Table E-1
Asotin Creek Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L) / Support (S)	Actions
Cities/ Towns: Asotin	**Water Quantity Management**		
	R	**L**	Characterize ground water conditions to determine if additional withdrawals from ground water are sustainable.
	R	**L**	Seek additional water rights to develop additional water supply from ground water to provide future needs of City of Asotin, if study determines withdrawal is sustainable
Conservation District: Asotin County Conservation District	**Water Quantity Management**		
	R	**L**	Improve irrigation efficiencies, including conveyance and application methods.
	R	**L**	Upgrade diversions to include meters where required
	R	**S**	Continue instream flow monitoring through permanent and seasonal gauges on Asotin Creek.
	Water Quality Management		
	R	**L**	Identify sources and implement the following strategies to reduce fecal coliform levels on Asotin Creek: 1. Manure management, 2. develop alternative water sources for existing surface diversions for irrigated agriculture and stockwater
	R	**L**	Implement the following strategies to reduce TSS levels at the mouth of Asotin Creek: 1. direct seed, 2. upland management BMPs, 3. riparian improvement, 4. CREP/CRP, 5. grassed waterways, 6. sediment basins, 7. weed control, 8. grazing management, 9. cross fencing, 10. alternative water sources, 11. manure management (livestock operations)
	R	**L**	Implement strategies to reduce water temperatures
	R	**L**	Establish and promote the following BMPs for erosion control for pasture and rangeland, cropland, and forest land: 1. maintain existing CRP acres (including exploring alternative funding), 2. conservation tillage, 3. increase grass waterways, 4. buffers, 5. strip cropping, 6. improve riparian grazing
	R	**S**	Design and construct sewer collection and treatment facility for Anatone
	Aquatic Habitat Enhancement Management		
	R	**L**	Implement aquