study to identify aquifers that are not in hydraulic continuity with streams that are a priority for flow protection. (Pg 3-11)
Relationship to Other Actions, and Coordination Needs	Completion of this Subaction would provide information needed to support the alternatives source analysis outlined in Section 3.3.1 of the Plan per Subactions #909A and #909B. This Subaction also relates to completion of planning studies to explore alternative sources of supply per Action #910 and its associated Subactions.
Expected Outcomes	<p>This Subaction would result in completion of a study of regional aquifers and development of maps that describe the locations of deep aquifers suitable for water supply development, and aquifers that are not in direct hydraulic continuity with Columbia River tributaries. This will assist with long-term transition to regional water supply sources that:</p> <p>Meet new or expanded needs for urban, suburban and industrial water supply consistent with adopted land use plans (see WSP-1); and Avoid or minimize effects on stream flows or aquatic habitat in stream reaches where flow conditions are an important factor for sustaining aquatic life, including fish populations in their various life stages. (see WSP-2)</p>
Is the Action Fully Addressed by the Tasks Below?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy WSP-1: Access to Water Supplies (Pg 3-9) Policy WSP-1: Reservations for Water Supply (Pg 3-12) Policy WSP-1: Columbia River Resource (Pg 3- 9) Policy WSP-1: Cowlitz River Resource (Pg 3-10) Policy WSP-1: Water Supply (Pg 3-10) Policy WSP-1: Aquifer Mapping (Pg 3-11) Policy WSP-1: Tidally Influenced Reaches (Pg 3-11) Policy WSP-2: Stream Flow Protection in Developing Supplies (Pgs 3-9) Policy WSP-2: Procedure for Evaluating Existing Supplies (Pg 3-13) Policy SFP-2: Restrictions on New Water Rights (Pg 4-18 to 4-19) Policy SFP-3: Water Conservation (Pg 4-25) Policy SFP-5: Source Substitution (Pg 4-26)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Medium
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Pre-project Planning	
Schedule		
Start Date	May 2008 (application for funding)	
Planned Completion	June 2011	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">Identify funding sources (Ecology Watershed Planning Implementation Grants – 2009-2011)Complete grant application and submit to EcologySecure fundsDevelop detailed scope of workPrepare RFP/hire contractorCoordinate with existing service providers and affected jurisdictions (Planning Unit)Possible MOU/MOA between jurisdictions	
Resource Needs		
Costs	Period Beginning: May 2008	Amount: \$2500
	Total: \$2500	
Key Cost Drivers	Staff and Planning Unit time; coordination meetings; public outreach; advertising; project oversight and administration; etc.	
Funding Source(s)	Phase 4 Watershed Planning Implementation Grant (2009-2011)	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; etc.	
Other		
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	Not Applicable	
Describe O&M Tasks	Not Applicable	

Task 2	Complete Aquifer Study and Prepare Report and Maps	
Schedule		
Start Date	July 2009	
Planned Completion	June 2011	
Actual Completion	TBD (proposed June 2011)	
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Coordinate with Planning Unit and affected entities • Compile existing information (e.g., reports, maps, studies, plans, etc.) • Conduct additional monitoring, monitoring and assessment as necessary • Develop draft report • Planning Unit/Ecology review and approval of draft report and products • Revisions to draft report and products • Planning Unit/Ecology Final approval of final products • Publish report and maps 	
Resource Needs		
Costs	Period Beginning: July 2009	Amount: \$80,000 (total project costs, all Tasks)
	Total: \$80,000 (total project costs, all Tasks)	
Key Cost Drivers	Consulting services; staff time; data collection; modeling/data analysis and assessment; coordination meetings; public outreach; project administration; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work; etc.	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; etc		
Operation and Maintenance		
Estimated Annual Cost	Not Applicable	
Describe O&M Tasks	Not Applicable	
General Comments		

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #910 AND 910F
STUDIES TO EXPLORE ALTERNATIVE SOURCES OF SUPPLY

Action Summary¹	
Lead Partner(s)	Public Water Systems, Group A System Providers
Oversight Responsibilities	Department of Health
Coordinating Partner(s)	Cities, Counties, Water purveyors, Department of Ecology
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #910 (#901): Planning studies to explore alternative sources of supply to replace an existing source (selected communities) (See Section 3.3.2).
	Subaction #910F: Where new supplies are required (Group A Systems), conduct a review of alternative sources of supply to address potential impacts on stream flow (see Section 3.3.1). Pg 3-20
Plan Background & Context	Interviews with local planning departments and state agency staff suggests that little or no growth is anticipated in many of the small Group A community systems. In those areas where small developments are occurring at the outskirts of the small Group A community systems, the trend has been to encourage connection to the existing water system. Table 3-1 displays population and water demand projections collectively for the small systems. As shown in Table 3-1, estimated demand associated with small systems is a relatively small proportion of total demand in the municipal and domestic sector in WRIAs 25 and 26. Pg 3-18 through 3-20
Relationship to Other Actions, and Coordination Needs	As noted above, the strategy outlined in Section 3.3.1 will be applied to requests for new or expanded water supplies related to small Group-A systems, with emphasis on purchase from existing major water purveyors. This Subaction therefore relates directly to source substitution actions such as #911 and associated Subactions, which involves replacement of existing sources of supply with a different source to reduce instream flow impacts. This Subaction will work in conjunction with Subaction #928A, which addresses source replacement for communities or areas served by exempt wells, rather than municipal supplies. Aquifer mapping as described in Subaction #910E and identification of tidally influenced reaches in rule per Subaction #909C-2 would help to identify alternative supply sources for consideration. Implementation of conservation measures identified through this assessment process would also support Action #909, which recommends that Ecology develop clear guidance for mitigation. An existing Ecology document listing examples of past mitigation can be used as a starting point. (See section 3.3.1)

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Expected Outcomes	<p>Development of water supplies that:</p> <p>Meet new or expanded needs for water supply for Group-A systems, consistent with adopted land use plans (see WSP-1); and</p> <p>Avoid or minimize effects on stream flows or aquatic habitat instream reaches where flow conditions are an important factor for sustaining aquatic life, including fish populations in their various life stages.</p>
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	<p>Policy WSP-1: Access to Water Supplies (Pg 3-9)</p> <p>Policy WSP-1: Reservations for Water Supply (Pg 3-12)</p> <p>Policy WSP-1: Water Supply (Pg 3-10)</p> <p>Policy WSP-2: Stream Flow Protection in Developing Supplies (Pg 3-13)</p> <p>Policy WSP-2: Procedure for Evaluating Existing Supplies (Pg 3-13)</p> <p>Policy WSP-2: Water supply – Small Group A systems (Pg 3-20)</p> <p>Policy SFP-2: Restrictions on New Water Rights (Pg 4-18, 4-19)</p> <p>Policy SFP-2: Mitigation Guidelines (Pg 4-18,4-19)</p>
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Low
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Identify New Supply Needs and Evaluate Relationship of Existing Supply Source to Stream Flows (If expansion of existing source is proposed)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Pre-planning: Identify funding sources<ul style="list-style-type: none">○ Secure funds○ Prepare RFP/hire contractor (or use existing staff)○ Conduct water demand projections and analysis<ul style="list-style-type: none">▪ Coordinate with existing service providers▪ Quantify land use in proposed service area▪ Project build out density in the service area▪ Project water demand for planning horizon• Determine proposed amount of supply need• Conduct analysis of instream flow impacts (location, timing, quantity, fish and aquatic resource impacts, etc.)<ul style="list-style-type: none">○ Options - If impacts identified, proceed to Task 2○ If no impacts identified:<ul style="list-style-type: none">▪ Apply to Ecology for water right▪ Implement source replacement or development actions▪ Implement any required optimization and conservation actions	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; public outreach; project administration; etc.	
Funding Source(s)	Varies depending on entity. Potential sources include: water rates and hookup charges in affected service area; grants or low-interest loans from existing state & federal programs; public water system; legislative appropriations; congressional appropriations; state, county, city general fund revenues; misc. grants; county development fees; Phase 4 implementation grants; grants from DOH or Ecology; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	Water right permit from Ecology would be needed for temporary withdrawals associated with testing.	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; etc.		
Operation and Maintenance		
Est. Annual Cost	TBD	
O&M Tasks	TBD	

Task 2	Conduct Alternative Supply Analysis (If Task 1 identifies flow regime impacts)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">Identify potential supply source alternatives, including but not limited to:<ul style="list-style-type: none">Different (most likely deeper) aquiferPurchase of water neighboring communityDevelopment of tidally-influenced sourcePurchase from regional water systemFocus efforts on evaluating the purchase of water from an existing major water purveyorCoordinate with adjacent or existing service providers as neededConduct feasibility analysis of alternatives (impacts, costs, logistics, etc.)Publish alternatives analysis reportOptions -<ul style="list-style-type: none">If a preferred and practicable alternative is identified and use of a reservation is not needed:<ul style="list-style-type: none">Apply to Ecology for water right (if needed)Develop and enter agreements for purchase of water from an existing purveyorImplement source replacement or development actionsImplement any required optimization and conservation actionsIf no preferred and practicable alternative is identified, implement Task 3	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; project oversight and administration; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work and assessment; etc.	

Constraints and Uncertainties		
Constraint	Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect alternatives considered in the analysis; potential surface water impacts will affect project outcomes and identification of a preferred alternative; etc.	
Operation and Maintenance		
Est. Annual Cost		
Describe O&M Tasks		
Task 3	Water Right Permitting, Petition to Use Reservation (If no practicable alternative is identified under Task 2)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Develop application package for proposed water right• If reservation is available, develop proposal for off-setting and mitigating actions addressing<ul style="list-style-type: none">◦ Acquisition of upstream water rights◦ Flow related actions◦ Habitat restoration actions (per Section 3.3.1)• If reservation is not available, off-set net impacts to surface water flows through<ul style="list-style-type: none">◦ Acquisition of upstream water rights (see Pg 3-27)• Submit application to Ecology• Ecology review and coordination with WDFW• Consultation with Planning Unit (if needed)• Decision on application considering consistency with plan guidance, proposal for off-setting and mitigating actions, and requirements of RCW 90.03.290, including the following:<ul style="list-style-type: none">◦ Water will be put to beneficial use◦ There is no impairment to existing, or senior, rights;◦ Flow related actions◦ Water is available for appropriation◦ Issuance of the requested water right will not be detrimental to the public welfare.	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; application fees; modeling/data analysis and assessment; acquisition of water rights; agency coordination meetings; field assessment and studies; project administration; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; etc.	
Agreements, Ordinances, Permits & Approvals	Permit outcomes will depend upon consistency with Ecology’s permit approval criteria, plan guidance and mitigation requirements.	

Constraints and Uncertainties	
Constraint	Permitting outcome will depend on how well the application package addresses mitigation requirements outlined in the plan and requirements of RCW 90.03.290; reserve amount will affect quantity of water available for supply needs; legal requirements and standards associated with individual permits may limit project alternatives and mitigation requirements; if not factored into analyses, mitigation requirements may increase project costs above projected; permit review and approval timelines may delay project construction or limit construction periods; permit processing timelines will depend upon the quality and clarity of information provided for review; etc
Response	Develop a sound application proposal consistent with the mitigation guidelines and reserve strategy outlined in the plan.
Operation and Maintenance	
Estimated Annual Cost	TBD
Describe O&M Tasks	TBD

Task 4	Project Design and Engineering (If water right permit granted)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Contract for design and engineering services (or use existing staff)• Develop preliminary design and engineering plans for approval• Prepare final design and engineering plans for approval• Approval of preferred alternative by lead authority/authorities, Department of Health and Department of Ecology	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; modeling/data analysis and assessment; coordination meetings; public outreach; project oversight and administration; plan review and approval; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; field equipment; drafting hardware and software; etc	
Agreements, Ordinances, Permits & Approvals	Revisions to Water System Plan and/or Small Water System Management Programs (SWSMP) may be required, which may also necessitate compliance with SEPA Approval of final design and engineering by the project proponent, Department of Health and Department of Ecology; if multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work; etc.	

Constraints and Uncertainties	
Constraint	Revisions to Water System Plan and/or Small Water System Management Programs (SWSMP) may be required, which may also necessitate compliance with SEPA Approval of final design and engineering by the project proponent, Department of Health and Department of Ecology; if multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work; etc.
Operation and Maintenance	
Estimated Annual Cost	
Describe O&M Tasks	

Task 5	Project Permitting and Approvals	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Complete and file permit applications: shoreline substantial development permit; critical areas; floodplain; grading and clearing; Section 404 (if needed); and Section 401 Certification (if needed);• Prepare and submit revisions to Water System Plan for review and approval by Washington Departments of Health and Ecology;• Prepare and submit biological assessment for ESA consultation (if needed);• Complete SEPA (if EIS needed, more refined benchmarks and milestones will be needed); and• Secure necessary permits, authorizations and approvals	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; application fees; modeling/data analysis and assessment; agency coordination meetings; public outreach and notification; field assessment and studies; project administration; publication/ printing costs; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; etc.	
Agreements, Ordinances, Permits & Approvals	Permit requirements will vary depending on project type and jurisdiction. Potential permits and approvals include: shoreline substantial development permit; critical areas permit; building permit; floodplain permit; grading and clearing permit; Section 404 permit (if needed); Section 401 Certification (if needed); water right permit; SEPA/NEPA compliance; and water system plan update and approval. Revisions to the Water Supply Plan (WSP) may be required, which may also necessitate compliance with SEPA.	

Constraints and Uncertainties	
Constraint	Legal requirements and standards associated with individual permits may limit project alternatives and mitigation requirements; differences in permit requirements may lead to incompatible outcomes; if not factored into analyses, mitigation requirements may increase project costs above projected; permit review and approval timelines may delay project construction or limit construction periods; permit processing timelines will depend upon the quality and clarity of information provided for review; etc.
Operation and Maintenance	
Estimated Annual Cost	TBD
Describe O&M Tasks	TBD
General Comments	

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: #911 A
SEE 910 C**

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: #911 B
SEE 910 B**

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: #911 D
SEE 910 A**

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #911
SOURCE SUBSTITUTION - GENERAL

Action Summary¹	
Lead Partner(s)	To be determined (TBD)
Oversight Responsibilities	Washington Department of Health (DOH)
Coordinating Partner(s)	Department of Ecology Water System Purveyors WRIA 25/26 Planning Unit
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing <input type="checkbox"/> Revised
Table Description	Action #911: Replace an existing source of supply with a different source to reduce impacts on stream flow. Requires engineering studies; water rights processing; other permitting; inter-local agreements or contracts; construction; operations & maintenance (See Section 3.3.2).
Plan Background & Context	<p>Communities using water sources (surface or ground water) that significantly reduce base flows in any stream that provides important fish habitat within WRIs 25 and 26 should evaluate alternative sources of supply that eliminate or minimize these effects. It is anticipated that this would require examination of cost, potential rate impacts, reliability considerations, and evaluation of other feasibility criteria. This is a Planning Unit recommendation regarding voluntary actions. Implementation should not be mandated by the State. Pgs 4-7 and 4-26</p> <p>For cases in which <i>existing</i> municipal supplies (as contrasted with planned <i>future</i> supplies) have the potential to negatively impact flows in critical stream reaches, the Planning Unit recommends that the selected communities undertake a review of alternative sources of supply, similar to that described in Section 3.3.1. It is recommended that, where feasible, these water suppliers cease or limit the use of certain existing supplies and develop alternative sources of supply that are less likely to impact flows in critical stream reaches. It is also recommended that implementation of such alternatives be eligible for funding from regional, state, or federal funding programs (see Section 3.6). This is a Planning Unit recommendation for voluntary action. Implementation should not be mandated by the State. Pg 3-13</p>
Relationship to Other Actions, and Coordination Needs	Completion of this action would be contingent upon first establishing in rule a "reserve" for the affected waterbody in accordance with the Plan (See Action #909C-1, #917, #917A, B and C). This action also relates to and addresses in part Actions and Subactions #909A, #909B, #910, #924 and #924A.

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Expected Outcomes	Provide a long-term regional water source to meet projected residential, commercial and industrial growth; and Improve summer low flow conditions within tributary streams affected by existing or future ground or surface water withdrawals.
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy WSP-1: Access to Water Supplies (pg 3-9); and Cowlitz River Resource (pg 3-9). Policy SFP-5: Source substitution (pg 4-26) Policy SFP-6: Transfer of Water Rights to State Trust (Pg 4-27)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Medium to High
Identify Tasks that have not been Fully Funded	Tasks 1 through 6

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Pre-project Planning	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<div>Pre-planning:</div> <ul style="list-style-type: none">Identify funding sourcesSecure fundsPrepare RFP/hire contractor (if needed) (addresses following Tasks)Coordinate with existing service providers and affected jurisdictionsPossible MOU/MOA between jurisdictionsConduct water demand projections and analysis<ul style="list-style-type: none">Coordinate with existing service providersQuantify land use in proposed service areaProject build out density in the service areaProject water demand for planning horizonDetermine proposed water amount needed to meet long-term growth needs	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; coordination meetings; public outreach; advertising; project oversight and administration; etc.	
Funding Source(s)	Varies depending on entity. Potential sources include: water rates and hookup charges in affected service area; grants or low-interest loans from existing state & federal programs; private industry; public water system; legislative appropriations; congressional appropriations; state, county, city general fund revenues; misc. grants; county development fees; large water users and hydropower facilities; agricultural producers; assessments of affected properties (local improvement districts); Phase 4 implementation grants; grants from DOH or Ecology; private industry; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or Memoranda of Understanding (MOUs)) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; etc.	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 2		Conduct Feasibility Study	
Schedule			
Start Date	TBD		
Planned Completion	TBD		
Actual Completion	TBD		
Benchmarks/ Milestones	<ul style="list-style-type: none">Identify potential supply source alternatives, including but not limited to:<ul style="list-style-type: none">Different (most likely deeper) aquiferPurchase of water neighboring communityDevelopment of tidally-influenced sourcePurchase from regional water system(Note: addresses Subactions #909B-1 and #909B-2)Coordinate with adjacent or existing service providers as neededConduct feasibility analysis of alternatives (impacts, costs, logistics, etc.), including field assessmentConduct analysis of instream flow impacts (location, timing, quantity, fish and aquatic resource impacts, etc.)Identify “preferred alternative”Approval of preferred alternative by lead authority/authorities, Department of Health and Department of EcologyPublish alternatives analysis report		
Resource Needs			
Costs	Period Beginning: TBD	Amount: TBD	
	Total: TBD		
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; public outreach; project administration; etc.		
Funding Source(s)	See Task 1		
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.		
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work; etc.		
Other	TBD		
Constraints and Uncertainties			
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect alternatives considered in the analysis; potential surface water impacts will affect project outcomes and identification of a preferred alternative; etc.			
Operation and Maintenance			
Estimated Annual Cost	TBD		
Describe O&M Tasks	TBD		

Task 3		Water Right Permitting	
Schedule			
Start Date	TBD		
Planned Completion	TBD		
Actual Completion	TBD		
Planned Completion	<ul style="list-style-type: none">• Develop application package for proposed water right• If needed, develop proposal for off-setting and mitigating actions addressing<ul style="list-style-type: none">◦ Acquisition of upstream water rights◦ Flow related actions◦ Habitat restoration actions (per Section 3.3.1)• Submit application to Ecology• Ecology review and coordination with WDFW• Consultation with Planning Unit (if needed)• Decision on application considering consistency with plan guidance, proposal for off-setting and mitigating actions, and requirements of RCW 90.03.290, including the following:<ul style="list-style-type: none">◦ Water will be put to beneficial use◦ There is no impairment to existing, or senior, rights◦ Flow related actions◦ Water is available for appropriation◦ Issuance of the requested water right will not be detrimental to the public welfare		
Resource Needs			
Costs	Period Beginning: TBD	Amount: TBD	
	Total: TBD		
Key Cost Drivers	Consulting services; staff time; application fees; modeling/data analysis and assessment; acquisition of water rights; agency coordination meetings; field assessment and studies; project administration; etc.		
Funding Source(s)	See Task 1		
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; etc.		
Agreements, Ordinances, Permits & Approvals	Permit outcomes will depend upon consistency with Ecology’s permit approval criteria, plan guidance and mitigation requirements.		
Constraints and Uncertainties			
Constraint	Legal requirements and standards associated with individual permits may limit project alternatives and mitigation requirements; if not factored into analyses, mitigation requirements may increase project costs above projected; permit review and approval timelines may delay project construction or limit construction periods; permit processing timelines will depend upon the quality and clarity of information provided for review; etc.		
Operation and Maintenance			
Est. Annual Cost	TBD		
Describe O&M Tasks	TBD		

Task 4	Water System Plan Update (if needed)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<p>Development or modification of a Water System Plan or Small Water System Management Plan (SWSMP) requires the following general tasks:</p> <ul style="list-style-type: none"> • Contract for plan development (if needed) • Develop or modify plan elements to address the following: <ul style="list-style-type: none"> ○ Description of water system ○ Basic Planning Data ○ System Analysis ○ Conservation Program ○ Source water protections ○ Operation and Maintenance program ○ Distribution facilities design and construction standards ○ Capital improvement program ○ Financial program • Completion of consistency determination • Compliance with SEPA • Approval by lead authority, Dept. of Health and Dept. of Ecology 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; coordination meetings; public outreach; advertising; project oversight and administration; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers, printers; meeting locations and scheduling; coordination with permitting entities, and purveyors; etc.	
Agreements, Ordinances, Permits & Approvals	Approval of the Department of Health is required. Compliance with the following statutes is also required: Efficiency Requirements Act Chapter 5, Laws of 2003; State Board of Health Code RCW 43.20; RCW 70.119; WAC 246-290 and 246-293; and RCW 90.03. Compliance with WAC 197-11 and RCW 43.21 may also be required. If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; etc.	
Constraints and Uncertainties		
Constraint	Availability of funding may limit ability to conduct analyses and assessments; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; etc.	
Operation and Maintenance		
Est. Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 5	Project Design and Engineering	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Contract for plan development (if needed) • Develop preliminary design and engineering plans for the preferred alternative • Prepare final design and engineering plans for approval • Approval of preferred alternative by lead authority/ authorities, Department of Health and Department of Ecology 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; modeling/data analysis and assessment; coordination meetings; public outreach; project oversight and administration; plan review and approval; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; field equipment; drafting hardware and software; etc	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work; etc.	
Other		
Constraints and Uncertainties		
Constraint	Availability of funding may limit ability to conduct design and engineering analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect design and engineering alternatives; etc.	
Response	TBD	
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 6	Project Construction	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Prepare final construction plans and specifications for permitting • Permitting: TBD (e.g., shoreline substantial development permit; critical areas; floodplain; grading and clearing; Section 404; Section 401 Certification; hydraulic project approval; SEPA compliance, etc) • Prepare RFP and hire contractor(s) • Initiate construction • Project management and oversight • Project completion • Operation and Maintenance 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; contractor services; staff time; permitting and application fees; project oversight and administration; mitigation implementation; monitoring; permit fees; supplies and materials; project meetings; compliance inspections; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; equipment rentals; supply and material handling and transport; etc.	
Agreements, Ordinances, Permits & Approvals	Permits for construction will vary depending on specific project. Examples of required permits include: shoreline substantial development permit; building; critical areas; floodplain; grading and clearing; ESA consultation; Section 404; Section 401 certification; hydraulic project approval; and SEPA compliance. Approval of final construction plans by the project proponent, purveyor, Department of Health and/or Department of Ecology may be required; if multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions related to construction; contracts between proponents and consultants/contractors may be needed; etc.	
Constraints and Uncertainties		
Constraint	Construction may be delayed if permit approvals are not secured sufficiently in advance; changes in supply and material costs may affect construction timelines and budgets; weather constraints affect project timing; permit requirements may affect construction methods, timing and design; etc.	
Operation and Maintenance		
Est. Annual Cost	TBD	
Describe O&M Tasks	Once completed, the project will require ongoing monitoring, infrastructure maintenance and upgrades. Project plans and funding approaches should include provisions for long-term operation and maintenance.	
General Comments		

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #911 AND #911C
SOURCE SUBSTITUTION: LARGE COMMERCIAL/INDUSTRIAL USERS

Action Summary¹	
Lead Partner(s)	Private Industry (large plants)
Oversight Responsibilities	Department of Health, Department of Ecology
Coordinating Partner(s)	Planning Unit, Department of Health, Department of Ecology, Adjacent water Systems
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #911: Replace an existing source of supply with a different source to reduce impacts on stream flow. Requires engineering studies; water rights processing; other permitting; inter-local agreements or contracts; construction; operations & maintenance (See Section 3.3.2).
	Subaction #911C: Contact a large commercial/industrial water rights holder (10 cfs) on the Coweeman River to consider substituting a deeper ground water source for the current surface water diversion. Pg. 4-46
Plan Background & Context	<p>In general, the Planning Unit recommends that new urban or suburban developments or industrial facilities that require new or expanded water supplies shall seek to obtain water from existing municipal or other water suppliers rather than developing separate sources of supply, as described in Action #913. (Note: this would not apply to agricultural uses). If an existing municipal supplier or other water supplier is not available, then the new development or industrial facility should follow the procedure described in Section 3.3.1. Options to provide financial incentives and/or technical assistance to large industries for water conservation and water reuse will be explored, where this can be linked directly to protection of stream flows. The Plan calls upon Department of Health, Department of Ecology, and the Planning Unit to provide technical assistance and help obtaining funding. Pg 3-13</p> <p>Ecology should contact large water rights holder(s) to consider substituting a deeper ground water source for the current surface water diversion on the Coweeman River. This is a Planning Unit recommendation regarding voluntary actions. Implementation should not be mandated by the State. Pg 4-46</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions, and Coordination Needs	This action relates to providing technical and financial assistance to industrial water users seeking new or expanded supplies, or seeking to improve conservation of existing supplies. This Subaction is intended to facilitate the following: connection to existing municipal water supplies (Subaction #913B); exploration of alternative sources that are tidally influenced and not in continuity with tributary surface waters (Subaction #909F); evaluation of non-potable supplies (Subaction #913C). This Subaction would also likely involve the alternative source analysis process outlined in Section 3.3.1, per Subaction #909B. Close coordination between industrial water users, Department of Ecology, and the Planning Unit will be needed. It is anticipated that the Planning Unit will take the lead in facilitating initiation of this Subaction.
Expected Outcomes	Development of water supplies that: Meet existing, new or expanded industrial water supply needs consistent with WSP-1; and Reduce and avoid adverse effects on stream flows and aquatic habitat consistent with WSP-2.
Is the Action Fully Addressed by the Tasks Below?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy WSP-1: Access to Water Supplies (Pg 3-9) Policy WSP-1: Columbia River Resource (Pg 3-9) Policy WSP-2: Stream Flow Protection in Developing Supplies (Pg 3-9) Policy WSP-2: Industrial Water Supply(Pg 3-23) Policy WSP-2: Procedure for Evaluating Existing Supplies (Pg 3-13) Policy WSP-2: Aquifer Mapping (Pg 3-11) Policy WSP-2: Water Supply – New Developments and Industrial Supplies (pg 3-13) Policy SFP-2: Restrictions on New Water Rights (Pg 4-18, 4-19) Policy SFP-5: Source Substitution (Pg 4-26)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	TBD
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Identify and Contact Large Commercial/Industrial Water Rights Holder	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> Identify and contact large commercial/industrial water rights holders Determine willingness to consider source substitution If willing proceed to task 2 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; coordination meetings; public outreach; project administration; etc.	
Funding Source(s)	Potential sources include: grants from existing state & federal programs; private industry; legislative appropriations; congressional appropriations; state, county, city general fund revenues; misc. grants; Phase 4 implementation grants; grants from DOH or Ecology; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	Agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; etc.	
Other	TBD	
Constraints and Uncertainties		
TBD		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 2		Conduct Alternative Supply Analysis	
Schedule			
Start Date	TBD		
Planned Completion	TBD		
Actual Completion	TBD		
Benchmarks/ Milestones	<ul style="list-style-type: none">• Identify highest priority implementation opportunities based on the above Task;• In coordination with commercial/industrial user(s), identify and secure funding sources;• In coordination with industrial user(s), identify (as appropriate):<ul style="list-style-type: none">◦ Potential supply source alternatives, including but not limited to:<ul style="list-style-type: none">▪ Different (most likely deeper) aquifer▪ Purchase of water neighboring community▪ Development of tidally-influenced source▪ Purchase from regional water system◦ Other potential measures to reduce instream flow impacts, including but not limited to:<ul style="list-style-type: none">▪ Permanent curtailment of use▪ Seasonal curtailment of use▪ Conservation measures▪ Infrastructure improvements▪ Water re-use and reclamation• Coordinate with adjacent or existing service providers as needed• Conduct feasibility analysis of alternatives (e.g., impacts, costs, logistics, instream flow benefits, etc.)• Publish alternatives analysis report• Select preferred alternative(s) for implementation• In coordination with industrial user, solicit and secure funding for implementation		
Resource Needs			
Costs	Period Beginning: TBD	Amount: TBD	
	Total: TBD		
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; project oversight and administration; etc.		
Funding Source(s)	See Task 1		
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.		
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work and assessment; etc.		

Constraints and Uncertainties	
Constraint	Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect alternatives considered in the analysis; potential surface water impacts will affect project outcomes and identification of a preferred alternative; etc.
Operation and Maintenance	
Estimated Annual Cost	TBD
Describe O&M Tasks	TBD

Task 3	Project Design, Engineering and Implementation (See Action #911)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	See Action #911	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	See Action #911	
Funding Source(s)	See Action #911	
Logistical Needs	See Action #911	
Agreements, Ordinances, Permits & Approvals	See Action #911	
Other		
Constraints and Uncertainties		
Constraint	See Action #911	
Response	See Action #911	
Operation and Maintenance		
Estimated Annual Cost	See Action #911	
Describe O&M Tasks	See Action #911	
General Comments		
See Action #911		

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #912 AND SUBACTIONS
#912A AND #912B**

ENHANCED CONSERVATION EXCEEDING STATE REQUIREMENTS

Action Summary¹	
Lead Partner(s)	Public Water Systems (Including City of Winlock)
Oversight Responsibilities	Public Water Systems
Coordinating Partner(s)	Department of Health, County Health Departments, Ecology
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input checked="" type="checkbox"/> Revised
Table Description	Action #912: Enhanced conservation exceeding state requirements in selected communities (See Section 3.3.1).
	<p>Subaction #912A: Carry out a water conservation program to minimize impacts on stream flow in Olequa Creek. It is anticipated that this would require examination of cost, potential rate impacts on City customers and other feasibility criteria. Pg 4-51</p> <p>Subaction #912B: Carry out conservation activities that exceed state requirements in selected communities where water use has the potential to cause significant impairment of stream flow conditions. Pg 4-24</p>
Plan Background & Context	<p>Because of the particular water sources or locations of the sources that provide most of the water used in WRIAs 25 and 26, there are only limited opportunities to improve or protect stream flows with water conservation programs. There are some exceptions, however, where municipal wells are located in close proximity to surface water bodies farther upstream, and where surface/ground water interactions could potentially result in well pumping affecting stream flows. Enhanced conservation efforts by these municipalities may provide some benefit to surface flows, due to the potential hydraulic connectivity between their wells and nearby surface water. Conservation activities that exceed state requirements should be carried out in selected communities where water use has the potential to cause significant impairment of stream flow conditions. This is a Planning Unit recommendation for voluntary actions. Implementation should not be mandated by the State. Pgs 3-23 and 4-24</p> <p>The City of Winlock has some potential for impacting flows in Olequa Creek through groundwater withdrawals. In addition, substantial additional water uses are under consideration in Winlock at this time, associated with a proposed new industrial facility (Cardinal Glass). Pg 4-48</p> <p>The City of Winlock uses six wells for its source of water. While existing water use by the City is only approximately 170 acre-feet per year (afy), the City may experience a significant (i.e., 100 percent) increase in water use in the near future, as a new industry is considering locating near the City, and may request water on the order of 180 afy. Enhanced conservation efforts by Winlock could provide some benefit to stream flows in Olequa Creek, due to the potential hydraulic connectivity between the wells and nearby streams. Pg 4-51</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions, and Coordination Needs	This Action could assist with achieving instream flow objectives under the target flow monitoring and implementation program called for in Action #919. Identification and implementation of water conservation actions is also related to the process identified in Section 3.3.1, as described in Action #909. When implemented in concert with source substitution Action #911, this Action could improve instream flows while providing for community supply needs. Coordination with Department of Ecology and Department of Health may also be needed to identify conservation opportunities and implementation considerations.
Expected Outcomes	Implementation of water conservation measures that: Provide a long-term regional water source to meet projected residential, commercial and industrial growth needs within the City of Winlock and/or other jurisdictions; and Improve summer low flow conditions within Olequa Creek and/or other watercourses.
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy WSP-1: Access to Water Supplies (Pg 3-9) Policy WSP-1: Cowlitz River Resource (Pg 3-10) Policy WSP-1: Water Supply (Pg 3-10) Policy WSP-2: Stream Flow Protection in Developing Supplies (Pg 3-9) Policy WSP-2: Procedure for Evaluating Existing Supplies (Pg 3-13) Policy WSP-2: Water supply – New Developments and Industrial Supplies (Pg 3-13) Policy SFP-1: Target Flow (Olequa Creek and Coweeman River) (Pgs G-3 through G-8) Policy SFP-3: Water Conservation (Pg 4-24) Policy SFP-3: Water Conservation – Winlock (4-51)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Low to Medium
Identify Tasks that have not been Fully Funded	Tasks 1, 2, 3 and 4

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Pre-project Planning	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> Identify funding sources Secure funds Prepare RFP/hire contractor (if needed) (addresses following Tasks) Possible MOU/MOA between jurisdictions 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; coordination meetings; public outreach; advertising; project oversight and administration; etc.	
Funding Source(s)	Potential sources include: water rates and hookup charges in affected service area; grants or low-interest loans from existing state & federal programs; private industry; public water system; legislative appropriations; congressional appropriations; state, county, city general fund revenues; misc. grants; city development fees; large water users; assessments of affected properties (local improvement districts); Phase 4 implementation grants; grants from DOH or Ecology; private industry; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; etc.	
Other		
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 2	Conduct Feasibility Study	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Coordinate with adjacent or existing service providers as needed• Conduct feasibility analysis of conservation alternatives (impacts, costs, logistics, etc.), including any needed field assessment• Identify “preferred alternatives” for implementation• Approval of preferred alternatives by City of Winlock (or other purveyors), Department of Health and Department of Ecology, as appropriate• Publish alternatives analysis report	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; public outreach; project administration; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work; etc.	
Other	TBD	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect alternatives considered in the analysis; potential surface water impacts will affect project outcomes and identification of a preferred alternative; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 3	Project Design and Engineering	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Contract for plan development (if needed)• Develop preliminary design and engineering plans for the preferred alternatives• Prepare final design and engineering plans for approval• Approval of preferred alternative by City of Winlock (other other entities), Department of Health and Department of Ecology as appropriate	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; modeling/data analysis and assessment; coordination meetings; public outreach; project oversight and administration; plan review and approval; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; field equipment; drafting hardware and software; etc	
Agreements, Ordinances, Permits & Approvals	See Task 2	
Other		
Constraints and Uncertainties		
Constraint	Availability of funding may limit ability to conduct design and engineering analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect design and engineering alternatives; etc.	
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 4	Project Construction	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Prepare final construction plans and specifications for permitting • Permitting: TBD (e.g., shoreline substantial development permit; critical areas; floodplain; grading and clearing; Section 404; Section 401 Certification; hydraulic project approval; SEPA compliance, etc). • Prepare RFP and hire contractor(s); • Initiate construction; • Project management and oversight; and • Project completion • Operation and Maintenance 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; contractor services; staff time; permitting and application fees; project oversight and administration; mitigation implementation; monitoring; permit fees; supplies and materials; project meetings; compliance inspections; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; equipment rentals; supply and material handling and transport; etc.	
Agreements, Ordinances, Permits & Approvals	Permits for construction will vary depending on specific project. Examples of required permits include: shoreline substantial development permit; building; critical areas; floodplain; grading and clearing; ESA consultation; Section 404; Section 401 certification; hydraulic project approval; and SEPA compliance. Approval of final construction plans by the project proponent, purveyor, Department of Health and/or Department of Ecology may be required; if multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions related to construction; contracts between proponents and consultants/contractors may be needed; etc.	
Constraints and Uncertainties		
Constraint	Construction may be delayed if permit approvals are not secured sufficiently in advance; changes in supply and material costs may affect construction timelines and budgets; weather constraints affect project timing; permit requirements may affect construction methods, timing and design; etc.	
Operation and Maintenance		
Est. Annual Cost	TBD	
O&M Tasks	Once completed, the project will require ongoing monitoring, infrastructure maintenance and upgrades. Project plans and funding approaches should include provisions for long-term operation and maintenance.	
General Comments		

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: #913 B
SEE #909 F

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #913, 913A AND 913D
INDUSTRIAL SUPPLIES: EXPAND CONSERVATION AND REUSE

Action Summary ¹	
Lead Partner(s)	Private Industry (large plants)
Oversight Responsibilities	DOH, Ecology
Coordinating Partner(s)	Planning Unit, DOH, Ecology
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input checked="" type="checkbox"/> Revised
Table Description	Action #913: Industrial supplies: Expand conservation & reuse; develop non-potable sources; connect to municipal systems (See 3.5.3)
	<p>Subaction #913A: The Planning Unit places an emphasis upon water conservation and reuse with respect to industries with large water demands. Ecology should develop technical assistance and funding opportunities focused specifically upon the needs of self-supplied industries, to aid in reducing current water demands. Pg 3-23</p> <p>Subaction #913D: Identify options to provide financial incentives and/or technical assistance to large industries for water conservation and water reuse, where this can be linked directly to protection of stream flows. Pg 3-13</p> <p>The Planning Unit recommends that large, self-supplied industrial water users evaluate development of Columbia River non-potable supplies. The Planning Unit commits to aiding industries in identifying and obtaining funding sources for implementation of such a project, most likely through programs administered by Ecology and DOH. Pg 3-23 (See recommendation in 7.3).</p>
Plan Background & Context	In general, the Planning Unit recommends that new urban or suburban developments or industrial facilities that require new or expanded water supplies shall seek to obtain water from existing municipal or other water suppliers rather than developing separate sources of supply, as described in Action #913. (Note: this would not apply to agricultural uses). If an existing municipal supplier or other water supplier is not available, then the new development or industrial facility should follow the procedure described in Section 3.3.1. Options to provide financial incentives and/or technical assistance to large industries for water conservation and water reuse will be explored, where this can be linked directly to protection of stream flows. The Plan calls upon Department of Health, Department of Ecology, and the Planning Unit to provide technical assistance and help obtaining funding. Pg 3-13

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions, and Coordination Needs	This action relates to providing technical and financial assistance to industrial water users seeking new or expanded supplies, or seeking to improve conservation of existing supplies. This Subaction is intended to facilitate the following: connection to existing municipal water supplies (Subaction #913B); exploration of alternative sources that are tidally influenced and not in continuity with tributary surface waters (Subaction #909F); evaluation of non-potable supplies (Subaction #913C). This subaction would also likely involve the alternative source analysis process outlined in Section 3.3.1, per Subaction #909B. Close coordination between industrial water users, Department of Ecology, and the Planning Unit will be needed. It is anticipated that the Planning Unit will take the lead in facilitating initiation of this Subaction.
Expected Outcomes	<p>Development of water supplies that:</p> <p>Meet existing, new or expanded industrial water supply needs consistent with WSP-1; and</p> <p>Reduce and avoid adverse effects on stream flows and aquatic habitat consistent with WSP-2.</p>
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	<p>Policy WSP-1: Access to Water Supplies (Pg 3-9)</p> <p>Policy WSP-1: Columbia River Resource (Pg 3-9)</p> <p>Policy WSP-2: Stream Flow Protection in Developing Supplies (Pg 3-9)</p> <p>Policy WSP-2: Industrial Water Supply(Pg 3-23)</p> <p>Policy WSP-2: Procedure for Evaluating Existing Supplies (Pg 3-13)</p> <p>Policy WSP-2: Aquifer Mapping (Pg 3-11)</p> <p>Policy WSP-2: Water Supply – New Developments and Industrial Supplies (pg 3-13)</p> <p>Policy SFP-2: Restrictions on New Water Rights (Pg 4-18, 4-19)</p> <p>Policy SFP-5: Source Substitution (Pg 4-26)</p>
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Low to High (Varies by facility)
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Identify and Prioritize Technical Assistance and Funding Opportunities	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">Identify and secure funding source for analysesIdentify industrial water users with conservation needs or increased demand for new or expanded suppliesCoordinate with industrial water users as neededPrioritize technical assistance opportunities based on potential instream flow impacts and benefits (e.g., recovery reach tiering, population priorities, low-flow considerations, etc.)Develop prioritized list of industrial users based on the aboveIdentify funding sources for subsequent Tasks	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; coordination meetings; public outreach; project administration; etc.	
Funding Source(s)	Potential sources include: grants from existing state & federal programs; private industry; legislative appropriations; congressional appropriations; state, county, city general fund revenues; misc. grants; Phase 4 implementation grants; grants from DOH or Ecology; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	Agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; etc.	
Other	TBD	
Constraints and Uncertainties		
TBD		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 2	Conduct Alternative Action Analysis	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">Identify highest priority implementation opportunities based on the above TaskIn coordination with industrial user(s), identify and secure funding sourcesIn coordination with industrial user(s), identify (as appropriate)<ul style="list-style-type: none">Potential supply source alternatives, including but not limited to<ul style="list-style-type: none">Different (most likely deeper) aquiferPurchase of water neighboring communityDevelopment of tidally-influenced sourcePurchase from regional water systemOther potential measures to reduce instream flow impacts, including but not limited to<ul style="list-style-type: none">Permanent curtailment of useSeasonal curtailment of useConservation measuresInfrastructure improvementsWater re-use and reclamationCoordinate with adjacent or existing service providers as neededConduct feasibility analysis of alternatives (e.g., impacts, costs, logistics, instream flow benefits, etc.)Publish alternatives analysis reportSelect preferred alternative(s) for implementationIn coordination with industrial user, solicit and secure funding for implementation.	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; project oversight and administration; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work and assessment; etc.	

Constraints and Uncertainties	
Constraint	Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect alternatives considered in the analysis; potential surface water impacts will affect project outcomes and identification of a preferred alternative; etc.
Operation and Maintenance	
Estimated Annual Cost	TBD
Describe O&M Tasks	TBD

Task 3	Project Design, Engineering and Implementation (See Actions #911, #912, 913 etc.)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	See Actions #911, #912, 913 etc.	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	See Actions #911, #912, 913 etc.	
Funding Source(s)	See Actions #911, #912, 913 etc.	
Logistical Needs	See Actions #911, #912, 913 etc.	
Agreements, Ordinances, Permits & Approvals	See Actions #911, #912, 913 etc.	
Constraints and Uncertainties		
Constraint	See Actions #911, #912, 913 etc.	
Response	See Actions #911, #912, 913 etc.	
Operation and Maintenance		
Estimated Annual Cost	See Actions #911, #912, 913 etc.	
Describe O&M Tasks	See Actions #911, #912, 913 etc.	
General Comments		
See Actions #911, #912, 913 etc.		

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #913 AND SUBACTION #913C
INDUSTRIAL SUPPLIES: EVALUATE DEVELOPMENT OF COLUMBIA RIVER
NOTNPOTABLE SUPPLIES

Action Summary¹	
Lead Partner(s)	Private Industry (large plants), Self-supplied Industrial Water Users, Planning Unit
Oversight Responsibilities	Department of Ecology, Department of Health
Coordinating Partner(s)	Self Supplied Industrial Water Users, Planning Unit, Ecology, DOH
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #913: Industrial supplies: Expand conservation & reuse; develop non-potable sources; connect to municipal systems (See 3.5.3)
	Subaction #913C: Evaluate development of Columbia River non-potable supplies. The Planning Unit commits to aiding industries in identifying and obtaining funding sources for implementation of such a project, most likely through programs administered by Ecology and DOH. (See recommendation in Section 7.3). Pg 3-23
Plan Background & Context	<p>Projection of water usage by self-supplied industry in the future is highly uncertain. In general, a basic assumption is that existing industries will continue to use the same amount of water used now; and that new industries will be supplied by major public water systems, with their needs included in existing demand projections. Pg 3-22</p> <p>The Planning Unit places an emphasis upon water conservation and reuse with respect to industries with large water demands. Ecology should develop technical assistance and funding opportunities focused specifically upon the needs of self-supplied industries, to aid in reducing current water demands. Pg 3-23</p> <p>Where feasible, industries requiring additional sources of supply in the future should connect to existing municipal water supplies. Where not feasible due to technical issues, logistics, or cost, then it is recommended that the industry evaluate alternative sources as described in Section 3.3.1. Pg 3-23</p> <p>The Planning Unit recommends that large, self-supplied industrial water users evaluate development of Columbia River non-potable supplies. The Planning Unit commits to aiding industries in identifying and obtaining funding sources for implementation of such a project, most likely through programs administered by Ecology and DOH. Pg 3-23</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions, and Coordination Needs	Evaluation and development of non-potable supplies is consistent with and supports the recommended alternative source planning studies (Action #910), source substitution Subactions (e.g., Subactions #911 and #911A), and enhanced conservation measures (Subaction #911D). If non-potable water supplies are identified and developed, any instream flow improvements would assist with meeting target flow monitoring and management program goals, per Action #919. Reducing instream flow and habitat impacts will also help to achieve established recovery goals for priority fish populations. Close coordination between industrial supply users, water purveyors, and state agencies will be needed.
Expected Outcomes	Identify opportunities for industrial use of non-potable water sources to meet existing or expanded supply needs (see WSP-1); and Reduce potential adverse effects of industrial supply withdrawals on stream flows and aquatic habitat (see WSP-2)
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy WSP-1: Access to Water Supplies (Pg 3-9) Policy WSP-1: Columbia River Resource (Pg 3-9) Policy WSP-1: Columbia River Resource (Pg 3-10) Policy WSP-2: Stream Flow Protection in Developing Supplies (Pg 3-9) Policy WSP-2: Procedure for Evaluating Existing Supplies (Pg 3-11 and 3-13) Policy WSP-2: Water Supply – New Developments and Industrial Supplies (pg 3-13) Policy WSP-2: Conservation and Reuse – Industrial Needs (Pg 3-23) Policy WSP-2: Industrial Water Supply– Non-potable supply (Pg 3-23) Policy SFP-1: Target Flows – Olequa Creek and Coweeman River (Pgs G-3, G-4,G-7,G-8)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Low to High (Varies by facility)
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Pre-Project Planning	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Planning Unit facilitation of coordination meeting between existing service providers, affected jurisdictions, and regulatory agencies • Identify roles and responsibilities of participating entities • Identify funding sources • Secure funds (Planning Unit assistance) • Prepare RFP/hire contractor (if needed) (addresses following Tasks) • Possible MOU/MOA between entities 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; coordination meetings; public outreach; advertising; project oversight and administration; etc.	
Funding Source(s)	Potential sources include: water rates and hookup charges in affected service area; grants or low-interest loans from existing state & federal programs; private industry; public water system; legislative appropriations; congressional appropriations; state, county, city general fund revenues; misc. grants; city development fees; large water users; assessments of affected properties (local improvement districts); Phase 4 implementation grants; grants from DOH or Ecology; private industry; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; etc.	
Other		
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 2	Conduct Feasibility Study	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Conduct feasibility analysis of non-potable supply alternatives (sources, impacts, costs, logistics, instream flow benefits, etc.), including any needed field assessment • Identify "preferred alternatives" for implementation of non-potable source alternatives • Approval of preferred alternatives (e.g., industrial users, Department of Health and Department of Ecology, as appropriate) • Publish alternatives analysis report 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
TBD	Total: TBD	
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; public outreach; project administration; etc.	
Funding Source(s)	See Task 1.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work; etc.	
Other	TBD	
Constraints and Uncertainties		
Constraint	Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect alternatives considered in the analysis; potential surface water impacts will affect project outcomes and identification of a preferred alternative; etc.	
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 3	Project Design and Engineering	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Contract for plan development (if needed)• Develop preliminary design and engineering plans for the preferred alternatives• Prepare final design and engineering plans for approval• Approval of preferred alternative by industrial users, Department of Health and Department of Ecology, as appropriate	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
TBD	Total: TBD	
Key Cost Drivers	Consulting services; staff time; modeling/data analysis and assessment; coordination meetings; public outreach; project oversight and administration; plan review and approval; etc.	
Funding Source(s)	See Task 1.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; field equipment; drafting hardware and software; etc	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work; etc.	
Other	TBD	
Constraints and Uncertainties		
Constraint	Availability of funding may limit ability to conduct design and engineering analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect design and engineering alternatives; etc.	
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 4	Project Construction	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Identify construction lead• Prepare final construction plans and specifications for permitting• Permitting: TBD (e.g., shoreline substantial development permit; critical areas; floodplain; grading and clearing; Section 404; Section 401 Certification; hydraulic project approval; SEPA compliance, etc).• Prepare RFP and hire contractor(s);• Initiate construction;• Project management and oversight; and• Project completion• Operation and Maintenance	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; contractor services; staff time; permitting and application fees; project oversight and administration; mitigation implementation; monitoring; permit fees; supplies and materials; project meetings; compliance inspections; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; equipment rentals; supply and material handling and transport; etc.	
Agreements, Ordinances, Permits & Approvals	Permits for construction will vary depending on specific project. Examples of required permits include: shoreline substantial development permit; building; critical areas; floodplain; grading and clearing; ESA consultation; Section 404; Section 401 certification; hydraulic project approval; and SEPA compliance. Approval of final construction plans by the project proponent, purveyor, Department of Health and/or Department of Ecology may be required; if multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions related to construction; contracts between proponents and consultants/contractors may be needed; etc.	

Constraints and Uncertainties	
Constraint	Construction may be delayed if permit approvals are not secured sufficiently in advance; changes in supply and material costs may affect construction timelines and budgets; weather constraints affect project timing; permit requirements may affect construction methods, timing and design; etc.
Operation and Maintenance	
Est. Annual Cost	TBD
O&M Tasks	Once completed, the project will require ongoing monitoring, infrastructure maintenance and upgrades. Project plans and funding approaches should include provisions for long-term operation and maintenance.
General Comments	

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTIONS #914 AND #926,
SUBACTIONS#914A AND #926A
INDIVIDUAL DOMESTIC WELLS AND
EXTENSION OF SEWER SERVICE- PLANNING CONSIDERATIONS**

Action Summary ¹	
Lead Partner(s)	Counties, Cities
Oversight Responsibilities	Ecology, Department of Health
Coordinating Partner(s)	TBD
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input checked="" type="checkbox"/> Revised
Table Description	Action #914: Consider the effects of individual domestic wells when modifying or adopting comprehensive plans, zoning designations, or other land use regulations. (See Section 3.5.2).
	Subaction #914A: When modifying or adopting comprehensive plans, zoning designations, or other land use regulations, identify areas where exempt well use densities may adversely affect local flows, and utilize municipal or existing water sources over individual well sources, to the extent permissible by State law, to meet water needs of suburban and rural developments. If this is not possible, sources should be developed from deep aquifers. Land use densities in flow sensitive areas, such as small tributaries, should not be increased. Pg 3-21
	Action #926: When modifying or adopting comprehensive plans, zoning designations, or other land use regulations, consider the water balance implications of allowing extension of sewer service to communities formerly served by septic systems (See Section 4.5.2).
	Subaction #926A: When modifying or adopting comprehensive plans, zoning designations or other land use regulations, Lewis, Cowlitz, and Wahkiakum Counties and the cities in all three counties in WRIAs 25 and 26 should consider the water balance implications of allowing extension of sewer service to developing areas. The Planning Unit recognizes that provision of sewer service can provide substantial water quality benefits. However, where sewer service is extended to replace septic systems, and residents continue to rely on water wells, stream flows may be reduced. This effect should be anticipated and mitigated where applicable. This is particularly important in areas with relatively dense development near small streams. Pg 4-31

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Plan Background & Context	<p>During preparation of a watershed Plan in the nearby WRIAs 27 and 28, LCFRB commissioned a pilot review of data on individual domestic wells (exempt wells) in the Washougal River subbasin. In this setting, where rural residences are relatively low-density, and where most houses have septic systems that return domestic water to the subsurface, well withdrawals have a relatively small effect on stream flow in the dry season. Based on this finding, management of exempt wells does not appear to be a high priority at the regional scale within WRIAs 25 and 26. However, there may be localized areas where due to density, availability of public sewer service, or other conditions, even individual domestic wells could cause problems for stream flow. Pg 3-4, 4-26</p> <p>In WRIAs 25 and 26 individual (exempt) well use is a relatively large proportion of the water demand increase in the basin. However, based upon the results of the analysis, projected water withdrawals comprised by this category of water use will remain relatively small compared to overall baseflows. (See Sec 3.1.2) County and city policies provide an adequate means to help offset impacts caused by exempt wells. In areas where exempt well use densities may adversely affect local flows, suburban and rural developments should utilize municipal or existing water sources over individual well sources, to the extent permissible by State law. If this is not possible, sources should be developed from deep aquifers. Land use densities in flow sensitive areas, such as small tributaries, should not be increased. Pg 3-21</p> <p>In limited cases, this policy may also apply to rural areas where residents rely on individual domestic wells (exempt wells). Cowlitz, Lewis and Wahkiakum Counties, Cities, local governments, Ecology and/or others as appropriate should assess this possibility through a water-balance analysis, in selected rural areas where extensive new development is expected to occur or where there is substantial existing development served by exempt wells. Pg 4-26</p>
Relationship to Other Actions and Coordination Needs	<p>The Washougal River pilot assessment of exempt well impacts suggested that in areas where low-density development is served by exempt wells and septic systems, instream flow impacts are not a high priority concern. However, Action #914 is intended to address situations where higher density development could pose problems to instream flows. Related Action #926 is intended to address situations where extension of sewer service to areas served by domestic wells could deplete instream flows. These Actions call for consideration of these potential instream flow impacts when modifying or adopting comprehensive plans, zoning designations, or other land use regulations. The successful implementation of these Actions would support broader Actions designed to protect and restore instream flows (e.g., Actions #918, #919, #922, #922A, #923, etc). Identification of alternative sources of supply to reduce instream flow impacts would involve Action #909B, which describes the procedure for evaluating new or expanded supplies. Aquifer mapping per Action #910, #910A could also help with identification of alternative water supplies.</p>

Expected Outcomes	Development and implementation of land use plans and regulations that eliminate or reduce instream flow impacts resulting from high densities of residences served by domestic wells and septic systems, and/or extension of sewer services to these areas.
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy WSP-1: Access to Water Supplies (Pg 3-9) Policy WSP-1: Reservations for Water Supply (Pg 3-12) Policy WSP-1: Aquifer Mapping (Pg 3-11) Policy WSP-2: Stream Flow Protection in Developing Supplies (Pg 3-9) Policy WSP-2: Procedure for Evaluating Existing Supplies (Pg 3-13) Policy SFP-1: Target Flows (Pg. G-3, G-4, G-7, G-8) Policy SFP-2: Restrictions on New Water Rights (Pg 4-18, 4-19) Policy SFP-5: Source Substitution (Pg 4-26) Policy SFP-11: Sewer Extensions (Pg 4-31)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Low (will vary depending on entity)
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks	
Task 1	Integrate Instream Flow Considerations into Planning Processes
Schedule	
Start Date	TBD
Planned Completion	TBD
Actual Completion	TBD
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Initiate planning process based on the need to develop or update comprehensive plans, zoning designations, or other land use regulations or plans • Identify the scope and scale of target planning area(s) • Coordinate with water and sewer service providers, DOH, and Ecology as needed • Identify critical reaches for preservation or enhancement of instream flows in the planning area(s) using information in: <ul style="list-style-type: none"> ○ Salmon Recovery/Subbasin Plans <ul style="list-style-type: none"> ▪ Population priority ▪ Reach priority ▪ Limiting factors relating to flow ▪ Other relevant information ○ WRIA 25/26 Watershed Plan <ul style="list-style-type: none"> ▪ Identified low flow problems ▪ Instream flow/toe width data ▪ Target flow priorities ▪ Status of basin (e.g., closed, open, etc.) ▪ Tidal versus non-tidal reaches ▪ Reservation status ▪ Technical assessments and studies ○ Other applicable watershed or resource plans • Prioritize critical reaches for preservation or enhancement of instream flows • Conduct a water balance within the target planning area(s), addressing: <ul style="list-style-type: none"> ○ Location and number of existing and projected domestic wells and other water supply sources ○ Location and number of existing and projected onsite sewage disposal systems ○ Location of existing and projected sewer service areas ○ Analysis of the relationship between existing and projected water supplies, onsite and offsite sewage treatment and disposal systems, and instream flows (Note: this task may involve hydrological assessments or modeling) • Identify planning scenarios designed to preserve or enhance instream flow conditions (Note: See Actions #909 and #910 for processes to identify or expand alternative water supplies) • Select and implement preferred alternative(s). This may involve implementation of various plan actions and subactions (e.g., Action #911) • Integrate preferred alternative(s) into land use plans and codes as necessary.

Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; coordination meetings; consulting services; public outreach; advertising; project oversight and administration; etc.	
Funding Source(s)	Varies depending on entity. Potential sources include: water rates and hookup charges in affected service area; grants or low-interest loans from existing state & federal programs; public water system; legislative appropriations; congressional appropriations; state, county, city general fund revenues; misc. grants; county/city development fees; Phase 4 implementation grants; grants from DOH or Ecology; private industry; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; compliance with a variety of land use statutes and planning requirements (e.g., GMA, comprehensive planning, SEPA, capital facilities planning, etc) may be needed.	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; extensive public coordination and outreach will be necessary, etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

General Comments

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #914 AND SUBACTION #914B,
CONSIDER EFFECTS OF INDIVIDUAL DOMESTIC WELLS
SERVICED BY DOMESTIC WELLS**

Action Summary¹	
Lead Partner(s)	Counties, Cities
Oversight Responsibilities	Ecology
Coordinating Partner(s)	Public Water Systems, Landowners
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #914: Consider the effects of individual domestic wells when modifying or adopting comprehensive plans, zoning designations, or other land use regulations. (See Section 3.5.2).
	Subaction #914B: In areas where exempt well use densities may adversely affect local flows, suburban and rural developments should utilize municipal or existing water sources over individual well sources, to the extent permissible by State law. If this is not possible, sources should be developed from deep aquifers. Land use densities in flow sensitive areas, such as small tributaries, should not be increased. Pg 3-21
Plan Background & Context	<p>While specific studies were not conducted in WRIAs 25 and 26 subbasins, a study was conducted in the Washougal River subbasin in WRIAs 27 and 28 that focused on evaluating the impact of exempt wells. This analysis considered the impact that withdrawals by individual domestic wells have upon stream flows in the Lacamas Creek drainage area within the Washougal River subbasin. The results of the effort have been reported in a Technical Memorandum entitled <i>Effect of Exempt Wells on Baseflow – Washougal River Watershed</i> (PGG, 2003). In general, this analysis concluded that exempt well withdrawals have a minimal impact upon stream flow levels. In some cases, baseflows are even increased when the effects of exempt wells and septic system return flows are considered in conjunction. While this case study focused upon a specific geographic area, the findings may generally be considered in the WRIAs 25 and 26 basins. Based on this comparison, it is unlikely that individual well withdrawals result in significant adverse impacts to stream flows in WRIAs 25 and 26. However, clusters of shallow wells located in proximity to tributary streams may have some local impact due to combined effect of their withdrawals. Pgs 3-5, 3-20 and 3-21</p> <p>County and city policies provide an adequate means to help off-set impacts caused by exempt wells. In areas where exempt well use densities may adversely affect local flows, suburban and rural developments should utilize municipal or existing water sources over individual well sources, to the extent permissible by State law. If this is not possible, sources should be developed from deep aquifers. Land use densities in flow sensitive areas, such as small tributaries, should not be increased. Pg 3-21</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions and Coordination Needs	The Washougal River pilot assessment of exempt well impacts suggested that in areas where low density development is served by exempt wells and septic systems, instream flow impacts are not a high priority concern. However, Action #914 and #928 are intended to address situations where higher density development could pose problems to instream flows. Related Action #926 is intended to address situations where extension of sewer service to areas served by domestic wells could deplete instream flows. These Actions call for consideration of these potential instream flow impacts when modifying or adopting comprehensive plans, zoning designations, or other land use regulations. The successful implementation of these Actions would support broader Actions designed to protect and restore instream flows (e.g., Actions #917 through #923, #926 through #929, etc.). Identification of alternative sources of supply to reduce instream flow impacts would involve Action #910, which describes the procedure for evaluating new or expanded supplies. Aquifer mapping per Action #910E could also help with identification of alternative water supplies.
Expected Outcomes	Development and implementation of land use plans and regulations that eliminate or reduce instream flow impacts resulting from high densities of residences served by domestic wells and septic systems, and/or extension of sewer services to these areas.
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy WSP-1: Access to Water Supplies (Pg 3-9) Policy WSP-1: Reservations for Water Supply (Pg 3-12) Policy WSP-1: Columbia River Resource (Pg 3-9) Policy WSP-1: Cowlitz River Resource (Pg 3-10) Policy WSP-1: Water Supply (Pg 3-10) Policy WSP-1: Aquifer Mapping (Pg 3-11) Policy WSP-1: Tidally Influenced Reaches (Pg 3-14) Policy WSP-2: Stream Flow Protection in Developing Supplies (Pg 3-9) Policy WSP-2: Procedure for Evaluating Existing Supplies (Pg 3-13) Policy WSP-2: Water Supply – Small Water Systems (Pg 3-20) Policy WSP-2: Water Supply – Individual Household Wells (Pg 3-21) Policy SFP-5: Source Substitution (Pg 4-26) Policy SFP-11: Sewer Extensions (Pg 4-31)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Low
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks	
Task 1	Integrate Instream Flow Considerations into Planning Processes
Schedule	
Start Date	TBD
Planned Completion	TBD
Actual Completion	TBD
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Initiate planning process based on the need to develop or update comprehensive plans, zoning designations, or other land use regulations or plans • Identify the scope and scale of target planning area(s) • Coordinate with water and sewer service providers, DOH, and Ecology as needed • Identify critical reaches for preservation or enhancement of instream flows in the planning area(s) using information in: <ul style="list-style-type: none"> ○ Salmon Recovery/Subbasin Plans <ul style="list-style-type: none"> ▪ Population priority ▪ Reach priority ▪ Limiting factors relating to flow ▪ Other relevant information ○ WRIA 25/26 Watershed Plan <ul style="list-style-type: none"> ▪ Identified low flow problems ▪ Instream flow/toe width data ▪ Target flow priorities ▪ Status of basin (e.g., closed, open, etc.) ▪ Tidal versus non-tidal reaches ▪ Reservation status ▪ Technical assessments and studies ○ Other applicable watershed or resource plans • Prioritize critical reaches for preservation or enhancement of instream flows • Conduct a water balance within the target planning area(s), addressing: <ul style="list-style-type: none"> ○ Location and number of existing and projected domestic wells and other water supply sources ○ Location and number of existing and projected onsite sewage disposal systems ○ Analysis of the relationship between existing and projected domestic wells, onsite and offsite sewage treatment and disposal systems, and instream flows (Note: this task may involve hydrological assessments or modeling) • Identify planning scenarios designed to preserve or enhance instream flow conditions (Note: See Actions #909 and #910 for processes to identify or expand alternative water supplies) • Select and implement preferred alternative(s). This may involve implementation of various plan actions and subactions (e.g., Action #911). Identification of preferred alternatives must include examination of cost, potential rate impacts, reliability considerations, and evaluation of other feasibility criteria. • Integrate preferred alternative(s) into land use plans and codes as necessary.

Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; coordination meetings; consulting services; public outreach; advertising; project oversight and administration; etc.	
Funding Source(s)	Varies depending on entity. Potential sources include: water rates and hookup charges in affected service area; grants or low-interest loans from existing state & federal programs; public water system; legislative appropriations; congressional appropriations; state, county, city general fund revenues; misc. grants; county/city development fees; Phase 4 implementation grants; grants from DOH or Ecology; private industry; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; compliance with a variety of land use statutes and planning requirements (e.g., GMA, comprehensive planning, SEPA, capital facilities planning, etc) may be needed.	
Other		
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; extensive public coordination and outreach will be necessary, etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	
General Comments		

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #915 AND SUBACTIONS
#915A and #915A-1
SWITCH FROM SURFACE TO GROUND WATER
FOR AGRICULTURAL SUPPLIES**

Action Summary¹	
Lead Partner(s)	Agricultural Water User, Department of Ecology, Conservation District, Planning Unit
Oversight Responsibilities	Department of Ecology
Coordinating Partner(s)	Agricultural Water User, Department of Ecology, Conservation District, Planning Unit, others TBD
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #915: Agricultural supplies: switch from surface to ground water. Discourage new uses of surface water (use ground water instead) (See Section 3.5.4).
	<p>Subaction #915A: In those cases where surface water supplies are requested for agricultural purposes, conduct a review of alternative sources (see Section 3.3.1) to address potential impacts on stream flow. Pg 3-24</p> <p>Subaction #915A-1: Grant water right requests pertaining to future agricultural ground water demand, subject to consistency with the Planning Unit's water supply policy and successful completion of Ecology's water right application review process. Pg 3-24</p>
Plan Background & Context	<p>In support of the Watershed Plan, interviews were conducted with agencies representing the farmers and foresters in WRIAs 25 and 26, along with related governmental agencies in Lewis, Cowlitz and Wahkiakum Counties. The agriculture that does exist tends to be concentrated along the major river basins. There is some indication that some farmers have changed to more water-efficient irrigation practices (e.g. drip irrigation and pressurized systems.) over the past decade, but this is not well documented. There may be water supply issues affecting individual farmers in WRIAs 25 and 26. (Pg 3-23)</p> <p>In those cases where new surface water supplies are requested for agricultural purposes, it is recommended that a review of alternative sources of supply be conducted (see Sec 3.3.1) to address potential impacts on stream flow. The Planning Unit recommends that Ecology grant water right request pertaining to future agricultural ground water demand, subject to consistency with the Planning Unit's water supply policy and successful completion of Ecology's water right application review process. Pg 3-24</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions, and Coordination Needs	Subactions #915, 915A, #915A-1 are intended to work in concert with one another to address agricultural water demand needs while protecting and enhancing instream flows. These Subactions support implementation of Action #911, which relates to replacement of existing sources of supply with less impacting sources. Implementation of conservation actions by farmers per Action #927 will also help achieve the desired outcomes related to these Subactions. These Subactions could also support implementation of the instream flow monitoring and management program called for in Action #919, especially with regard to target flows. Completion of maps depicting the locations of deep aquifers suitable for water supply development per Action #910E could help identify opportunities for transfer of water agricultural water rights. Implementation of these Subactions will likely require close coordination between Ecology and agricultural water users. The Conservation District should be called upon to help facilitate implementation of these Subactions, and to help identify and prioritize candidates for consideration.
Expected Outcomes	Expedited transfer of groundwater rights from one user to another to meet agricultural water demands, consistent with WSP-1. Improved stream flows from transfer of water rights from existing surface water sources to less impacting groundwater sources consistent with WSP-2.
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy WSP-1: Access to Water Supplies (Pg 3-9) Policy WSP-1: Columbia River Resource (Pg 3-9) Policy WSP-2: Agricultural Water Supply (Pg 3-24) Policy WSP-2: Stream Flow Protection in Developing Supplies (Pg 3-9) Policy WSP-2: Aquifer Mapping (Pg 3-11) Policy SFP-1: Target Flows – Olequa Creek and Coweeman River (Pg G-4, G-5, G-7, G-8) Policy SFP-3: Water Conservation (Pg 4-24) Policy SFP-5: Source Substitution (Pg 4-26)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Low to Medium
Identify Tasks that have not been Fully Funded	Tasks 1 through 6

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Evaluate Relationship of Proposed Supply Project to Stream Flows (If existing source is being considered)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Pre-planning: Identify funding sources<ul style="list-style-type: none">◦ Secure funds◦ Prepare RFP/hire contractor (if needed)◦ Conduct water demand projections and analysis<ul style="list-style-type: none">▪ Coordinate with existing service providers▪ Quantify land use in proposed service area▪ Project build out density in the service area▪ Project water demand for planning horizon• Determine proposed amount of requested water right• Conduct analysis of instream flow impacts (location, timing, quantity, fish and aquatic resource impacts, etc.)• Options -<ul style="list-style-type: none">◦ If impacts identified, proceed to Task 2◦ If no impacts identified:<ul style="list-style-type: none">▪ Apply to Ecology for water right▪ Implement source replacement or development actions▪ Implement any required optimization and conservation actions	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; project oversight and administration; etc.	
Funding Source(s)	Water rates and hookup charges in affected service area. Grants or low-interest loans from existing state & federal programs, etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	Water right permit from Ecology would be needed for new or expanded sources, or for temporary withdrawals associated with testing.	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; potential surface water impacts will affect project outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	Not Applicable	
Describe O&M Tasks	Not Applicable	

Supporting Tasks		
Task 2	Conduct Alternative Supply Analysis (If Task 1 identifies flow regime impacts)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> Identify potential supply source alternatives, including but not limited to: <ul style="list-style-type: none"> Different (most likely deeper) aquifer Purchase of water neighboring community Development of tidally-influenced source Purchase from regional water system (Note: addresses Subactions #909B-1 and #909B-2) Coordinate with adjacent or existing service providers as needed Conduct feasibility analysis of alternatives (impacts, costs, logistics, etc.) Publish alternatives analysis report Options - <ul style="list-style-type: none"> If preferred and practicable alternative is available: <ul style="list-style-type: none"> Apply to Ecology for water right Implement source replacement or development actions Implement any required optimization and conservation actions If no preferred and practicable alternative is available, proceed to Task 3 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; field testing; modeling/data analysis and assessment; coordination meetings; project oversight and administration; etc.	
Funding Source(s)	Water rates and hookup charges in affected service area. Grants or low-interest loans from existing state & federal programs, etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work and assessment; revisions to Water Supply Plan and/or Small Water System Management Programs (SWSMP) may be required, which may also necessitate compliance with SEPA.	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect alternatives considered in the analysis; potential surface water impacts will affect project outcomes and identification of a preferred alternative; etc.		
Operation and Maintenance		
Est. Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 3		Petition Ecology to Utilize Reservation (If no practicable alternative is identified under Task 2)	
Schedule			
Start Date	TBD		
Planned Completion	TBD		
Actual Completion	TBD		
Benchmarks/ Milestones	<ul style="list-style-type: none">• Develop application package for proposed water right• Develop proposal for off-setting and mitigating actions addressing<ul style="list-style-type: none">◦ Acquisition of upstream water rights◦ Flow related actions◦ Habitat restoration actions (per Section 3.3.1)• Submit application to Ecology• Ecology review and coordination with WDFW• Consultation with Planning Unit (if needed)• Decision on application considering consistency with plan guidance, proposal for off-setting and mitigating actions, and requirements of RCW 90.03.290, including the following:<ul style="list-style-type: none">◦ Water will be put to beneficial use◦ There is no impairment to existing, or senior, rights;◦ Flow related actions◦ Water is available for appropriation◦ Issuance of the requested water right will not be detrimental to the public welfare.		
Resource Needs			
Costs	Period Beginning: TBD	Amount: TBD	
	Total: TBD		
Key Cost Drivers	Consulting services; staff time; application fees; modeling/data analysis and assessment; acquisition of water rights; agency coordination meetings; field assessment and studies; project administration; etc.		
Funding Source(s)	Proponent: Water rates and hookup charges in affected service area. Grants or low-interest loans from existing state & federal programs, etc. Permitting agencies: State General Fund		
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; etc.		
Agreements, Ordinances, Permits & Approvals	Water right permit from Ecology will be needed. Permit outcomes will depend upon Ecology’s permit approval criteria and consistency with plan guidance and mitigation requirements; permit delays may result from agency processing timelines and limitations.		
Constraints and Uncertainties			
Constraint	Legal requirements and standards associated with individual permits may limit project alternatives and mitigation requirements; differences in permit requirements may lead to incompatible outcomes; if not factored into analyses, mitigation requirements may increase project costs above projected; permit review and approval timelines may delay project construction or limit construction periods; permit processing timelines will depend upon the quality and clarity of information provided for review; reserve amount will affect quantity of water available for supply needs.		
Response	Develop a sound application proposal consistent with the mitigation guidelines and reserve strategy outlined in the plan.		

Operation and Maintenance	
Est. Annual Cost	Not applicable
Describe O&M Tasks	Not applicable

Task 4	Project Design and Engineering (If water right permit granted)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> Contract for design and engineering services (or use existing staff) Develop preliminary design and engineering plans Prepare final design and engineering plans for approval Approval of preferred alternative by lead authority/ authorities, Department of Health and Department of Ecology 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; staff time; modeling/data analysis and assessment; coordination meetings; public outreach; project oversight and administration; plan review and approval; etc	
Funding Source(s)	Water rates and hookup charges in affected service area. Grants or low-interest loans from existing state & federal programs, etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; field equipment; drafting hardware and software; etc	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work; approval of final design and engineering by the project proponent, Department of Health and Department of Ecology.	
Other		
Constraints and Uncertainties		
Constraint	Availability of funding may limit ability to conduct design and engineering analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect design and engineering alternatives; etc.	
Operation and Maintenance		
Estimated Annual Cost	Not applicable	
Describe O&M Tasks	Not applicable	

Task 5		Project Permitting and Approvals	
Schedule			
Start Date	TBD		
Planned Completion	TBD		
Actual Completion	TBD		
Benchmarks/ Milestones	<ul style="list-style-type: none">• Complete and file permit applications: shoreline substantial development permit; critical areas; floodplain; grading and clearing; Section 404 (if needed); and Section 401 Certification (if needed);• Prepare and submit revisions to Water System Plan for review and approval by Washington Department of Health and Ecology;• Prepare and submit biological assessment for ESA consultation (if needed);• Complete SEPA (if EIS needed, more refined benchmarks and milestones will be needed); and• Secure necessary permits, authorizations and approvals		
Resource Needs			
Costs	Period Beginning: TBD	Amount: TBD	
	Total: TBD		
Key Cost Drivers	Consulting services; staff time; application fees; modeling/data analysis and assessment; agency coordination meetings; public outreach and notification; field assessment and studies; project administration; publication/ printing costs; etc.		
Funding Source(s)	Water rates in affected service area; grants or low-interest loans from existing state & federal programs		
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; etc.		
Agreements, Ordinances, Permits & Approvals	Shoreline substantial development permit; critical areas permit; floodplain permit; grading and clearing permit; Section 404 permit (if needed); Section 401 Certification (if needed); water right permit; SEPA/NEPA compliance; and water system plan update and approval. Revisions to the Water Supply Plan may be required, which may also necessitate compliance with SEPA.		
Other			
Constraints and Uncertainties			
Constraint	Legal requirements and standards associated with individual permits may limit project alternatives and mitigation requirements; differences in permit requirements may lead to incompatible outcomes; if not factored into analyses, mitigation requirements may increase project costs above projected; permit review and approval timelines may delay project construction or limit construction periods; permit processing timelines will depend upon the quality and clarity of information provided for review.		
Operation and Maintenance			
Estimated Annual Cost	TBD		
Describe O&M Tasks	TBD		

Task 6	Project Construction	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Prepare final construction plans and specifications • Prepare RFP and hire contractor(s); • Initiate construction; • Project management and oversight; and • Project completion • Operation and Maintenance 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; contractor services; staff time; permitting and application fees; project oversight and administration; mitigation implementation; monitoring; permit fees; supplies and materials; project meetings; compliance inspections; etc.	
Funding Source(s)	Water rates and hookup charges in affected service area. Grants or low-interest loans from existing state & federal programs, etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; equipment rentals; supply and material handling and transport; etc	
Agreements, Ordinances, Permits & Approvals	Will vary depending on specific project. Examples of required permits include: shoreline substantial development permit; critical areas; floodplain; grading and clearing; ESA consultation; Section 404; Section 401 certification; hydraulic project approval; and SEPA compliance.	
Other		
Constraints and Uncertainties		
Constraint	Construction may be delayed if permit approvals are not secured sufficiently in advance; changes in supply and material costs may affect construction timelines and budgets; weather constraints affect project timing; permit requirements may affect construction methods, timing and design.	
Response	Close coordination with permitting agencies will be needed throughout alternatives review analysis and project design, engineering and construction phases.	
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	Once completed, the project will require ongoing monitoring, infrastructure maintenance and upgrades. Project plans and funding approaches should include provisions for long-term operation and maintenance.	
General Comments		

Appendix F
Grays-Elochoman and Cowlitz Watersheds
Stream Flow Action Schedules

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #916A AND #916B
STREAM GAUGES – MAINTAIN EXISTING AND INSTALL NEW GAUGES

Action Summary¹	
Lead Partner(s)	Ecology, Landowner
Oversight Responsibilities	Ecology
Coordinating Partner(s)	USGS, LCFRB, Counties
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #916: Maintain existing stream gauges. Install new gages at selected locations. Select exact sites; permit and construct gauges; O&M; data management (See Section 4.2).
	Subaction #916A: For purposes of improving stream flow management in the region, maintain existing stream gauges over the long term. Pg 4-10 Subaction #916B: Install permanent stream gauges on the Grays River, Elochoman River, several creeks tributary to the Cowlitz River, and the Coweeman River. Pgs 4-37, 4-41, 4-47, 4-52
Plan Background & Context	<p>In order to manage flows, streams must be monitored consistently. For purposes of the flow management program developed in this Plan, flow monitoring is needed to: provide basic data needed to assess current status and long-term trends in stream flow; provide basic data to determine how various components of the watershed contribute to flow (e.g. flow contributed by specific tributaries; gains and losses from ground water interactions, etc.); assess how short-term or long-term changes in watershed conditions affect flows (e.g. land use, precipitation trends); and, evaluate the effectiveness of specific management actions designed to improve the flow regime. While not the focus of this section, stream flow data is also very valuable in the context of water quality monitoring. For purposes of improving stream flow management in the region, it is important that existing stream flow gauges be maintained over the long-term and that additional permanent gauges be installed (see Section 5.4.2). The Planning Unit has established criteria for focusing funding resources, as well as priorities for stream gauge installation and maintenance, on a watershed by watershed basis. The Planning Unit addressed particular attention to the Grays River, Elochoman River, Lower Cowlitz Tributaries and Coweeman River subbasins during the planning process. This is because they were used as “pilot” subbasins to develop the overall program for stream flow management. Pgs 4-5, 4-10, 4-11, 4-47, 4-48, 4-52, and 4-57</p>

¹ Note: Page and section references in this document refer to the adopted “Grays-Elochoman and Cowlitz Watershed Management Plan” (LCFRB, 2006)

Relationship to Other Actions and Coordination Needs	In general, this Action is intended to provide for collection of instream flow data that is necessary to make management decisions under the Plan. This Action has a direct relationship to all water supply and stream flow Actions outlined in the Plan, and is necessary to provide for adaptive management as described in Section 8. This Action would also provide data and information necessary for implementation of a target flow monitoring management program as called for in Action #919.
Expected Outcomes	Installation and maintenance of stream flow gauges as called for and prioritized in the Plan; and to provide necessary information and data to support management decisions relating to protection of instream flows and water supply development, including decisions on water right permit applications.
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policies WSP-1 and WSP-2: Water Supply Policies and Recommendations Policies SFP-1 through SFP-13: Stream Flow Policies and Recommendations
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Medium
Identify Tasks that have not been Fully Funded	TBD
Supporting Tasks	
Task 1	Gauge Installation, Operation, Maintenance and Data Reporting
Schedule	
Start Date	TBD
Planned Completion	TBD
Actual Completion	TBD
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Identify gauges for installation based on Plan priorities and recommendations • Identify funding sources for installation, operation and maintenance • Secure funds • Install gauge(s) • Operate and maintain gauges • Periodically report data to decisions-makers, land-use managers, the Planning Unit and County legislative authorities to <ul style="list-style-type: none"> ○ provide basic data needed to assess current status and long-term trends in stream flow ○ provide basic data to determine how various components of the watershed contribute to flow (e.g. flow contributed by specific tributaries, gains and losses from ground water interactions, etc.)

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

	<ul style="list-style-type: none">○ assess how short-term or long-term changes in watershed conditions affect flows (e.g. land use, precipitation trends)○ evaluate the effectiveness of specific management actions designed to improve the flow regime (including target flow programs)○ provide a basis for management decisions, including long-term adaptive management	
Resource Needs		
Costs	Period Beginning: TBD	Amount: Continuous gauge installation cost - \$6,400 to \$11,000 per gauge; Yearly operation and maintenance per gauge - \$8000 to \$9000.
	Total: TBD	
Key Cost Drivers	Infrastructure/capital acquisitions costs ; gauge equipment (varies by gauge type – housing, radio, antenna, cable, lighting protector, solar panel, air dryer, instrument panel, housing, etc.); installation costs; maintenance costs; monitoring costs; staff time; reporting; etc.	
Funding Source(s)	Legislative appropriations (Ecology budget); Congressional appropriations (USGS budget); Counties; Public Water Systems	
Logistical Needs	Property access; travel; communications, computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	Property access agreements or permits may be needed; permits may be needed for gauge installation and maintenance activities; data sharing agreements may be needed; etc.	
Other		
Constraints and Uncertainties		
Coordination with decisions-makers, land-use managers, the Planning Unit and County legislative authorities will be needed to ensure data access and facilitate management decisions.		
Operation and Maintenance		
Estimated Annual Cost	Not Applicable	
Describe O&M Tasks	Not Applicable	

General Comments	
<p>Since the Watershed Plan has been adopted, Ecology has installed gauges in several high priority watersheds identified in the Watershed Plan. Current high priority needs include gauge installation in Olequa Creek and the Elochoman River.</p> <p>An application for 2009-11 Phase 4 implementation funding to complete gauge installation in Olequa Creek and the Elochoman River was submitted by the Planning Unit in May 2008.</p>	

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION 917, SUBACTIONS
#917A, #917B AND #917C, #909C-1 AND #909C-2
DEPARTMENT OF ECOLOGY - RULE ADOPTION, ESTABLISH RESERVATIONS,
CLOSURES, AND TIDAL REACHES

Action Summary¹	
Lead Partner(s)	Department of Ecology
Oversight Responsibilities	Department of Ecology
Coordinating Partner(s)	WRIA 25/26 Planning Unit
Action Type	Requirement <input checked="" type="checkbox"/> Recommendation <input type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing <input type="checkbox"/> Revised
Table Description	Action #917: Adopt closures and/or minimum instream flows in State Rule (See Section 4.4.1).
	<p>Subaction #909C-1 & #917A: Reserve a block of water for future public water supply that would not be subject to the closures and/or instream flows establish by rules for WRIAs 25 and 26. (Tasks would include rule writing and adoption, and coordination with the Planning Unit). (Note: same action as above under "Public Water Systems develop new or expanded supplies") Pg 3-12</p> <p>Subaction #917B: Adopt State Rules (WACs) under the Instream Resources Protection Program to restrict issuance of new water rights in WRIAs 25 and 26. In all affected streams reaches, establish a closure, but with certain exceptions as noted in the Plan. Pgs 4-18, 4-19</p> <p>Subaction #917C: Establish a numeric instream flow that provides water for beneficial uses, subject to flow conditions, in the Cowlitz River downstream of Mayfield Dam. Pg 4-28</p> <p>Subaction #909C-2: Specify in rule the locations of tidally-influenced stream reaches (Appendix I, Table I-3) in WRIA 25 and 26 where surface water source limitations, such as stream closures administered by Ecology and low flow conditions on new water rights, should not apply. Pg. 3-14</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Plan Background & Context	<p>In order to satisfy the goals associated with the establishment of closures and/or instream flows, and the goals associated with providing a secure source of water for future public water supply, it is recommended that in each basin a block of water be reserved for future uses that would not be subject to the closures and/or instream flows established by rules for WRIAs 25 and 26. Pg 3-12.</p> <p>The Department of Ecology should adopt State Rules (WACs) under its Instream Resources Protection Program to restrict issuance of new water rights in WRIAs 25 and 26. In all affected streams reaches a closure should be established, but with certain exceptions as indicated below. Existing water rights shall not be affected by this policy. For each stream that flows into the Columbia River, the zone where water levels are substantially affected by tidal influence and backwater from the Columbia River shall not be closed to issuance of new water rights. The location of the lower most extent of the closure is identified in this Plan. The rules adopted shall not prevent issuance of water rights for selected purposes and conditions. Pg 4-6</p> <p>The Planning Unit recommends that minimum instream flows be adopted as an additional element of the State Rules in selected basins where sufficient data is available. The minimum instream flows will be used in processing applications for changes or transfers of existing water rights. However, the blocks of water reserved for domestic, municipal, and other beneficial uses (see above) shall not be subject to minimum instream flow conditions. Pg 4-6</p> <p>The Planning Unit understands that the FERC license conditions take into account flows for anadromous fish and other wildlife species. While hydropower regulation of flows in the Cowlitz River is protective of the needs of fish, they do not account for additional use downstream of the Mayfield Dam. Therefore, the Planning Unit recommends additional protection for the Cowlitz River mainstem in the form of a numeric instream flow that provides water for beneficial uses subject to flow conditions. Pg 4-28</p> <p>RCW 90.82.080 requires the Department of Ecology undertake rule making for instream flow components of the plan.</p>
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Relationship to Other Actions and Coordination Needs	Adoption of a rule that adequately and thoroughly addresses plan needs is a primary step that must be undertaken before the plan can be effectively implemented. This action is therefore related to all other plan actions.
Expected Outcomes	Adoption of state rules that adequately address plan goals, objectives, strategies, policies, actions and related processes. This would include but not be limited to the following elements: <ul style="list-style-type: none"> • Instream closures • Tidal reaches • Reservations • Minimum instream flows (including Cowlitz River) • Section 3.3.1 • Mitigation • Other procedural and substantive elements
Is the Action Fully Addressed by the Tasks Below?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy WSP-1: Reservations for Water Supply (Pg 3-12) Policy WSP-1: Tidally influenced reaches (Pg 3-14) Policy WSP-1: Water Supply (Pg 3-10) Policy SFP-2: Restrictions on New Water Rights (Pg 4-18 and 4-19) Policy SFP-8: Cowlitz River and FERC License (Pg 4-28)
Is the Activity Fully Funded?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Financial/Economic Costs ²	Medium
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Planning Phase	
Schedule		
Start Date	January 2004	
Planned Completion	October 2004	
Actual Completion	October 2004	
Benchmarks/ Milestones	<ul style="list-style-type: none">File CR-101 (Pre-proposal Statement of Inquiry)	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; public costs; etc.	
Funding Source(s)	State General Funds (Ecology), Phase 4 funds watershed planning and watershed council funds (Planning Unit and LCFRB involvement).	
Logistical Needs	Close coordination between Ecology, the LCFRB and the Planning Unit will be necessary.	
Agreements, Ordinances, Permits & Approvals	Formal rule making procedures and requirements relating to the above tasks must be adhered to.	
Other		
Constraints and Uncertainties		
NA		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 2	Draft/Proposal Phase	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Develop Rule Scope• Consult with tribes, governments and interested parties (Ongoing)• Develop Draft rule language addressing appropriate plan elements, including but not limited to the following<ul style="list-style-type: none">◦ Instream closures◦ Tidal reaches◦ Reservations◦ Minimum instream flows (including Cowlitz River per Policy SFP-8)◦ Section 3.3.1◦ Mitigation◦ Other procedural and substantive elements;• Mail out open house/workshop notices and place newspaper adds• Lewis, Skamania, Wahkiakum and Cowlitz workshops (with Planning Unit)• Complete associated documents<ul style="list-style-type: none">◦ Final SEPA document◦ Preliminary cost benefit and least burdensome alternative analysis◦ Final small business economic impact statement• Planning Unit review of associated documents• Final draft rule language (six weeks before CR-102 filed)• File CR-102 (proposed rule) and associated documents (six weeks after final draft language)<ul style="list-style-type: none">◦ SEPA document◦ Preliminary cost benefit and least burdensome alternative analysis◦ Final small business economic impact statement◦ Maximum net benefit analysis• Publish CR-102	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; alternatives and maximum net benefit analyses; public hearings; publication costs; etc.	
Funding Source(s)	State General Funds (Ecology); Phase 4 funds watershed planning and watershed council funds (Planning Unit and LCFRB involvement); etc.	
Logistical Needs	Close coordination between Ecology, the LCFRB and the Planning Unit will be necessary.	
Agreements, Ordinances, Permits & Approvals	Formal rule making procedures and requirements relating to the above tasks must be adhered to.	

Constraints and Uncertainties	
The timing and schedule for rule writing will depend upon availability of Ecology staff, funding and resources.	
Operation and Maintenance	
Estimated Annual Cost	TBD
Describe O&M Tasks	TBD

Task 3	Public Comment Phase	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">Public Hearings (Lewis, Wahkiakum, Skamania and Cowlitz Counties)Close of comment period (at least 7 days after last hearing)	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; development of outreach materials; publication costs; travel; hearing costs; etc.	
Funding Source(s)	State General Funds (Ecology); Phase 4 funds watershed planning and watershed council funds (Planning Unit and LCFRB involvement); etc	
Logistical Needs	Close coordination between Ecology, the LCFRB and the Planning Unit will be necessary.	
Agreements, Ordinances, Permits & Approvals	Formal rule making procedures and requirements relating to the above tasks must be adhered to.	
Constraints and Uncertainties		
Constraint	The timing and schedule for rule writing will depend upon availability of Ecology staff, funding and resources.	
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 4	Adoption Phase	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Respond to comments<ul style="list-style-type: none">◦ Prepare concise explanatory statement and responsiveness summary◦ Modify rule language if necessary◦ Revise SEPA or economic analyses, as necessary• Modify Rule Language if necessary• Complete associated documents<ul style="list-style-type: none">◦ Rule implementation plan◦ Rule-making criteria documentation◦ Cost benefit and least burdensome alternative analysis◦ Concise explanatory statement and responsiveness summary and• Adopt Rule – File CR-103	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; publication costs; travel; hearing costs; etc.	
Funding Source(s)	State General Funds (Ecology); Phase 4 funds watershed planning and watershed council funds (Planning Unit and LCFRB involvement); etc.	
Logistical Needs	Close coordination between Ecology, the LCFRB and the Planning Unit will be necessary.	
Agreements, Ordinances, Permits & Approvals	Formal rule making procedures and requirements relating to the above tasks must be adhered to.	
Other	TBD	
Constraints and Uncertainties		
Constraint	The timing and schedule for rule adoption will depend upon availability of Ecology staff, funding and resources.	
Operation and Maintenance		
Est. Annual Cost	TBD	
Describe O&M Tasks	TBD	

General Comments	
<p>The plan addresses WRIA 25 and WRIA 26 together, and does not make distinctions between these two areas from a regulatory and implementation perspective. Many actions under the plan will affect both WRIs, and several entities have jurisdiction within each area. It will therefore be important to consolidate and integrate the rule writing process for WRIA 25/26.</p>	

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: #918
SEE WATER SUPPLY ACTIONS**

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #919 AND 919A
ESTABLISH TARGET FLOW MONITORING AND MANAGEMENT PROGRAM

Action Summary¹	
Lead Partner(s)	Planning Unit, LCFRB
Oversight Responsibilities	Ecology
Coordinating Partner(s)	Ecology, WDFW, Purveyors, Counties, Cities, USGS
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #919: Establish target flow monitoring and management program (See Section 4.3).
	Subaction #919A: Establish target flows for Olequa Creek and the Coweeman River, and develop and implement a target flow monitoring program for these two watersheds. Target flows should address both low flows and peak flows. The suite of flow management techniques discussed for these streams should be designed with the goal of protecting these flows from degradation, and if possible improving the flow regime. Pg 4-11, Appendices, G-3, G-4, G-7, G-8
Plan Background & Context	One way in which the effectiveness of stream flow management can be quantified and monitored is through the establishment of "target flows." As used in the watershed plan, the term "target flows" means a realistic flow regime that could be achieved in most years by following selected management techniques over a long period of time (e.g. 10 years or more). The "flow regime" is defined by a set of statistics that define both high and low flows, durations, and their frequency of occurrence over a period of years. These statistics are readily developed from flow records at stream-gauging sites. An appropriate flow regime for a specific stream can be determined by evaluating historical flow conditions, current and projected water uses, and fish habitat needs. The Watershed Plan calls for development of a target flow program for both the Coweeman River and Olequa Creek. Technical information to form the basis for development of the target flow program in these two rivers is described in Appendix G and Sections 4.7.6 and 4.7.7. Target flows have not been developed for other streams in the region at this time, but could be developed in the future. A target flow program is intended to be implemented within the context of an adaptive management program, as described in Section 7. Pgs 4-11 through 4-12, 4-44 through 4-52 Appendix G, Pg 7-13 (Table 7-3)

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions and Coordination Needs	Implementation of a target flow program will provide a way to quantify and monitor the effectiveness of stream flow management actions under the plan, and will provide a basis for adaptive management. This Action will help guide decisions under source substitution Action #911, and assess the effectiveness of conservation efforts under Actions #912, #913, #915, and #927. This Action will also provide long term data needed to assess the effectiveness Actions relating to broader land use initiatives, as described in Actions #921, #923, and #925. The Action will also provide a means to assess short-term responses to enforcement actions, as called for in Action #920. Establishing and maintaining stream flow gauges per action #916 is intended to provide the infrastructure necessary to complete this action.
Expected Outcomes	Development and Implementation of a target flow program for the Coweeman River and Olequa Creek.
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy WSP-1: Access to Water Supplies (Pg 3-9) Policy WSP-2: Stream Flow Protection in Developing Supplies (Pg 3-9 and 3-10) Policy WSP-2: Procedure for Evaluating Existing Supplies (Pg 3-13) Policy WSP-2: Water Supply- New or Industrial Supplies (Pg 3-13) Policy WSP-2: Cowlitz River Resource (Pg 3-10) Policy WSP-2: Columbia River Resource (Pg 3-9) Policy WSP-2: Industrial Water Supply (Pg 3-23) Policy WSP-2: Agricultural Water Supply (Pg 3-24) Policy SFP-1: Flow Monitoring (Pg 4-10) Policy SFP-1: Stream Gauges – Various Rivers (Pg 4-37, 4-41, 4-47, 4-52) Policy SFP-1: Target Flows – Olequa Creek and Coweeman River (Pg G-3-4, G-7-8) Policy SFP-3: Water Conservation (Pg 4-24) Policy SFP-5: Source Substitution (Pg 4-26) Policy SFP-5: Source Substitution-Coweeman River (Pg 4-46) Policy SFP-7: Enforcement – Against Unauthorized Uses (Pg 4-27, 4-28) Policy SFP-9: Forest Practices (Pg 4-29) Policy SFP-10: Stormwater Management (Pg 4-31) Policy SFP-12: Floodplain Management (Pg 4-32) Policy SFP-13: Wetlands Management (Pg 4-33)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Medium
Identify Tasks that have not been Fully Funded	All

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Pre-project Planning – Planning Unit/LCFRB	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Coordinate with Ecology • Identify funding sources • Secure funds • Prepare RFP/hire contractor • Coordinate with existing service providers and affected jurisdictions • Possible MOU/MOA between jurisdictions 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: Estimated \$3000
	Total: \$3000	
Key Cost Drivers	Staff time; Planning Unit time; coordination meetings; public outreach; advertising; project oversight and administration; etc.	
Funding Source(s)	Potential sources include: grants from existing state & federal programs; legislative appropriations; phase 4 implementation grants; other grants from Ecology; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of RFP and grant applications by Planning Unit may be needed; etc.	
Other		
Constraints and Uncertainties		
Availability of funding may limit ability to complete Task 1; the level of coordination and cooperation between entities may affect project success and outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 2		Develop Detailed Implementation Program and Operational Guidelines – Planning Unit/LCFRB/Consultant	
Schedule			
Start Date	TBD		
Planned Completion	TBD		
Actual Completion	TBD		
Benchmarks/ Milestones	Development of a detailed implementation program and operational guidelines that address the following <ul style="list-style-type: none">• Location and frequency (e.g. daily, monthly, yearly, etc.) of sampling based on existing and proposed gauging stations and Plan guidance• Sampling protocols, procedures and metrics• Data transfer and storage protocols• Data assessment procedures• Effectiveness monitoring and adaptive management procedures and benchmarks• Reporting format, outline and templates• A prioritized plan for addressing logistical and funding gaps related to monitoring, operation and maintenance• Identification of responsible entities, and completion of agreements for monitoring, operation and maintenance		
Resource Needs			
Costs	Period Beginning: TBD	Amount: Estimated \$25,000	
	Total: \$25,000		
Key Cost Drivers	Consulting services; staff time; Planning Unit time; coordination meetings; public outreach; advertising; project oversight and administration; etc.		
Funding Source(s)	See Task 1		
Logistical Needs	See Task 1		
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles and responsibilities for implementation and maintenance, and coordination functions.		
Other	TBD		
Constraints and Uncertainties			
Availability of funding may limit ability to complete task; the level of coordination and cooperation between entities may affect project success and outcomes; etc.			
Operation and Maintenance			
Estimated Annual Cost	TBD		
Describe O&M Tasks	TBD		

Supporting Tasks		
Task 3	Integrate Target Flow Program into LCFRB's Research, Monitoring and Adaptive Management (RM&E) Program	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">Integrate Target Flow Program elements from Task 2 into appropriate Chapters and Sections of LCFRB's RM&E Program	
Resource Needs		
Costs	Period Beginning: TBD	Amount: Estimated \$3000
	Total: Estimated \$3000	
Key Cost Drivers	Consulting services; staff time; Planning Unit time; RM&E committee time; publication costs; etc	
Funding Source(s)	See Task 1	
Logistical Needs	See Task 1	
Agreements, Ordinances, Permits & Approvals	Approval of deliverables by Planning Unit, LCFRB, and RM&E workgroup will be needed.	
Constraints and Uncertainties		
See Task 1		
Operation and Maintenance		
Est. Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 4	Target Flow Program Implementation	
Schedule		
Start Date	TBD	
Planned Completion	Ongoing	
Actual Completion	Ongoing	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Installation of gauges in Olequa Creek and Coweeman River (See Action 916)• Stream flow monitoring and data collection• Data analysis and reporting• Implementation of adaptive management procedures• Operation and maintenance	
Resource Needs		
Costs	Period Beginning: TBD	Amount: Continuous gauge installation cost - \$6,400 to \$11,000 per gauge; Yearly operation and maintenance per gauge - \$8000 to \$9000.
	Total: TBD	

Key Cost Drivers	Stream gauge operation and maintenance costs; data analysis and reporting costs; adaptive management; etc.
Funding Source(s)	Potential sources include: grants from existing state & federal programs; legislative appropriations; phase 4 implementation grants; other grants from Ecology; state general fund (Ecology); federal general fund (e.g., USGS); etc.
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; gage equipment (varies by gage type – housing, radio, antenna, cable, lighting protector, solar panel, air dryer, instrument panel, housing, etc.) gage access and maintenance; etc.
Agreements, Ordinances, Permits & Approvals	Agreements between implementation partners (e.g., Ecology, USGS, Planning Unit, LCFRB, etc.) may be needed; property access agreements may be needed for gauge site access; permits may be needed for gauge installation and maintenance; data sharing agreements may be needed; etc.
Other	TBD
Constraints and Uncertainties	
Constraint	Funding will be needed for ongoing stream flow monitoring, data analysis and reporting, and implementation of adaptive management procedures; close coordination will be needed between implementing partners; adaptive management will involve coordination with multiple state, federal and local entities.
Operation and Maintenance	
Estimated Annual Cost	Yearly operation and maintenance per gage: \$8000 to 9000 per year.
Describe O&M Tasks	Gage and site maintenance; stream flow monitoring and data collection; data analysis and reporting; implementation of adaptive management procedures

General Comments

An application for 2009-11 Phase four implementation funding to complete this action was submitted by the Planning Unit in May 2008.

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #920 AND SUBACTION #920A
SURVEYS TO IDENTIFY UNAUTHORIZED USES
AND TAKE ENFORCEMENT ACTIONS**

Action Summary ¹	
Lead Partner(s)	Ecology
Oversight Responsibilities	Ecology
Coordinating Partner(s)	Planning Unit, Purveyors, USGS
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input checked="" type="checkbox"/> Revised
Table Description	Action #920: Initial surveys in selected subbasins to identify unauthorized uses and take enforcement actions. Follow-up in other basins if warranted (See Section 4.4.6).
	Subaction #920A: Conduct or support initial surveys in selected subbasins to determine whether unauthorized water uses are occurring on streams deemed critical to salmon recovery within WRIAs 25 and 26. If these surveys identify extensive unauthorized uses, they should be expanded to additional subbasins and carried out on a regular, periodic basis (e.g. once every five years). Pg 4-27, 4-28 Where unauthorized uses are identified based upon initial surveys, take enforcement actions to eliminate these uses. Pg 4-27, 4-28
Plan Background & Context	Aside from the legal, appropriated use of surface and ground waters, there is a potential for illegal diversions of surface water and withdrawals of ground water to occur. Where unauthorized uses are occurring involving either surface waters and/or ground waters in continuity with surface streams, enforcement actions against unauthorized uses can potentially help to improve low flows. Ecology is the agency responsible for enforcement actions. The quantity of unauthorized water used within the WRIAs 25 and 26 watersheds is not known. However, in the more populated areas, some unauthorized uses are expected to occur. Therefore, the Planning Unit has adopted the above policies and actions regarding enforcement against unauthorized water use as a stream flow management technique in WRIAs 25 and 26. The two highest priority watersheds identified for implementation of instream flows are the Mill/Abernathy/Germany Creek and Grays River Subbasin. In addition, the Watershed Plan calls for a Target Flow Monitoring Program (Action 919) focusing on Olequa Creek and the Coweeman River. Pgs 4-27 and 4-34, Appendix G

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions and Coordination Needs	These Actions are intended to work in coordination other Actions designed to improve instream flows, including the following: source substitution actions (#911); conservation actions (#912, #913, #915, and #927); limitations on issuance of new water rights (#917); select instream flow actions (#918); and a variety of actions relating to broader land use considerations (e.g., #921, #923, #925. Establishing and maintaining stream flow gauges under Action #916 and implementation of a target stream flow program per Action #919 will provide data and information necessary to evaluate the short and long-term effectiveness of enforcement actions.
Expected Outcomes	Development and implementation of a program to survey and effectively enforce unauthorized water uses in two focal watersheds. (Note: Focal watersheds to be determined through consultation with Planning Unit)
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy SFP-1: Flow Monitoring (Pg 4-10) Policy SFP-1: Stream Gages – Various Rivers (Pg 4-37, 4-41, 4-47, and 4-52) Policy SFP-1: Target Flows – Olequa Creek and Coweeman River (Pg G-3, G-4, G-7, G-8) Policy SFP-7: Enforcement – Against Unauthorized Uses (Pg 4-27, 4-28)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Low to Medium
Identify Tasks that have not been Fully Funded	All

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Hire Compliance Position	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">Consult with Planning Unit to determine:<ul style="list-style-type: none">Duration of project (e.g., pilot vs permanent);Preferred approach (Watermaster or Ecology compliance/enforcement position); andGeographical scope (single vs multi-WRIA, and watershed priorities)Develop position description outlining duties and classification and public noticeConduct interviews, hire and train position	
Resource Needs		
Costs	Period Beginning: TBD	Amount: \$4,000
	Total: \$4,000	
Key Cost Drivers	Staff time; advertising/publication costs; Planning Unit consultation	
Funding Source(s)	Legislative appropriations (Ecology budget & staffing); state general fund; purveyor contributions (potential); phase 4 grants; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; training; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of budget requests may be needed; etc.	
Other	TBD	
Constraints and Uncertainties		
Availability of funding may limit ability to hire compliance position		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Supporting Tasks		
Task 2	Develop Detailed Enforcement Plan	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Compile existing information on permitted users in focus area(s)• Coordinate with Planning Unit to:<ul style="list-style-type: none">○ Develop criteria and process for watershed/reach prioritization (e.g., using Watershed Plans, Recovery Plans, instream flow data, ground/surface water continuity data, population information, etc);○ Determine investigation period (e.g., June through October); and○ Develop prioritized plan for field investigations	
Resource Needs		
Costs	Period Beginning: TBD	Amount: \$4,000
	Total \$4,000	
Key Cost Drivers	Staff time; advertising/publication costs; Planning Unit consultation, etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; computers; supplies/materials; vehicle; travel; etc.	
Agreements, Ordinances, Permits & Approvals	Agreements between Ecology, Planning Unit, and other participating entities (e.g., purveyors, local compliance staff, etc.) may be needed to clarify roles and responsibilities.	
Other	TBD	
Constraints and Uncertainties		
Availability of funding may limit ability to prepare detailed enforcement plan; close coordination between Ecology, Planning Unit and other participating entities will be needed.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 3		Project Implementation	
Schedule			
Start Date	TBD		
Planned Completion	TBD		
Actual Completion	TBD		
Benchmarks/ Milestones	<ul style="list-style-type: none">• Conduct field surveys and investigations for unauthorized uses based on plan developed under Task 1• Coordinate with legal counsel as needed• Initiate formal enforcement actions as needed• Prepare enforcement reports and supporting documentation• Coordinate with Planning Unit, USGS, and Ecology staff to determine project effectiveness (based on gauge and other data, comparison across watersheds, etc)• Prepare final project report with recommendations for future work• Outreach and education		
Resource Needs			
Costs	Period Beginning: TBD	Amount: Estimated \$8,500 per month for salaries, benefits, and travel	
	Total: Depends on scope and duration of project		
Key Cost Drivers	Salaries; benefits; travel; legal consultation; etc.		
Funding Source(s)	See Task 1		
Logistical Needs	Computer; software; vehicle; lodging; meeting rooms; etc.		
Agreements, Ordinances, Permits & Approvals	Agreements between Ecology and other participating entities (e.g., purveyors, local compliance staff, etc.) may be needed to clarify roles and responsibilities.		
Other	TBD		
Constraints and Uncertainties			
Constraint	Availability of funding may limit ability to complete enforcement work; close coordination between field compliance position, Ecology legal counsel, and other participating entities will be needed. Support from legal staff will be key to project success.		
Operation and Maintenance			
Estimated Annual Cost	Depends on scope and duration of project.		
Describe O&M Tasks	TBD		
General Comments			
Total estimated cost for a two-year pilot project in two subbasins is approximately \$57,500 (.5 FTE).			

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #921, SUBACTIONS #921A,
#921B, #921C AND #921D
EFFECTS OF FOREST PRACTICES ON STREAM FLOW**

Action Summary¹	
Lead Partner(s)	DNR, USFS, Private Forest Landowners
Oversight Responsibilities	DNR, USFS
Coordinating Partner(s)	LCFRB, Ecology, WDFW
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input checked="" type="checkbox"/> Revised
Table Description	Action #921 (#904): Consider and address effects of forest practices on stream flow. Monitor effectiveness of F&F Rules and NW Forest Plan. Report to public periodically (See Section 4.5.1).
	<p>Subaction #921A: Consider effects of forest management practices on stream flow and other fish habitat factors, in making forest management decisions. The Planning Unit anticipates that existing programs under the State's Forests and Fish regulations, the state forestland's Habitat Conservation Plan and the federal government's Northwest Forest Plan will provide the regulatory framework needed in this regard. Pg 4-29</p> <p>Subaction #921B: Monitor the effectiveness of these programs and periodically provide public documentation of their effectiveness in protecting fish habitat in WRIAs 25 and 26. Pg 4-29</p> <p>Subaction #921C: Integrate monitoring of forest practices programs into the LCFRB Research, Monitoring, and Evaluation (RME) program. Pg. 4-29</p> <p>Subaction #921D: Provide technical assistance to small forest landowners to identify water conservation opportunities targeting select locations where significant benefits to streams would result, and identify funding sources for implementation. Pg. 4-24</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

<p>Plan Background & Context</p>	<p>As noted in the Watershed Plan, 77 and 67 percent of the lands within WRIAs 25 and 26, respectively, are forested. These forested areas are typically found in the middle and upper reaches of the various subbasins. A majority of this forested land is owned and managed by the U.S. Forest Service (USFS) and Washington State Department of Natural Resources (DNR). Private companies also own and manage significant acreages in some areas. Given the extent of forested lands, forest practices have substantial potential to affect the magnitude and timing of flows. Pg 4-28</p> <p>Moreover, the Forests and Fish Rules adopted by Washington State and incorporated in the Forest Practices Act will have a substantial impact on forest management practices. On federal lands, the Northwest Forest Plan has also altered trends on forest management practices. The Watershed Planning Unit has limited ability to influence forest practices. Local regulations are not allowed to conflict with the Forest Practices Act, which regulates private and State forest lands². This limitation also includes watershed plans as described in RCW 90.82.120(3). Recognizing the jurisdiction over forest management rests with USFS, DNR and private landowners, the Planning Unit has adopted the above policy and actions relating to forest practices as a tool for stream flow management. Pg 4-28 and Pg 4-29</p> <p>Private landowners, State DNR and USFS should consider effects of forest management practices on stream flow and other fish habitat factors, in making forest management decisions. The Planning Unit anticipates that existing programs under the State's Forests and Fish regulations, the state forest land's Habitat Conservation Plan, and the federal government's Northwest Forest Plan will provide the regulatory framework needed in this regard. The State and federal governments should monitor the effectiveness of these programs and periodically provide public documentation of their effectiveness in protecting fish habitat, including flow conditions, in WRIAs 25 and 26. Pg 4-29</p>
<p>Relationship to Other Actions</p> <p>and</p> <p>Coordination Needs</p>	<p>These Actions are designed to ensure that the effects of changes in the watersheds' forested areas are to be considered as part of the overall context for the target flows discussed in Action #919. These Actions are intended to work in coordination with other Actions designed to improve instream flows, including the following: source substitution actions (#911); conservation actions (#912, #913, #915, and #927); limitations on issuance of new water rights (#917); select instream flow actions (#918); and a variety of actions relating to broader land use considerations (e.g., #923, #925). Establishing and maintaining stream flow gauges under Action #916 and implementation of a target stream flow program per Action #919 will provide data and information necessary to evaluate the short and long-term effectiveness of State and Federal management actions that affect instream flows.</p>

² The Forest and Fish Rules are incorporated in the Forest Practices Act.

Expected Outcomes	<p>Integration of forest practices monitoring programs into the LCFRB Research, Monitoring and Evaluation Program.</p> <p>USFS, State DNR and private landowner consideration of the effects of forest management practices on stream flow and other fish habitat factors in making forest management decisions under the State's Forest and Fish regulations and Habitat Conservation Plan, and the Federal Forest Plan.</p> <p>Implementation of an effectiveness monitoring program by State DNR and USFS and presentation of results to the public, Planning Unit and LCFRB, relating to protection of fish habitat and flow conditions in WRIAs 25 and 26.</p>
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	<p>Policy SFP-1: Flow Monitoring (Pg 4-10)</p> <p>Policy SFP-1: Stream Gages – Various Rivers (Pg 4-37, 4-41, 4-47 and 4-52)</p> <p>Policy SFP-1: Target Flows – Olequa Creek and Coweeman River (Pg G-3, G4, G-7, G-8)</p> <p>Policy SFP-2: Restrictions on New Water Rights (Pg 4-18, 4-19)</p> <p>Policy SFP-3: Water Conservation (Pg 4-24)</p> <p>Policy SFP-9: Forest Practices (Pg 4-29)</p> <p>Policy SFP-10: Stormwater Management (Pg 4-31)</p> <p>Policy SFP-10: Development Practices & Stormwater Management-Coweeman River (Pg 4-45)</p> <p>Policy SFP-12: Floodplain Management</p> <p>Policy SFP-13: Wetlands Management (Pg 4-33)</p> <p>Policy SFP-13: Wetlands-Lower Cowlitz Tributaries (Pg 4-51)</p> <p>Policy SFP-13: Wetlands-Mainstem Cowlitz River (Pg 4-51)</p> <p>Policy SFP-13: Floodplain and wetlands management-Coweeman River (Pg 4-46)</p> <p>Policy SFP-13: Floodplain and wetlands, Grays River (Pg 4-36, 4-40)</p>
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ³	Low to Medium
Identify Tasks that have not been Fully Funded	TBD

³ Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Integrate State DNR and USFS Forest Practices Monitoring Programs into the LCFRB Research, Monitoring and Evaluation (RM&E) Program	
Schedule		
Start Date	2006	
Planned Completion	June 2008	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">Participate in the LCFRB RM&E Workgroup and assist with development of biological, habitat and effectiveness monitoring program elements (in process)Coordinate monitoring efforts to improve sampling and data collection efficiency and compatibility, to the extent feasibleShare data and information with the LCFRB, Planning Unit and other entities conducting watershed monitoring under the WRIA 25/26 Plan	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; data and information distribution costs; publication costs; travel; etc.	
Funding Source(s)	State and federal general fund; legislative appropriations; congressional appropriations; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	Data sharing and access agreements may be needed.	
Other	TBD	
Constraints and Uncertainties		
Staff, funding or policy limitations may affect agency participation in LCFRB’s RM&E program development and implementation; incompatibility between data collection protocols and analyses may limit ability to interpret results and make conclusions; differences in geographical scope and scale monitoring efforts may limit applicability to WRIA 25/26, as well as utility of resulting data and information.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 2	Consider Effects of Forest Management Practices on Stream Flow and other Fish Habitat Factors in Making Decisions under the State’s Forest and Fish Rules, DNR’s Habitat Conservation Plan, and the Northwest Forest Plan	
Schedule		
Start Date	Ongoing	
Planned Completion	Ongoing	
Actual Completion	Ongoing	
Benchmarks/ Milestones	<ul style="list-style-type: none">LCFRB to provide State DNR and USFS with results of instream flow and target flow monitoring efforts to assist with management decisions relating to instream flows and other habitat factors in WRIA 25/26 <i>(Needs more discussion, report frequency to be determined upon completion of RM&E Program)</i>State DNR and USFS to incorporate instream flow considerations into management decisions, including timber harvest decisions, under the Forest and Fish Rules, Habitat Conservation Plan, and Northwest Forest Plan; and document results <i>(appropriate benchmarks/milestones need discussion)</i>	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; data and information distribution costs; publication costs; permit review and processing; planning; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; training; etc.	
Agreements, Ordinances, Permits & Approvals	Data sharing and access agreements may be needed.	
Other		
Constraints and Uncertainties		
See Task 1		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 3	Provide Public Documentation of the Effectiveness of State Forest and Fish Rules, DNR Habitat Conservation Plan, and Northwest Forest Plan in Protecting Fish Habitat, Including Flow Conditions, in WRIAs 25 and 26	
Schedule		
Start Date	Ongoing	
Planned Completion	Ongoing <i>(need to consult with DNR and USFS on existing reporting protocols to determine frequency, format, etc)</i>	
Actual Completion	Ongoing	
Benchmarks/ Milestones	<ul style="list-style-type: none">USFS and DNR to provide LCFRB, Planning Unit and public (via meetings and reports) with the results of effectiveness monitoring related to protection of fish habitat, including flow conditions, in WRIAs 25 and 26.	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; data and information distribution costs; publication costs; travel; etc.	
Funding Source(s)	State and federal general fund; legislative appropriations; congressional appropriations; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	Data sharing and access agreements may be needed.	
Other	TBD	
Constraints and Uncertainties		
Constraint	See Task 1	
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

General Comments

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #922 AND SUBACTIONS
#922A, #922B, AND #922C
PROTECTION OF FLOODPLAIN FUNCTIONS

Action Summary¹	
Lead Partner(s)	Counties, Cities, State Agencies with Land Management Responsibility (to include Wahkiakum County as described below)
Oversight Responsibilities	Counties, Cities, State Agencies with Land Management Responsibility
Coordinating Partner(s)	State Agencies, Town of Cathlamet
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input checked="" type="checkbox"/> Revised
Table Description	Action #922: Within authorities, protect floodplains from modifications that would impair hydrologic functions or habitat (See Section 4.5.3).
	<p>Subaction #922A: Within authorities, local jurisdictions and state agencies with land management responsibilities should protect existing floodplains from modifications that would impair their hydrologic functions and habitat value. Pgs 4-9 and 4-32</p> <p>Subaction #922B: Within authorities, apply land-use management authorities to protect existing floodplains and wetlands in the Grays River and Elochoman River subbasins. Pgs 4-36 and 4-40</p> <p>Subaction #922C: Partner with the State of Washington to assess whether hydrologic functions of major floodplains and wetlands in the Grays River and Elochoman River (coordinate with Town of Cathlamet) subbasins have been disrupted, and to identify restoration opportunities where feasible and cost-effective. Pgs 4-36 and 4-40</p>
Plan Background & Context	<p>Floodplains provide storage for flood waters, thereby reducing peak flows and attendant damage during flood events. Water stored in a floodplain from a peak flow event drains back to the stream over a period of days or weeks. In addition to their hydrologic functions, floodplains offer important habitat functions.</p> <p>The Planning Unit reviewed opportunities for using floodplain management actions as a tool for managing stream flow. Floodplain activities that can be regulated under local floodplain ordinances include controlling alteration of natural flood plains, controlling filling and grading within flood plains, controlling construction of flood barriers such as dikes, and restricting land uses that might increase erosion. The majority of floodplain areas within WRIAs 25 and 26 are located in the middle or lower reaches of the various subbasins. Therefore, hydrologic benefits of floodplain management actions would occur primarily in these areas. Pgs 4-31 and 4-32</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

	Wahkiakum County should apply its land-use management authorities to protect existing floodplains and wetlands in the Grays River and Elochoman River subbasins. In addition, Wahkiakum County should partner with the State of Washington and Town of Cathlamet to assess whether hydrologic functions of major floodplains and wetlands have been disrupted, and to identify restoration opportunities where feasible and cost-effective. Pgs 4-36 and 4-40
Relationship to Other Actions and Coordination Needs	This Action is designed to work in coordination with a variety of Actions addressing protection and restoration of instream flows, including adoption of restrictions on issuance of new water rights in rule (e.g., water right reservations, instream flows, closures, etc.) per Action #917, and conservation activities per Action #912. This Action specifically addresses floodplain protection and restoration. Similar and supporting land use Actions address stormwater management (#923), forest practices (#921), and wetlands protection (#929). Establishing and maintaining stream flow gauges under Action #916 and implementation of a target stream flow program per Action #919 will provide data and information necessary to evaluate the short and long-term effectiveness of floodplain protection programs.
Expected Outcomes	Maintenance and improvement to instream flows by protecting floodplains from modifications that would impair their hydrologic functions and habitat value.
Is the Action Fully Addressed by the Tasks Below?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	<p>Policy SFP-1: Flow Monitoring (Pg 4-10)</p> <p>Policy SFP-1: Stream Gages – Various Rivers (Pg 4-37, 4-41, 4-47, and 4-52)</p> <p>Policy SFP-1: Target Flows – Olequa Creek & Coweeman River (G-3, G-4, G-7, G-8)</p> <p>Policy SFP-2: Restrictions on New Water Rights (Pg 4-18, 4-19)</p> <p>Policy SFP-3: Water Conservation (Pg 4-24)</p> <p>Policy SFP-9: Forest Practices (Pg 4-29)</p> <p>Policy SFP-10: Stormwater Management (Pg 4-31)</p> <p>Policy SFP-12: Floodplain Management (Pg 4-32)</p> <p>Policy SFP-13: Wetlands Management (Pg 4-33)</p> <p>Policy SFP-13: Wetlands-Lower Cowlitz Tributaries (Pg 4-51)</p> <p>Policy SFP-13: Wetlands-Mainstem Cowlitz River (Pg 4-51)</p> <p>Policy SFP-13: Floodplain and wetlands management-Coweeman River (Pg 4-46)</p> <p>Policy SFP-13: Floodplain and wetlands, Grays River (Pg 4-36, 4-40)</p>
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Low to Medium
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Review Adequacy of Existing Ordinances and Programs for Protection of Floodplain Function	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Inventory existing ordinances (e.g., floodplain, shoreline master program, subdivision, grade and fill, critical areas, etc.) and land use programs (e.g., greenspace, acquisition, parks and recreation, etc.) with applicability to floodplain protection• Review ordinance and program provisions for adequacy, using best available science (BAS), and Salmon Recovery Plan and Watershed Plan guidance• For the Grays River and Elochoman River subbasins:<ul style="list-style-type: none">◦ Conduct an assessment of hydrologic functions of major floodplains and wetlands to determine level of functional impairment (Wahkiakum County in partnership with State of Washington and Town of Cathlamet per Subaction #922C)◦ Based on the assessment above and the Salmon Recovery Plan Lead Entity Habitat Strategy, identify floodplain restoration opportunities in the Grays River and Elochoman River subbasins to address impaired conditions• Identify gaps in existing protection and restoration mechanisms and programs, along with BMP’s and strategies for addressing gaps• If gaps exist, initiate ordinance and/or program update process (See Task 2)	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; coordination meetings; contractor costs; project oversight and administration; etc.	
Funding Source(s)	Varies depending on entity. Grants from existing state & federal programs; legislative appropriations; state, county, city general fund revenues; county/city development fees; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	Administrative approvals; budget approvals, etc.	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct review of ordinances and/or programs; the level of support for ordinance and/or program updates may affect project success and outcomes; etc.		
Operation and Maintenance		
Est. Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 2	Draft, Adopt and Implement Ordinance and/or Program Updates; Monitor and Report Results	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Conduct public outreach and participation process as needed for ordinance and/or program updates (e.g., committees, workgroups, workshops, etc.) • Using BAS and Recovery Plan and Watershed Plan guidance, update ordinance and/or program provisions to protect floodplain functions • Adopt updated ordinance and/or program provisions • Implement updated ordinance and/or program provisions • Monitor and Report results 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; committee/workgroup meetings; advertising; enforcement; communications; reporting; etc.	
Funding Source(s)	Varies depending on entity. Grants from existing state & federal programs; legislative appropriations; state, county, city general fund revenues; county/city development fees; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; vehicles; etc.	
Agreements, Ordinances, Permits & Approvals	Administrative and budget approvals needed for ordinance/program updates; updates may require compliance with SEPA and/or NEPA; compliance with open meetings law requirements may be required; approval by funding or regulatory entities may be needed; various permit processes may be involved during implementation; etc.	
Other	TBD	
Constraints and Uncertainties		
Availability of funding may limit ability to update ordinances and/or programs; the level of public support for ordinance and/or program updates may affect project success and outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

General Comments

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #923 AND SUBACTIONS #923A,
#923B, AND #923C
STORMWATER DISCHARGE ON STREAM FLOW AND HABITAT

Action Summary¹	
Lead Partner(s)	<p>Phase II Entities: Cowlitz County, Longview, Kelso, and secondary permittees</p> <p>Non-Phase I and II Entities: Lewis and Wahkiakum Counties, Castle Rock, Cathlamet, Morton, Mossyrock, Toledo, Vader, Winlock</p> <p>Note: Secondary permittees include: ports, drainage improvement districts, diking districts, sewer districts, state agencies, public schools and universities, etc.</p>
Oversight Responsibilities	Department of Ecology, Environmental Protection Agency (EPA)
Coordinating Partner(s)	Varies depending on entity
Action Type	Requirement <input checked="" type="checkbox"/> (Phase 1 and Phase II entities and Secondary Permittees) Recommendation <input checked="" type="checkbox"/> (Non-Phase I and II entities)
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New Varies depending on entity <input checked="" type="checkbox"/> Existing/Ongoing <input checked="" type="checkbox"/> Revised
Table Description	<p>Action #923: Review effects of stormwater discharges on stream flow and habitat. Where needed to protect key habitat, implement programs that exceed minimum requirements (See Section 4.5.2).</p>
	<p>Subaction #923A: As Phase II communities, Cowlitz County and the Cities of Longview and Kelso should continue to carry out their legally mandated responsibilities with regard to stormwater management. Pg 4-31</p>
	<p>Subaction #923B: Lewis and Wahkiakum Counties and the remaining cities in all three counties should review their stormwater management ordinances to determine whether they are adequately protective of fish habitat in local streams that may be affected by future development. Where enhanced stormwater management needs are identified, revisions to local ordinances should be considered in light of the guidance and BMPs provided in Ecology's Manual or a reasonable equivalent. The focus should be on upgrading development practices and mitigation requirements in areas where stream flow and fish habitat may be compromised as development occurs. Costs, expected magnitude of benefits, and feasibility considerations should be included in this review. Pg 4-31</p> <p>Subaction #923C: Review and consider revising stormwater management ordinances and rules, in light of the guidance and BMPs provided in Ecology's stormwater manual. Pg 4-46</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Plan Background & Context	<p>Land use and development practices, particularly those related to impervious surfaces and stormwater management, also impact stream flows. Conversion of lands from rural uses to suburban or urban uses typically alters watershed hydrology substantially. Based on the hydrologic study by PWR (2003) for the WRIAs 25 and 26 subbasins, small increases in impervious area can result in small but significant increases in peak flows and reductions in low flows. In general, when land uses pass a threshold of ten percent effective impervious surfaces, stream flow degradation can be expected to begin (PWR 2003). Over the very long term (e.g. 50 years), there may be extensive changes in land use as the region continues to grow and development spreads. This will have corresponding effects on stream flow, unless significant resources are devoted to mitigation practices. Pg 4-30</p> <p>City and County policies can mitigate effects of development by controlling development densities, specifying amounts of impervious surface area, establishing stream buffers, protecting floodplains and wetlands, and addressing storm water management. Ecology's recently updated Stormwater Management Manual for Western Washington (Manual) provides guidance to local jurisdictions regarding implementation of best management practices (BMPs) regarding stormwater management. City and county ordinances, rules, and permits are used to translate Ecology's guidance into requirements that have authority. Pg 4-30</p> <p>State and federal statutes addressing stormwater runoff include the State of Washington Water Pollution Control Law (90.48 Revised Code of Washington), and the Federal Water Pollution Control Act (the Clean Water Act) Title 33 United States Code, Section 1251 et seq. These statutes provide requirements for Phase I (large/medium system) and Phase II (small system) municipal stormwater permits.</p>
Relationship to Other Actions and Coordination Needs	<p>This Action is designed to work in coordination with a variety of Actions addressing protection and restoration of instream flows and habitat conditions, including adoption of restrictions on issuance of new water rights in rule (e.g., water right reservations, instream flows, closures, etc.) per Action #917, and conservation activities per Action #912. This Action specifically addresses stormwater management. Similar and supporting land use Actions address floodplain management (#922), forest practices (#921), and wetlands protection (#929). Establishing and maintaining stream flow gauges under Action #916 and implementation of a target stream flow program per Action #919 will provide data and information necessary to evaluate the short and long-term effectiveness of stormwater management programs.</p>
Expected Outcomes	<p>Maintenance and improvement to instream flows and habitat conditions through management of stormwater runoff.</p>
Is the Action Fully Addressed by the Tasks Below?	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>

Supporting Strategies, Policies & Recommendations	Policy SFP-1: Flow Monitoring (Pg 4-10) Policy SFP-1: Stream Gages – Various Rivers (Pg 4-37,4-41, 4-47 and 4-52) Policy SFP-1: Target Flows – Olequa Creek & Coweeman River (Pg G-3, G-4, G-7, G-8) Policy SFP-2: Restrictions on New Water Rights (Pg 4-18, 4-19) Policy SFP-3: Water Conservation (Pg 4-24) Policy SFP-7: Enforcement Against Unauthorized Uses (Pg 4-27, 4-28) Policy SFP-9: Forest Practices (Pg 4-29) Policy SFP-10: Stormwater Management (Pg 4-31) Policy SFP-12: Floodplain Management (Pg 4-32) Policy SFP-13: Wetlands Management (Pg 4-33) Policy SFP-13: Wetlands- Lower Cowlitz Tributaries (Pg 4-51) Policy SFP-13: Wetlands- Mainstem Cowlitz River (Pg 4-51) Policy SFP-13: Floodplains and Wetlands Management-Coweeman River (Pg 4-46) Policy SFP-13: Floodplains and Wetlands, Grays River (Pg 4-36, 4-40)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Low to Medium
Identify Tasks that have not been Fully Funded	TBD

Supporting Tasks	
Task 1	Develop and/or Update Stormwater Management Ordinances Note: This Task applies to Phase I and II entities and secondary permittees.
Schedule	
Start Date	TBD
Planned Completion	TBD
Actual Completion	TBD
Benchmarks/ Milestones	<ul style="list-style-type: none"> If a stormwater management ordinance exists, review provisions for compliance with Phase I or Phase II (depending on entity) permit requirements and standards, and update ordinance as required (includes: public outreach, education and participation; coordination with other entities; draft updates; review and adoption process, etc.) If no ordinance currently exists, develop and adopt stormwater management ordinance in accordance with the applicable Phase I or Phase II permit requirements and standards (includes: public outreach, education and participation; coordination with other entities; draft ordinance preparation; review and adoption process, etc.) Implement stormwater management ordinance Monitor and Report results(as required)

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; coordination meetings; outreach and education; public notification; contractor costs; project oversight and administration; etc.	
Funding Source(s)	Varies depending on entity. Grants from existing state & federal programs; legislative appropriations; state, county, city general fund revenues; stormwater assessment fees; county/city development fees; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	Administrative approvals; budget approvals; approval of draft and final ordinances by Ecology, etc.	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct review or development of ordinances; the level of public support for ordinance development or updates may affect project success and outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 2	Review Existing Stormwater Management Ordinances Note: this Task applies to Phase I and II entities and secondary permittees, and others with existing ordinances addressing stormwater management.
Schedule	
Start Date	TBD
Planned Completion	TBD
Actual Completion	TBD
Benchmarks/ Milestones	<ul style="list-style-type: none">• Review existing stormwater management provisions for adequacy with regard to protection of instream flows and fish habitat. This review should consider the following<ul style="list-style-type: none">○ The location and nature of existing and future development based on comprehensive land use plans and zoning codes○ Identification and prioritization of areas for instream flow and fish habitat protection based on<ul style="list-style-type: none">▪ Salmon Recovery/Subbasin Plans<ul style="list-style-type: none">• Population priority• Reach priority• Limiting factors relating to high and low flows, and resulting habitat conditions• Other relevant information▪ WRIA 25/26 Watershed Plan<ul style="list-style-type: none">• Identified low and high flow problems• Instream flow/toe width data• Target flow priorities• Status of basin (e.g., closed, open, etc.)

	<ul style="list-style-type: none"> • Tidal versus non-tidal reaches • Technical assessments and studies <ul style="list-style-type: none"> ▪ Other applicable watershed or resource plans <ul style="list-style-type: none"> ○ Evaluation of the adequacy of existing provisions and standards based on a review of best available science and best management practices and guidelines (e.g., Ecology's Stormwater Manual) • Based on the above, identify gaps in current protection, enhanced management needs and updated standards and provisions to address gaps, in light of expected magnitude of benefits and feasibility considerations • Revise, update or adopt ordinance (includes: public outreach, education and participation; coordination with other entities; draft updates; review and adoption process, etc.) • Implement revised, updated or adopted stormwater management ordinance • Monitor and report results
Resource Needs	
Costs	Period Beginning: TBD Amount: TBD
	Total: TBD
Key Cost Drivers	Staff time; coordination meetings; outreach and education; public notification; contractor costs; project oversight and administration; etc.
Funding Source(s)	Varies depending on entity. Grants from existing state & federal programs; legislative appropriations; state, county, city general fund revenues; stormwater assessment fees; county/city development fees; etc.
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.
Agreements, Ordinances, Permits & Approvals	Administrative approvals; budget approvals; approval of draft and final ordinances by Ecology, etc.
Other	TBD
Constraints and Uncertainties	
Availability of funding may limit ability to conduct review or development of ordinances; the level of public support for ordinance development or updates may affect project success and outcomes; etc.	
Operation and Maintenance	
Estimated Annual Cost	TBD
Describe O&M Tasks	TBD

General Comments

**¹WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #924 AND SUBACTION #924A
PURCHASE OR LEASE WATER RIGHTS FOR STATE TRUST PROGRAM**

Action Summary	
Lead Partner(s)	Ecology, Water Purveyors
Oversight Responsibilities	Ecology
Coordinating Partner(s)	Washington Water Trust, Planning Unit
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #924: Purchase or lease of water rights from willing sellers, for State Trust program (See Section 4.4.5).
	Subaction #924A: Use the existing State Trust program, and funding provided by the State Legislature, to identify and acquire water rights from water users willing to sell or donate their water rights in WRIAs 25 and 26, where transfers to the State Trust would provide a significant benefit to fish habitat. Pg 4-27
Plan Background & Context	<p>Ecology has established a program under chapter 90.42 RCW in which water rights can be acquired from willing water rights holders and put into a trust water rights program. Trust water rights can either be held by the state or authorized for use by Ecology for instream flows, irrigation, municipal, or other beneficial uses. The trust water rights program is voluntary on the part of the existing water right holder. By reducing or eliminating selected diversions, the transfer of water rights to the trust program can increase stream flows.</p> <p>This technique has limited applicability in the WRIAs 25 and 26 subbasins. As mentioned previously, the majority of surface water diversions (i.e., irrigation uses) are located in the lower portion of the subbasin where flow restoration, in general, is considered less beneficial to fish, as compared to flow protection and enhancement in the upper reaches of the subbasin. There may be local exceptions, however, where a transfer could offer a significant benefit. Such transfers may be made possible if funds were made available for the State to purchase the water rights. In addition, for the selected communities discussed above under the source-substitution technique, transfers of water rights to the State Trust could be performed for any water rights no longer needed. Pg 4-27</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions and Coordination Needs	<p>These Subactions specifically addresses transfer of water rights to the State Trust program. These Subactions are designed to work in coordination with a variety Actions addressing protection and restoration of instream flows, including adoption of restrictions on issuance of new water rights in rule (e.g., water right reservations, instream flows, closures, etc.) per Action #917, conservation activities per Action #912, and land management actions addressing stormwater management, forest practices, and wetlands protection (Actions #923, #921, and #929, respectively). Establishing and maintaining stream flow gauges under Action #916 and implementation of a target stream flow program per Action #919 will provide data and information necessary to evaluate the short and long-term effectiveness of these Subactions.</p> <p>The Washington Water Acquisition Program is a voluntary, incentive-based program designed to encourage water right holders in Washington State to sell, lease, or donate some or all of their water rights to increase instream flows for the purpose of salmon restoration. The program is administered by the Washington State Department of Ecology (Ecology) in collaboration with the Washington Water Trust (WWT). Acquisitions under the program may include purchase, lease, split season lease, dry year lease, or donation. Water right transfers are governed by Chapters 90.42 RCW, 90.03 RCW, 90.38 RCW, and 90.14 RCW.</p>
Expected Outcomes	Maintenance and improvement to instream flows by transfer of active water rights to the State Trust Program.
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	<p>Policy WSP-2: Stream Flow Protection in Developing Supplies (Pg 3-9)</p> <p>Policy SFP-1: Flow Monitoring (Pg 4-10)</p> <p>Policy SFP-1: Stream Gages – Various Rivers (Pg 4-37, 4-41, 4-47 and 4-52)</p> <p>Policy SFP-1: Target Flows – Olequa Creek & Coweeman River (G-3, G-4, G-7, G-8)</p> <p>Policy SFP-2: Restrictions on New Water Rights (Pg 4-18, 4-19)</p> <p>Policy SFP-3: Water Conservation (Pg 4-24)</p> <p>Policy SFP-5: Source Substitution (Pg 4-26, 4-46)</p> <p>Policy SFP-6: Transfer of Water Rights to State Trust (Pgs 4-27)</p> <p>Policy SFP-9: Forest Practices (Pg 4-29)</p> <p>Policy SFP-10: Stormwater Management (Pg 4-31)</p> <p>Policy SFP-12: Floodplain Management (Pg 4-32)</p> <p>Policy SFP-13: Wetlands Management (Pg 4-33)</p> <p>Policy SFP-13: Wetlands- Lower Cowlitz Tributaries (Pg 4-51)</p> <p>Policy SFP-13: Wetlands- Mainstem Cowlitz River (Pg 4-51)</p> <p>Policy SFP-13: Floodplain and Wetlands-Coweeman River (Pg 4-46)</p> <p>Policy SFP-13: Floodplains and Wetlands, Grays River (Pg 4-36, 4-40)</p>
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Low to Medium
Tasks not Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Transfer Water Right to State Trust	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<p>The following outlines the general steps involved in transfer of a water right to State Trust:</p> <ul style="list-style-type: none"> • Applicant files standard application for change/transfer (90.03.380 requirements apply) • Standard public notice made in newspapers (Ecology) • Evaluation of the extent and validity of the water right (Ecology) • Quantification of the trust water right based on the existing state guidelines developed under RCW 90.42.050 (Ecology) • Completion of impairment analysis to ensure existing water rights are not impaired (not required for short term-leases) (Ecology) • Issue report of exam or findings of fact that describes the extent of the right, quantification of the trust water right, etc. (Ecology) • Issuance of superseding certificate (for trust rights based on a state-issued certificate) (Ecology) <p>For more detailed information on the State of Washington's Water Right Trust Program procedures and applicability consult the Department of Ecology's website at: http://www.ecy.wa.gov/pubs/0311005.pdf</p>	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time and/or consulting time related to the above steps; permit fees; publication and advertising fees; direct acquisition costs; etc.	
Funding Source(s)	State and federal grants; legislative appropriations; congressional appropriations; Columbia Basin Water Transactions Program funds; etc	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	See statutory requirements discussed above.	
Constraints and Uncertainties		
Availability of funding may limit ability to identify and secure water rights for transfer; limited numbers of active water right permits may be available in key watersheds; program success will depend on the voluntary participation by willing water right holders; etc		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	
General Comments		

¹**WRIA 25/26 DETAILED IMPLEMENTATION PLAN**
ACTION SCHEDULE: ACTION #925 AND SUBACTION #925A
IDENTIFY AND IMPLEMENT FLOODPLAIN RESTORATION PROJECTS

Action Summary	
Lead Partner(s)	Counties, Cities, State Agencies w/Land Management Responsibilities, Non-Governmental Organizations, Others
Oversight Responsibilities	Local, State and Federal Agencies with Permitting Responsibilities
Coordinating Partner(s)	Various
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input type="checkbox"/> New <input checked="" type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #925 (#905): Within authorities, identify floodplain restoration projects and implement where feasible (See Section 4.5.3).
	Subaction #925A: Within authorities, local jurisdictions and state agencies with land-management responsibilities should identify floodplain restoration projects, subject to local input, cost-benefit analysis, and availability of funding. Where these factors are favorable, and where substantial benefits to flow or other habitat factors are identified, these projects should be pursued for implementation. Current floodplain uses and the benefits of existing control structures will be considered when determining if specific floodplain restoration projects should be pursued. Pg 4-32
Plan Background & Context	<p>Floodplains provide storage for flood waters, thereby reducing peak flows and attendant damage during flood events. Water stored in a floodplain from a peak flow event drains back to the stream over a period of days or weeks. In addition to their hydrologic functions, floodplains offer important habitat functions. Pg 4-31</p> <p>The Planning Unit reviewed opportunities for using floodplain management actions as a tool for managing stream flow, and for improving fish habitat conditions. In addition to protecting existing floodplains, there may be opportunities to restore floodplain functions where floodplains have been altered or disconnected from the river channel. The majority of floodplain areas within WRIAs 25 and 26 are located in the middle or lower reaches of the various subbasins. Therefore, hydrologic benefits of floodplain management actions would occur primarily in these areas. Pg 4-32</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions and Coordination Needs	This Action identifies floodplain restoration as a tool for managing stream flow. This action is intended to work in coordination with a variety of Actions addressing protection and restoration of instream flows and habitat conditions, including adoption of restrictions on issuance of new water rights in rule (e.g., water right reservations, instream flows, closures, etc.) per Action #917, and conservation activities per Action #912. This Action specifically addresses floodplain management. Similar and supporting land use Actions address stormwater management (#923), forest practices (#921), and wetlands protection (#929). Establishing and maintaining stream flow gauges under Action #916 and implementation of a target stream flow program per Action #919 will provide data and information necessary to evaluate the short and long-term effectiveness of floodplain restoration programs.
Expected Outcomes	Maintenance and improvement to instream flows and habitat conditions through floodplain restoration.
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy SFP-1: Flow Monitoring (Pg 4-10) Policy SFP-1: Stream Gages – Various Rivers (Pg 4-37, 4-41, 4-47 and 4-52) Policy SFP-1: Target Flows – Olequa Creek & Cowlitz River (Pg G-3, G-4, G-7, G-8) Policy SFP-2: Restrictions on New Water Rights (Pg 4-18, 4-19) Policy SFP-3: Water Conservation (Pg 4-24) Policy SFP-7: Enforcement Against Unauthorized Uses (Pg 4-27, 4-28) Policy SFP-9: Forest Practices (Pg 4-29) Policy SFP-10: Stormwater Management (Pg 4-31) Policy SFP-12: Floodplain Management (Pg 4-32) Policy SFP-13: Wetlands Management (Pg 4-33) Policy SFP-13: Wetlands-Lower Cowlitz Tributaries (Pg 4-51) Policy SFP-13: Wetlands-Mainstem Cowlitz River (Pg 4-51) Policy SFP-13: Floodplain and Wetlands Management-Cowlitz River (4-46) Policy SFP-13: Floodplains and Wetlands-Grays River (Pg 4-36, 4-40)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Medium to High
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Planning/Project Development	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">Identify floodplain restoration opportunities using:<ul style="list-style-type: none">Salmon Recovery and Fish & Wildlife Subbasin Plan Habitat StrategyWatershed assessmentsWatershed Plan guidanceOther available documentsSeek and securing fundingPrioritize potential floodplain restoration projects based on:<ul style="list-style-type: none">Flow benefitsFish and habitat benefitsLocal inputCost-benefit analysisAvailability of fundingRisk analysisPreliminary project design and engineeringFinal project design and engineeringPermitting (e.g., shoreline substantial development permit; critical areas; floodplain; grading and clearing; Section 404; Section 401 Certification; hydraulic project approval; SEPA compliance, etc)	
Resource Needs		
Costs	Period Beginning TBD	Amount TBD
	Total TBD	
Key Cost Drivers	Consulting services; staff time; habitat analysis and assessment; coordination meetings; public outreach; project oversight and administration; plan review and approval; etc.	
Funding Source(s)	State, federal and other grant programs (e.g., SRFB, National Fish and Wildlife Foundation, Community Salmon Fund, Family Forest and Fish Passage Program, Bonneville Power Administration, etc.); private industry; legislative appropriations; local diking districts; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; field equipment; drafting hardware and software; etc	
Agreements, Ordinances, Permits & Approvals	Permitting requirements will vary depending on specific project. Examples of required permits include: shoreline substantial development permit; building; critical areas; floodplain; grading and clearing; ESA consultation; Section 404; Section 401 certification; hydraulic project approval; and SEPA compliance. If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft plans may be needed; contracts between funding entities, proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work; etc.	

Constraints and Uncertainties		
Availability of funding may limit ability to conduct identify and prioritize floodplain restoration project opportunities; the level of coordination and cooperation between entities may affect project success and outcomes; public interest and support will affect project feasibility and alternatives; etc.		
Operation and Maintenance		
Est. Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 2	Project Implementation	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Prepare final construction plans and specifications • Prepare RFP and hire contractor(s) (if needed) • Initiate construction • Project management and oversight • Project completion • Operation and maintenance • Monitoring 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; contractor services; staff time; permitting and application fees; project oversight and administration; monitoring; permit fees; supplies and materials; project meetings; compliance inspections; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; equipment rentals; supply and material handling and transport; etc.	
Agreements, Ordinances, Permits & Approvals	Approval of final construction plans by the project proponent and permitting agencies may be needed; if multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; contracts between funding entities, proponents and consultants may be needed; etc.	
Constraints and Uncertainties		
Constraint	Construction may be delayed if permit approvals are not secured sufficiently in advance; changes in supply and material costs may affect construction timelines and budgets; weather constraints affect project timing; permit requirements may affect construction methods, timing and design; etc.	
Operation and Maintenance		
Est. Annual Cost	TBD	
Describe O&M Tasks	Once completed, the project will require ongoing monitoring, and infrastructure maintenance. Project plans and funding approaches should include provisions for long-term operation and maintenance.	
General Comments		

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: #926 A
SEE 914 A**

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #927 AND SUBACTION #927A
WATER CONSERVATION BY FARMERS PRACTICING
IRRIGATED AGRICULTURE; TECHNICAL ASSISTANCE BY
CONSERVATION DISTRICTS**

Action Summary ¹	
Lead Partner(s)	Planning Unit, Conservation Districts, Agricultural Water Users
Oversight Responsibilities	Department of Ecology
Coordinating Partner(s)	Planning Unit
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input checked="" type="checkbox"/> Revised
Table Description	Action #927 (#907): Water conservation by farmers practicing irrigated agriculture. Technical assistance by Conservation District in each county (See Section 4.4.2).
	Subaction #927A: Provide technical assistance to farmers to identify water conservation opportunities and funding sources, focusing on select locations where there would be significant benefits to stream flows. Pg 4-24
Plan Background & Context	<p>Water conservation in the agricultural sector was not studied in detail during the planning process. There may be opportunities for water conservation activity involving agricultural irrigation uses. However, there are no irrigation districts in WRIAs 25 and 26, where water use and management is conducted on a large scale. Furthermore, there is no sign of increases in this type of water use. Water conservation by farmers in a localized area may offer localized opportunities for stream flow protection or enhancement. Pg 4-24</p> <p>Water conservation actions by farmers practicing irrigated agriculture may be warranted in selected locations, where there would be significant benefits to stream flows. The Conservation District in each County should provide technical assistance to farmers to identify water conservation opportunities and funding sources. Pg. 4-24</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions and Coordination Needs	This Action is designed to work in coordination with a variety of Actions addressing protection and restoration of instream flows and habitat conditions, including adoption of restrictions on issuance of new water rights in rule (e.g., water right reservations, instream flows, closures, etc.) per Action #917, conservation activities per Action #912, and a variety of land use Actions addressing stormwater management (#923), floodplain management (#922), forest practices (#921), and wetlands protection (#929). Establishing and maintaining stream flow gauges under Action #916 and implementation of a target stream flow program per Action #919 will provide data and information necessary to evaluate the effectiveness of conservation measures by farmers practicing irrigated agriculture.
Expected Outcomes	Identification, funding and implementation of agricultural water conservation projects.
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy SFP-1: Flow Monitoring (Pg 4-10) Policy SFP-1: Stream Gages – Various Rivers (Pg 4-37 4-41, 4-47 and 4-52) Policy SFP-1: Target Flows – Olequa Creek and Coweeman River (Pg G-3, G-4, G-7, G-8) Policy SFP-2: Restrictions on New Water Rights (Pg 4-18, 4-19) Policy SFP-3: Water Conservation (Pg 4-24) Policy SFP-7: Enforcement Against Unauthorized Uses (Pg 4-27, 4-28) Policy SFP-9: Forest Practices (Pg 4-29) Policy SFP-10: Stormwater Management (Pg 4-31) Policy SFP-12: Floodplain Management (Pg 4-32) Policy SFP-13: Wetlands Management (Pg 4-33) Policy SFP-13: Wetlands: Manstem Cowlitz River (4-51) Policy SFP-13: Floodplain and Wetlands Management: Coweeman River (Pg 4-46) Policy SFP-13: Floodplains and Wetlands, Grays River (Pg 4-36, 4-40)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Medium
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Identify and Prioritize Technical Assistance and Funding Opportunities (Conservation District/Planning Unit Lead)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Identify and secure funding source for analyses• Identify and prioritize stream reaches for enhancement of instream flows using information in:<ul style="list-style-type: none">○ Salmon Recovery/Subbasin Plans<ul style="list-style-type: none">▪ Population priority▪ Reach priority▪ Limiting factors relating to flow▪ Other relevant information○ WRIA 25/26 Watershed Plan<ul style="list-style-type: none">▪ Identified low flow problems▪ Instream flow/toe width data▪ Target flow priorities▪ Status of basin (e.g., closed, open, etc.)▪ Tidal versus non-tidal reaches▪ Reservation status▪ Technical assessments and studies○ Other applicable watershed or resource plans• Inventory agricultural water users with conservation needs in prioritized streams• Coordinate with agricultural water users as needed• Prioritize technical assistance opportunities based on potential instream flow benefits (e.g., recovery reach tiering, population priorities, low-flow considerations, etc.)• Develop prioritized list of agricultural water users based on the above• Identify funding sources for implementation of conservation measures.	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total:TBD	
Key Cost Drivers	Consulting services; staff time; coordination meetings; property owner outreach; project administration; etc.	
Funding Source(s)	Potential sources include: grants from existing state & federal programs; legislative appropriations; congressional appropriations; state, county, city general fund revenues; misc. grants; Phase 4 implementation grants; grants from DOH or Ecology; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	Agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; etc.	

Constraints and Uncertainties	
TBD	
Operation and Maintenance	
Estimated Annual Cost	TBD
Describe O&M Tasks	TBD

Task 2	Project Development and Implementation (Conservation District/Agricultural Water User Lead)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Coordinate with willing agricultural water users to develop water conservation plans, using best management practices• If needed, prepare plans and specifications for permitting• Permitting: TBD• Implement project• Project management and oversight• Project completion• Operation and Maintenance	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consulting services; contractor services; staff time; permitting and application fees; project oversight and administration; permit fees; supplies and materials; project meetings; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; field meeting locations and scheduling; coordination with permitting entities; equipment rentals; supply and material handling and transport; etc.	
Agreements, Ordinances, Permits & Approvals	Permits for construction will vary depending on specific project. Examples of required permits include: shoreline substantial development permit; building; critical areas; floodplain; grading and clearing; ESA consultation; Section 404; Section 401 certification; hydraulic project approval; and SEPA compliance. Approval of final construction plans by the project proponent may be required; if multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions related to project implementation; contracts between proponents and consultants/contractors may be needed; etc.	

Constraints and Uncertainties

Constraint	Project success will depend on willingness of agricultural water users and funding availability; construction may be delayed if permit approvals are not secured sufficiently in advance; changes in supply and material costs may affect construction timelines and budgets; weather constraints affect project timing; permit requirements may affect construction methods, timing and design; etc.
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Operation and Maintenance

Estimated Annual Cost	TBD
Describe O&M Tasks	Once completed, the project may require ongoing monitoring, infrastructure maintenance and upgrades.

General Comments

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #928 AND SUBACTION #928A
SOURCE SUBSTITUTION FOR SELECTED AREAS
SERVICED BY INDIVIDUAL HOUSEHOLD WELLS

Action Summary¹	
Lead Partner(s)	Counties (Cowlitz, Lewis, and Wahkiakum), Cities, Local Governments, Ecology
Oversight Responsibilities	Ecology
Coordinating Partner(s)	Public Water Systems, Landowners
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #928: When modifying or adopting comprehensive plans, zoning designations, or other land use regulations, consider source substitution for selected areas served by individual household wells: relatively higher densities and likelihood of stream impacts; dependent on feasibility and cost (See Section 4.4.4).
	Subaction #928 A: Communities using water sources (surface or ground water) that significantly reduce base flows in any stream that provides important fish habitat within WRIAs 25 and 26 should evaluate alternative sources of supply that eliminate or minimize these effects. It is anticipated that this would require examination of cost, potential rate impacts, reliability considerations, and evaluation of other feasibility criteria. In limited cases, this policy may also apply to rural areas where residents rely on individual domestic wells (exempt wells). Cowlitz, Lewis and Wahkiakum Counties, Cities, local governments, Ecology and/or others as appropriate should assess this possibility through a water-balance analysis, in selected rural areas where extensive new development is expected to occur or where there is substantial existing development served by exempt wells. Pg 4-26
Plan Background & Context	During preparation of a watershed plan in the nearby WRIAs 27 and 28, LCFRB commissioned a pilot review of data on individual domestic wells (exempt wells) in the Washougal River subbasin. In this setting, where rural residences are relatively low-density, and where most houses have septic systems that return domestic water to the subsurface, well withdrawals have a relatively small effect on stream flow in the dry season. Based on this finding, management of exempt wells does not appear to be a high priority at the regional scale within WRIAs 25 and 26. However, there may be localized areas where due to density, availability of public sewer service, or other conditions, even individual domestic wells could cause problems for stream flow. The recommendation above addresses this situation. Pg 4-26

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions and Coordination Needs	The Washougal River pilot assessment of exempt well impacts suggested that in areas where low density development is served by exempt wells and septic systems, instream flow impacts are not a high priority concern. However, Action #928 and related Action #926 (906) are intended to address situations where higher density development could pose problems to instream flows. This Action is also intended to address situations where extension of sewer service to areas served by domestic wells could deplete instream flows. These Actions call for consideration of these potential instream flow impacts when modifying or adopting comprehensive plans, zoning designations, or other land use regulations. The successful implementation of these Actions would support broader Actions designed to protect and restore instream flows (e.g., Actions #918, #919, #922, #923, etc). Identification of alternative sources of supply to reduce instream flow impacts would involve Action #909B, which describes the procedure for evaluating new or expanded supplies. Aquifer mapping per Action #910E could also help with identification of alternative water supplies.
Expected Outcomes	Development and implementation of land use plans and regulations that eliminate or reduce instream flow impacts resulting from high densities of residences served by domestic wells and septic systems, and/or extension of sewer services to these areas.
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy WSP-1: Access to Water Supplies (Pg 3-9) Policy WSP-1: Water Reservations (Pg 3-12) Policy WSP-1: Aquifer Mapping (Pg 3-11) Policy WSP-2: Water Supply- Individual Household Wells (Pg 3-21) Policy WSP-2: Stream Flow Protection in Developing Supplies (Pg 3-9) Policy WSP-2: Procedure for Evaluating Existing Supplies (Pg 3-13) Policy SFP-1: Flow Monitoring (Pg 4-10) Policy SFP-1: Stream Gages – Various Rivers (Pg 4-37, 4-41, 4-47, 4-52) Policy SFP-1: Target Flows –Olequa Creek and Cowlitz River (G-3, G-4, G-7, G-8) Policy SFP-2: Restrictions on New Water Rights (Pg 4-18, 4-19) Policy SFP-3: Water Conservation (Pg 4-24) Policy SFP-5: Source Substitution (Pg 4-26) Policy SFP-7: Enforcement Against Unauthorized Uses (Pg 4-27, 4-28) Policy SFP-9: Forest Practices (Pg 4-29) Policy SFP-10: Stormwater Management (Pg 4-31) Policy SFP-11: Sewer Extensions (Pg 4-31) Policy SFP-12: Floodplain Management (Pg 4-32) Policy SFP-13: Wetlands Management (Pg 4-33) Policy SFP-13: Wetlands-Lower Cowlitz Tributaries (4-51) Policy SFP-13: Wetlands- Mainstem Cowlitz River (Pg 4-51) Policy SFP-13: Floodplain and Wetlands Management-Coweeman River (Pg 4-46) Policy SFP-13: Floodplains and wetlands-Grays River (Pg 4-36, Pg 4-40)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Financial/Economic Costs ²	Medium to High
Tasks not Fully Funded	TBD

Supporting Tasks	
Task 1	Integrate Instream Flow Considerations into Planning Processes
Schedule	
Start Date	TBD
Planned Completion	TBD
Actual Completion	TBD
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Initiate planning process based on the need to develop or update comprehensive plans, zoning designations, or other land use regulations or plans • Identify the scope and scale of target planning area(s) • Coordinate with water and sewer service providers, DOH, and Ecology as needed • Identify critical reaches for preservation or enhancement of instream flows in the planning area(s) using information in: <ul style="list-style-type: none"> ○ Salmon Recovery/Subbasin Plans <ul style="list-style-type: none"> ▪ Population priority ▪ Reach priority ▪ Limiting factors relating to flow ▪ Other relevant information ○ WRIA 25/26 Watershed Plan <ul style="list-style-type: none"> ▪ Identified low flow problems ▪ Instream flow/toe width data ▪ Target flow priorities ▪ Status of basin (e.g., closed, open, etc.) ▪ Tidal versus non-tidal reaches ▪ Reservation status ▪ Technical assessments and studies ○ Other applicable watershed or resource plans • Prioritize critical reaches for preservation or enhancement of instream flows • Conduct a water balance within the target planning area(s), addressing: <ul style="list-style-type: none"> ○ Location and number of existing and projected domestic wells and other water supply sources ○ Location and number of existing and projected onsite sewage disposal systems ○ Analysis of the relationship between existing and projected domestic wells, onsite and offsite sewage treatment and disposal systems, and instream flows (Note: this task may involve hydrological assessments or modeling) • Identify planning scenarios designed to preserve or enhance instream flow conditions (Note: See Actions #909 and #910 for processes to identify or expand alternative water supplies)

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

	<ul style="list-style-type: none"> Select and implement preferred alternative(s). This may involve implementation of various plan actions and subactions (e.g., Action #910 and 911). Identification of preferred alternatives must include examination of cost, potential rate impacts, reliability considerations, and evaluation of other feasibility criteria. Integrate preferred alternative(s) into land use plans and codes as necessary.
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Resource Needs

Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; coordination meetings; consulting services; public outreach; advertising; project oversight and administration; etc.	
Funding Source(s)	Varies depending on entity. Potential sources include: water rates and hookup charges in affected service area; grants or low-interest loans from existing state & federal programs; public water system; legislative appropriations; congressional appropriations; state, county, city general fund revenues; misc. grants; county/city development fees; Phase 4 implementation grants; grants from DOH or Ecology; private industry; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; compliance with a variety of land use statutes and planning requirements (e.g., GMA, comprehensive planning, SEPA, capital facilities planning, etc) may be needed.	
Other		

Constraints and Uncertainties

Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; extensive public coordination and outreach will be necessary, etc.

Operation and Maintenance

Estimated Annual Cost	TBD
Describe O&M Tasks	TBD

General Comments

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #929 AND SUBACTION #929A
COUNTY-WIDE WETLAND ASSESSMENT
FOR HYDROLOGICAL FUNCTIONS**

Action Summary¹	
Lead Partner(s)	Counties, Planning Unit
Oversight Responsibilities	Counties, Planning Unit
Coordinating Partner(s)	Varies
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #929: Wetlands inventories and ordinances: assess and protect hydrologic functions, consider strengthening mitigation ratios (See Section 4.5.4).
	Subaction #929A: In conjunction with the Planning Unit, Counties should explore funding opportunities for conducting a county-wide wetland assessment that includes evaluation of hydrological functions. Pg. 4-33
Plan Background & Context	<p>There are a variety of different wetland types in WRIAs 25 and 26, and different wetlands offer different benefits in terms of hydrology and habitat. The hydrologic functions of most wetlands in the subbasins have not been studied in detail. Those wetlands that are associated with streams and floodplains can help to moderate peak flows. However, the amount of attenuation provided by restoration of a wetland is not always significant relative to the flow rates that occur. There could also be some limited benefit to low flow periods, since water from high flow events is stored and then released over a period of several weeks. Wetlands associated with streams and floodplains occur throughout the many subbasins in WRIAs 25 and 26. However, the most hydrologically significant wetlands are located along the mainstem rivers, and especially in low-lying terrain near the mouths of these rivers.</p> <p>As with floodplain preservation and restoration, there are benefits to restoring and preserving wetlands for benefit of fish habitat in general, apart from their effects on flow rates. County policies offer the best tools for wetland management in WRIAs 25 and 26. Wetland ordinances can be modified to include hydrologic functions in the protection hierarchy. Prohibitions on development can be enacted for wetlands with strong hydrologic functions. Where development will reduce or eliminate wetlands, mitigation ratios can be increased. Pg 4-33</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions and Coordination Needs	This Action is designed to work in coordination with a variety of Actions addressing protection and restoration of instream flows, including adoption of restrictions on issuance of new water rights in rule (e.g., water right reservations, instream flows, closures, etc.) per Action #917, and conservation activities per Action #912. This Action specifically addresses protection of wetland hydrological functions. Similar and supporting land use Actions address stormwater management (#923), forest practices (#921), and floodplain protection (#922). Establishing and maintaining stream flow gauges under Action #916 and implementation of a target stream flow program per Action #919 will provide data and information necessary to evaluate the short and long-term effectiveness of wetland protection programs.
Expected Outcomes	Completion of a county-wide wetland assessment that includes hydrological functions.
Is the Action Fully Addressed by the Tasks Below?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	<p>Policy SFP-1: Flow Monitoring (Pg 4-10)</p> <p>Policy SFP-1: Stream Gages – Various Rivers (Pg 4-37, 4-41, 4-47, and 4-52)</p> <p>Policy SFP-1: Target Flows – Olequa Creek & Coweeman River (Pg G-3, G-4, G-7, G-8)</p> <p>Policy SFP-2: Restrictions on New Water Rights (Pg 4-18, 4-19)</p> <p>Policy SFP-3: Water Conservation (Pg 4-24)</p> <p>Policy SFP-9: Forest Practices (Pg 4-29)</p> <p>Policy SFP-10: Stormwater Management (Pg 4-31)</p> <p>Policy SFP-12: Floodplain Management (Pg 4-32)</p> <p>Policy SFP-13: Wetlands Management (Pg 4-33)</p> <p>Policy SFP-13: Wetlands-Lower Cowlitz Tributaries (Pg 4-51)</p> <p>Policy SFP-13: Wetlands-Mainstem Cowlitz River (Pg 4-51)</p> <p>Policy SFP-13: Floodplain and wetlands management-Coweeman River (Pg 4-46)</p> <p>Policy SFP-13: Floodplain and wetlands, Grays River (Pg 4-36, 4-40)</p>
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Low to Medium
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Pre-project Planning	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Identify geographical scope of project (e.g., single or multiple counties)• Identify funding sources• Complete grant application and submit to funding source (if grant source is pursued)• Secure funds• Develop detailed scope of work• Prepare RFP/hire contractor (if needed)• Coordinate with existing service providers and affected jurisdictions• Possible MOU/MOA between jurisdictions	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Water Purveyor, USGS, County and Planning Unit staff time; coordination meetings; public outreach; advertising; project oversight and administration; etc.	
Funding Source(s)	Potential sources include: water rates and hookup charges in affected service area; grants from existing state & federal programs; legislative appropriations; congressional appropriations; state, county, city general fund revenues; Phase 4 implementation grants; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; etc.	
Other		
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	Not Applicable	
Describe O&M Tasks	Not Applicable	

Task 2	Complete Wetland Assessment	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Coordinate with affected entities • Compile existing information (e.g., reports, maps, studies, plans, etc.) • Conduct additional monitoring and assessment as necessary • Develop draft report • Review and approval of draft report and products • Revisions to draft report and products • Approval of final products • Publish report and maps 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; consulting services (if needed); data collection; modeling/data analysis and assessment; coordination meetings; public outreach; project administration; etc.	
Funding Source(s)	Same as Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work; etc.	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; etc		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	
General Comments		

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #929 AND SUBACTIONS
#929B, #929C, #929D**

**WETLAND ORDINANCES – EVALUATE AND PROTECT HYDROLOGICAL FUNCTIONS,
STRENGTHEN MITIGATION RATIOS**

Action Summary¹	
Lead Partner(s)	Counties
Oversight Responsibilities	State Agencies with Land Management Responsibilities
Coordinating Partner(s)	Varies
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input type="checkbox"/> New (Varies) <input type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #929: Wetlands inventories and ordinances: assess and protect hydrologic functions, consider strengthening mitigation ratios (See Section 4.5.4).
	<p>Subaction #929B: Counties should Require evaluation of hydrological function as part of any site-specific wetland assessments conducted under their critical areas, wetland or other land use ordinances. Pg 4-33</p> <p>Subaction #929C: County wetland ordinances should be modified as needed to include hydrologic functions in the wetland protection hierarchy. Pg 4-33</p> <p>Subaction #929D: Counties should review and consider strengthening mitigation ratios, for selected wetland areas that offer significant hydrologic functions or other fish habitat benefits. Pg 4-33</p>
Plan Background & Context	<p>Those wetlands that are associated with streams and floodplains can help to moderate peak flows. However, the amount of attenuation provided by restoration of a wetland is not always significant relative to the flow rates that occur. There could also be some limited benefit to low flow periods, since water from high flow events is stored and then released over a period of several weeks. Wetlands associated with streams and floodplains occur throughout the many subbasins in WRIAs 25 and 26. However, the most hydrologically significant wetlands are located along the main stem rivers, and especially in low-lying terrain near the mouths of these rivers.</p> <p>As with floodplain preservation and restoration, there are benefits to restoring and preserving wetlands for benefit of fish habitat in general, apart from their effects on flow rates. County policies offer the best tools for wetland management in WRIAs 25 and 26. Wetland ordinances can be modified to include hydrologic functions in the protection hierarchy. Prohibitions on development can be enacted for wetlands with strong hydrologic functions. Where development will reduce or eliminate wetlands, mitigation ratios can be increased. Pg 4-33</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions and Coordination Needs	This Action is designed to work in coordination with a variety of Actions addressing protection and restoration of instream flows, including adoption of restrictions on issuance of new water rights in rule (e.g., water right reservations, instream flows, closures, etc.) per Action #917, and conservation activities per Action #912. This Action specifically addresses protection of wetland hydrological functions. Similar and supporting land use Actions address stormwater management (#923), forest practices (#921), and floodplain protection (#922). Establishing and maintaining stream flow gauges under Action #916 and implementation of a target stream flow program per Action #919 will provide data and information necessary to evaluate the short and long-term effectiveness of wetland protection programs.
Expected Outcomes	Maintenance and improvement to wetland hydrological functions.
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy SFP-1: Flow Monitoring (Pg 4-10) Policy SFP-1: Stream Gages – Various Rivers (Pg 4-37, 4-41, 4-47, 4-52) Policy SFP-1: Target Flows – Olequa Creek & Coweeman River (Pg G-3, G-4, G-7, G-8) Policy SFP-2: Restrictions on New Water Rights (Pg 4-18, 4-19) Policy SFP-3: Water Conservation (Pg 4-24) Policy SFP-9: Forest Practices (Pg 4-29) Policy SFP-10: Stormwater Management (Pg 4-31) Policy SFP-12: Floodplain Management (Pg 4-32) Policy SFP-13: Wetlands Management (Pg 4-33) Policy SFP-13: Wetlands-Lower Cowlitz Tributaries (Pg 4-51) Policy SFP-13: Wetlands-Mainstem Cowlitz River (Pg 4-51) Policy SFP-13: Floodplain and wetlands management-Coweeman River (Pg 4-46) Policy SFP-13: Floodplain and wetlands, Grays River (Pg 4-36, 4-40)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Low to Medium
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Review Adequacy of Existing Wetland Protection Ordinances for Protecting Hydrological Functions	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Inventory existing ordinances (e.g., floodplain, shoreline master program, subdivision, grade and fill, critical areas, etc.) that address protection of wetland hydrological functions• Review ordinance provisions for adequacy, using best available science (BAS), Salmon Recovery and Watershed Plan guidance, model ordinances/regulations (e.g., Department of Ecology and Department of Community, Trade and Economic Development documents), and other technical guidance documents. This review should include evaluation of the following:<ul style="list-style-type: none">◦ Inclusion of hydrological functions in site-specific assessments;◦ Inclusion of hydrological functions in wetland protection hierarchy; and◦ Strengthening of mitigation ratios for selected areas that offer significant hydrological functions or other fish habitat benefits• Identify gaps in existing protection mechanisms and provisions, along with BMP’s and strategies for addressing gaps• If gaps exist, initiate ordinance update process (See Task 2)	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; coordination meetings; contractor costs; project oversight and administration; etc.	
Funding Source(s)	Varies depending on entity. Grants from existing state & federal programs; legislative appropriations; state, county, city general fund revenues; county/city development fees; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	Administrative approvals; budget approvals, etc.	
Other	TBD	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct review of ordinances; the level of support for ordinance updates may affect project success and outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 2	Draft, Adopt and Implement Ordinance Updates; Monitor and Report Results	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> Conduct public outreach and participation process as needed for ordinance updates (e.g., committees, workgroups, workshops, etc.) Using best available science (BAS), Salmon Recovery and Watershed Plan guidance, model ordinances/regulations, and other technical guidance documents, develop updated ordinance provisions to address the considerations discussed in Task 1 Implement updated ordinance provisions Monitor and Report results 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; committee/workgroup meetings; advertising; enforcement; communications; reporting; etc.	
Funding Source(s)	Varies depending on entity. Grants from existing state & federal programs; legislative appropriations; state, county, city general fund revenues; county/city development fees; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; vehicles; etc.	
Agreements, Ordinances, Permits & Approvals	Administrative and budget approvals needed for ordinance updates; updates may require compliance with SEPA and/or NEPA; compliance with open meetings law requirements may be required; approval by funding or regulatory entities may be needed; various permit processes may be involved during implementation; etc.	
Other	TBD	
Constraints and Uncertainties		
Availability of funding may limit ability to update ordinances; the level of public support for ordinance updates may affect project success and outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	
General Comments		

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #929 AND
SUBACTIONS #929E, #929F, AND #929G
INVENTORY, PROTECT AND RESTORE WETLAND COMPLEXES**

Action Summary ¹	
Lead Partner(s)	Lewis County (Lacamas, Olequa, and Mill Creek Drainages; Lower Cowlitz River Subbasin) Cowlitz County (Lower Cowlitz River and Coweeman River Subbasins)
Oversight Responsibilities	Lewis County Cowlitz County
Coordinating Partner(s)	Planning Unit, Ecology, Cities, Others
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input checked="" type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #929: Wetlands inventories and ordinances: assess and protect hydrologic functions, consider strengthening mitigation ratios (See Section 4.5.4).
	<p>Subaction #929E: Perform an inventory of the wetland complexes in the Lacamas Creek, Olequa Creek and Mill Creek drainages. These wetland areas should be a high priority in the County's management of wetlands, as they are the most likely to impact tributary stream flows. The County should develop a strategy to protect these wetlands, and restore hydrologic functions where needed. Pg 4-51 Pg 4-33</p> <p>Subaction #929F: Take steps similar to those listed above, with regard to protecting wetlands along the mainstem Lower Cowlitz River. Pg 4-51</p> <p>Subaction #929G: Perform an inventory of the wetland complexes in the Coweeman River subbasin. These wetland areas should be a high priority in the County's management of wetlands. Pg 4-46</p>
Plan Background & Context	There are a variety of different wetland types in WRIAs 25 and 26, and different wetlands offer different benefits in terms of hydrology and habitat. The hydrologic functions of most wetlands in the subbasins have not been studied in detail. Those wetlands that are associated with streams and floodplains can help to moderate peak flows. However, the amount of attenuation provided by restoration of a wetland is not always significant relative to the flow rates that occur. There could also be some limited benefit to low flow periods, since water from high flow events is stored and then released over a period of several weeks. Wetlands associated with streams and floodplains occur throughout the many subbasins in WRIAs 25 and 26. However, the most hydrologically significant wetlands are located along the mainstem rivers, and especially in low-lying terrain near the mouths of these rivers.

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

	<p>As with floodplain preservation and restoration, there are benefits to restoring and preserving wetlands for benefit of fish habitat in general, apart from their effects on flow rates. County policies offer the best tools for wetland management in WRIAs 25 and 26. Wetland ordinances can be modified to include hydrologic functions in the protection hierarchy. Prohibitions on development can be enacted for wetlands with strong hydrologic functions. Where development will reduce or eliminate wetlands, mitigation ratios can be increased. Pg 4-33</p> <p>Lewis County should perform an inventory of the wetland complexes in the Lacamas Creek, Olequa Creek, and Mill Creek drainages. These wetland areas should be a high priority in the County's management of wetlands, as they are the most likely to impact tributary stream flows. The County should develop a strategy to protect these wetlands, and restore hydrologic functions where needed. Pg 4-51</p> <p>Lewis and Cowlitz Counties should take steps similar to those listed above, with regard to protecting wetlands along the mainstem Lower Cowlitz River. Within authorities, Lewis and Cowlitz Counties should partner with the State of Washington and local cities to identify and pursue opportunities for floodplain restoration projects to benefit flows and fish habitat. Project implementation should be subject to local input, cost-benefit analysis, and availability of funding. If these factors are favorable, projects should be carried out. Pg 4-51</p> <p>Above approximately RM 4 up to RM 7.5 on the Coweeman River there is good potential for floodplain and wetland restoration projects because of the unconfined channel and wetland habitat present in this area. Cowlitz County should perform an inventory of the wetland complexes in the Coweeman River subbasin. These wetland areas should be a high priority in the County's management of wetlands. Pg 4-46</p>
Relationship to Other Actions and Coordination Needs	<p>These Actions are designed to work in coordination with a variety of Actions addressing protection and restoration of instream flows, including adoption of restrictions on issuance of new water rights in rule (e.g., water right reservations, instream flows, closures, etc.) per Action #917, and conservation activities per Action #912. This Action specifically addresses the inventory and protection of wetlands in basins identified as a high priority for stream flow protection. Similar and supporting land use Actions address stormwater management (#923), forest practices (#921), and floodplain protection (#922). Establishing and maintaining stream flow gauges under Action #916 and implementation of a target stream flow program per Action #919 will provide data and information necessary to evaluate the short and long-term effectiveness of wetland protection programs.</p>
Expected Outcomes	<p>Completion of an inventory of the wetland complexes in the Lacamas Creek, Olequa Creek, Mill Creek, Lower Cowlitz and Coweeman River drainages. Development and implementation of management strategies to protect and restore hydrological functions of inventoried wetlands.</p>
Is the Action Fully Addressed by the Tasks Below?	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>

Supporting Strategies, Policies & Recommendations	Policy SFP-1: Flow Monitoring (Pg 4-10) Policy SFP-1: Stream Gages – Various Rivers (Pg 4-37, 4-41, 4-47, and 4-52) Policy SFP-1: Target Flows – Olequa Creek & Coweeman River (Pg G-3, G-4, G-7, G-8) Policy SFP-3: Water Conservation (Pg 4-24) Policy SFP-9: Forest Practices (Pg 4-29) Policy SFP-10: Stormwater Management (Pg 4-31) Policy SFP-12: Floodplain Management (Pg 4-32) Policy SFP-13: Wetlands Management (Pg 4-33) Policy SFP-13: Wetlands - Lower Cowlitz Tributaries (Pg 4-51) Policy SFP-13: Wetlands - Mainstem Cowlitz River (Pg 4-51) Policy SFP-13: Wetlands – Floodplain and Wetlands Management Coweeman River (Pg 4-46)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	Low to Medium
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Pre-project Planning	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> Identify geographical scope of project Identify funding sources Complete grant application and submit to funding source (if grant source is pursued) Secure funds Develop detailed scope of work Prepare RFP/hire contractor (if needed) Coordinate with existing service providers and affected jurisdictions Possible MOU/MOA between jurisdictions 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; coordination meetings; public outreach; advertising; project oversight and administration; etc.	
Funding Source(s)	Potential sources include: water rates and hookup charges in affected service area; grants from existing state & federal programs; legislative appropriations; congressional appropriations; state, county, city general fund revenues; Phase 4 implementation grants; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; etc.	
Other		
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	Not Applicable	
Describe O&M Tasks	Not Applicable	

Task 2	Complete Wetland Inventory and Assessment	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Coordinate with affected entities• Compile existing information (e.g., reports, maps, studies, plans, etc.)• Conduct additional monitoring and assessment as necessary• Develop draft report• Review and approval of draft report and products• Revisions to draft report and products• Approval of final products• Publish report and maps	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; consulting services (if needed); data collection; modeling/data analysis and assessment; coordination meetings; public outreach; project administration; etc.	
Funding Source(s)	Same as Task 1	
Logistical Needs	Meeting rooms; communications; travel; computers; modeling software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	If multiple jurisdictions are involved, agreements (or MOUs) may be needed to define roles, responsibilities, and coordination functions; review and approval of draft and final reports may be needed; contracts between proponents and consultants may be needed; data sharing agreements may be needed; permits may be needed for associated field work; etc.	
Other	TBD	
Constraints and Uncertainties		
Availability of funding may limit ability to conduct analyses; data, information and modeling limitations may affect project results and outcomes; the level of coordination and cooperation between entities may affect project success and outcomes; etc		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Task 3	Develop and Implement Wetland Protection and Restoration Strategies	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Coordinate with private, local, state and/or federal entities with wetland expertise • Conduct public outreach and participation process as needed for ordinance and/or program updates (e.g., local entities, committees, workgroups, workshops, etc.) • Using Best Available Science, wetland inventory and assessment results (Task 2), and Salmon Recovery Plan and Watershed Plan guidance, develop management strategies for protecting and restoring wetland functions • Conduct cost-benefit analysis • Within authorities, adopt updated ordinance and/or program provisions • Implement updated ordinance and/or program provisions • Monitor and report results 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; committee/workgroup meetings; advertising; enforcement; communications; reporting; etc.	
Funding Source(s)	Varies depending on entity. Grants from existing state & federal programs; legislative appropriations; state, county, city general fund revenues; county/city development fees; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; vehicles; etc.	
Agreements, Ordinances, Permits & Approvals	Administrative and budget approvals needed for ordinance/program updates; updates may require compliance with SEPA and/or NEPA; compliance with open meetings law requirements may be required; approval by funding or regulatory entities may be needed; various permit processes may be involved during implementation; etc.	
Constraints and Uncertainties		
Availability of funding may limit ability to update ordinances and/or programs; the level of public support for ordinance and/or program updates may affect project success and outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	
General Comments		

Appendix G
Grays-Elochoman and Cowlitz Watersheds
Surface Water Quality Action Schedules

WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #930 AND SUBACTION #930A
DEVELOP WATER BODY CLEANUP PLANS (TMDLs)

Action Summary¹	
Lead Partner(s)	Ecology
Oversight Responsibilities	Ecology, EPA
Coordinating Partner(s)	Local Governments, Conservation Districts, and Other Interested Parties
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input type="checkbox"/> New <input checked="" type="checkbox"/> Existing/Ongoing <input type="checkbox"/> Revised
Table Description	Action #930: Develop water body cleanup plans (TMDLs) for subbasins, in prioritized sequence as indicated in Watershed Management Plan. Carry out necessary modeling, reporting, public involvement, and waste load allocations (See Section 5.3.2).
	Subaction#930A: The Planning Unit recommends that Ecology develop TMDLs according to the priority list shown in Table 5-2. These priorities should be re-visited at such time as the 2002/2004 303(d) list is approved by Ecology and EPA. Pg 5-5
Plan Background & Context	<p>The WRIAs 25 and 26 Planning Unit has identified protection and improvement of surface water quality as an important objective linked to the Watershed Management Plan. At the same time, the Planning Unit recognizes that programs already exist to protect and improve water quality, and it is not desirable to duplicate these programs. The primary vehicle for achieving compliance with State criteria for surface water quality is the Washington State Department of Ecology's (Ecology) Total Maximum Daily Load (TMDL) program, also known as Water Cleanup Plans. Pg 5-1</p> <p>The Planning Unit determined that it would be valuable to provide guidance to Ecology in terms of prioritizing activities with regard to water cleanup plans. Local input at the watershed scale can help ensure that limited water quality funding is allocated in an effective and efficient manner. Pg 5-1</p> <p>A sub-group of the Planning Unit was assembled to propose and apply criteria to prioritize impaired waterbody segments, and then use the findings from this analysis as the basis for recommending cleanup plans. As an initial step in this process, the sub-group developed six criteria to evaluate and prioritize cleanup plans in water quality impaired subbasins in the planning area. The criteria were based on the watershed planning goals and objectives of the planning unit, as well as issues associated with the practicality of cleanup success, anticipated development, and</p>

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

	adequate data to substantiate prioritization (See Section 5.3.2). These criteria were then applied to the subbasins in WRIAs 25 and 26 and used to develop recommendations for prioritization of cleanup plans (Table 5-3). Pg 5-11
Relationship to Other Actions and Coordination Needs	This Action is designed to work in coordination with other Actions relating to protection and improvement to surface water quality. Expansion of water quality monitoring activities per Action #931 and its related Subactions will provide information and data necessary for development and implementation of TMDLs.
Expected Outcomes	Development and implementation of TMDL's in accordance with the priorities established by the Planning Unit for impaired watercourses within WRIAs 25 and 26.
Is the Action Fully Addressed by the Tasks Below?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy SWQ-1: TMDL's (Pg 5-1, 5-5) Policy SWQ-1: Monitoring of Surface Water Quality (Pg 5-7)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	High
Identify Tasks that have not been Fully Funded	TBD

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Integrate Watershed Plan TMDL Priorities into Ecology’s Comprehensive Watershed Approach for Development of TMDLs	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Coordinate with Planning Unit as additional 303(d) listings occur and assist with prioritization in accordance with Ecology criteria, and the criteria identified in Section 5.3.2 of the Watershed Plan• Consult Table 5-2 (as updated) to identify TMDL priorities in WRIAs 25/ 26• Integrate Watershed Plan TMDL priority recommendations into Ecology’s comprehensive watershed approach for development of TMDLs	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; Planning Unit coordination meetings; etc.	
Funding Source(s)	Legislative appropriations; state general fund revenues; Phase 4 implementation grants (Planning Unit); etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	Approval of revised TMDL priorities by the Planning Unit may be needed.	
Other		
Constraints and Uncertainties		
Agency budget and workload priorities may affect ability to integrate Planning Unit priorities into Ecology’s TMDL work schedule; Availability of funding may limit the number and sequence of TMDLs that can be addressed.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Supporting Tasks		
Task 2	Develop and Implement TMDLs	
Schedule		
Start Date	Lower Cowlitz River: TBD Abernathy/Germany Creek: TBD Longview Ditches: TBD Elochoman River: TBD Grays River: TBD Coweeman River: TBD Upper Cowlitz River: TBD Toutle River: TBD Other: TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none"> • Form watershed advisory group • Conduct technical analyses and studies • Develop summary implementation strategy • Submit SIS to EPA for approval • Develop detailed implementation plan (DIP) and strategy • Implement TMDL (multiple entities involved) • Monitor results • Adaptively manage 	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; advisory group meetings; field studies and analyses; report writing; etc.	
Funding Source(s)	Legislative appropriations; state general fund revenues; Phase 4 implementation grants (Planning Unit); federal grants and pass-through funding; etc.	
Logistical Needs	Meeting rooms; communications; travel; computers and software; printers; supplies; field equipment (e.g., water quality meters and devices, etc).	
Agreements, Ordinances, Permits & Approvals	Approval of revised TMDL priorities by the Planning Unit may be needed.	
Constraints and Uncertainties		
Agency budget and workload priorities may affect ability to integrate Planning Unit priorities into Ecology's TMDL work schedule; availability of funding may limit the number and sequence of TMDLs that can be addressed; success of implementation will depend upon participation and cooperation by various local, state and federal entities.		
Operation and Maintenance		
Est. Annual Cost	TBD	
Describe O&M Tasks	TBD	
General Comments		

**WRIA 25/26 DETAILED IMPLEMENTATION PLAN
ACTION SCHEDULE: ACTION #931 AND SUBACTIONS
#931A, #931A-1, #931A-2 AND #931A-3
EXPAND WATER QUALITY MONITORING ACTIVITIES**

Action Summary¹	
Lead Partner(s)	Shared Efforts by State, Local, and Federal Agencies, Planning Unit, Ecology
Oversight Responsibilities	Planning Unit, Ecology, LCFRB
Coordinating Partner(s)	TBD
Action Type	Requirement <input type="checkbox"/> Recommendation <input checked="" type="checkbox"/>
Is this a New, Existing or Revised Activity?	<input type="checkbox"/> New <input type="checkbox"/> Existing/Ongoing <input checked="" type="checkbox"/> Revised
Table Description	Action #931: Within authorities and as staffing and funding allow, expand water quality monitoring activities to improve understanding of status and trends. Install monitoring equipment; collect and analyze samples; manage and analyze data; report results (See Section 5.4.2).
	<p>Subaction #931A-1: The Planning Unit recommends that monitoring of surface water quality in WRIAs 25 and 26 be enhanced to improve information on baseline conditions and long-term trends. Pg 5-7</p> <p>Subaction #931A-2: Secure funds to implement the Water Quality Analysis Plan (WQAP) outlined in Section 5.4.2 (Barber, 2004 Technical Memorandum #8). Pg 5-7</p> <p>Subaction #931A-3: Implement the WQAP outlined in Section 5.4.2 (Barber, 2004 Technical Memorandum #8). Pg 5-7</p>
Plan Background & Context	As part of its assessment of water quality information, the Planning Unit reviewed existing water quality monitoring activities being conducted by local, State, and federal agencies (Appendix E of the Watershed Plan). From this review, it was apparent that water quality monitoring activities currently in place are designed to meet specific needs of various programs but are not comprehensive in terms of either the network of streams or the types of parameters monitored. In the absence of a comprehensive monitoring framework at the regional scale, it is difficult to identify impaired water bodies, characterize status and trends in surface water quality, or develop effective approaches to improving water quality. The Planning Unit therefore developed a recommended Water Quality Analysis Plan (WQAP) for improving water quality data collected. Full documentation of this strategy is presented in a Technical Memorandum No. 8 (Task 7) Surface Water Quality Monitoring Strategy for WRIAs 25 and 26 (Barber, 2004). The proposed WQAP would monitor core water quality information related to flow, temperature, nutrients, and several other parameters at as many as 28 different stream segments in WRIAs 25 and 26.

¹ Note: Page and section references in this document refer to the adopted "Grays-Elochoman and Cowlitz Watershed Management Plan" (LCFRB, 2006)

Relationship to Other Actions and Coordination Needs	This Action is designed to work in coordination with Actions relating to protection and improvement to surface water quality. Expansion of water quality monitoring activities will provide information and data necessary for development and implementation of TMDLs, as well as help determine the effectiveness of implemented cleanup activities per Action #930. Integration of USFS and DNR monitoring efforts with the LCFRB Research, Monitoring and Evaluation Program per Action #921 will establish the data sharing process necessary for assessing the effects of forest practices on water quality, per Action #931.
Expected Outcomes	Secure funding and implement the WQAP outlined in Section 5.4.2 (Barber, 2004 Technical Memorandum – Technical Memorandum No. 8 (Task 7) Surface Water Quality Monitoring Strategy for WRIAs 25 and 26).
Is the Action Fully Addressed by the Tasks Below?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Supporting Strategies, Policies & Recommendations	Policy SWQ-1: TMDL's (Pg 5-1, 5-5) Policy SWQ-1: Monitoring of Surface Water Quality (Pg 5-7)
Is the Activity Fully Funded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Financial/Economic Costs ²	High (long-term)
Identify Tasks that have not been Fully Funded	Tasks 1, 2 and 3

² Preliminary, generalized estimates of financial or economic cost to the community or water user involved. High: greater than \$500,000; Medium: \$50,000 to \$500,000; Low: less than \$50,000. Total cost, whether up-front or over a period of time up to ten years.

Supporting Tasks		
Task 1	Secure Funding and Consulting Services (Planning Unit Lead)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Identify funding sources• Secure funds• Prepare RFP/hire contractor	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Staff time; coordination meetings; public outreach; advertising; project oversight and administration; etc.	
Funding Source(s)	Legislative appropriations; Phase 4, Centennial or other grants from Ecology; federal water quality grants; etc.	
Logistical Needs	Staff time; meeting rooms; communications; advertising; computers; printers; supplies; etc.	
Agreements, Ordinances, Permits & Approvals	MOU or MOA between cooperating entities may be needed (Ecology lead); contracts between LCFRB and consultants may be needed; data sharing agreements may be needed; etc.	
Other		
Constraints and Uncertainties		
Availability of funding may limit ability to initiate the project; the level of coordination and cooperation between entities may affect project success and outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Supporting Tasks		
Task 2	Update WQAP (Consultant in Coordination with Planning Unit)	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Coordinate with LCFRB Research, Monitoring and Evaluation (RME) work group, Ecology and entities conducting monitoring• Inventory existing monitoring efforts• Update WQAP based on current 303d listings and inventory of current monitoring efforts• Based on updated WQAP, develop implementation plan and schedule• If needed, develop MOU/MOA for cooperating entities• Publish updated WQAP for inclusion in the Detailed Implementation Plan	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: TBD	
Key Cost Drivers	Consultant fees; staff time; coordination meetings; public outreach; advertising; project oversight and administration; etc.	
Funding Source(s)	See Task 1	
Logistical Needs	See Task 1	
Agreements, Ordinances, Permits & Approvals	Approval of updated WQAP by Planning Unit will be needed; MOU/MOA between cooperating entities may be needed (Ecology lead); contracts between LCFRB and consultants may be needed; data sharing agreements may be needed; etc.	
Other		
Constraints and Uncertainties		
Availability of funding may limit ability to initiate the project; the level of coordination and cooperation between entities may affect project success and outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	TBD	
Describe O&M Tasks	TBD	

Supporting Tasks		
Task 3	Implement WQAP and Publish Results	
Schedule		
Start Date	TBD	
Planned Completion	TBD	
Actual Completion	TBD	
Benchmarks/ Milestones	<ul style="list-style-type: none">• Implement WQAP (See updated WQAP)• Ecology to promote and coordinate cooperative monitoring and data sharing among agencies, including State Department of Natural Resources and U.S. Forest Service (See Action #921)• Publish results annually	
Resource Needs		
Costs	Period Beginning: TBD	Amount: TBD
	Total: Upfront equipment costs of the WQAP are \$65,650. The annual cost is \$154,650. The total first year cost for the WQAP is \$214,600. (Note: these cost estimates need to be updated based on inflation and results of WQAP update)	
Key Cost Drivers	Consulting services; staff time (estimated one-half FTE) for program coordination; field monitoring; equipment acquisition	
Funding Source(s)	Legislative appropriations; Phase 4, Centennial or other grants from Ecology; federal water quality grants; public water system; state, county, city general fund revenues; county/city development fees; etc.	
Logistical Needs	Monitoring equipment; vehicles; computers, software and printers; communications; etc.	
Agreements, Ordinances, Permits & Approvals	MOU/MOA between cooperating entities may be needed (Ecology lead); contracts between LCFRB and consultants may be needed; data sharing agreements may be needed; etc.	
Other		
Constraints and Uncertainties		
Availability of funding may limit ability to initiate WQAP implementation; the level of coordination and cooperation between entities may affect project success and outcomes; etc.		
Operation and Maintenance		
Estimated Annual Cost	\$154,650 (Note: this cost estimate needs to be updated based on inflation and results of WQAP update)	
Describe O&M Tasks	See WQAP	
General Comments		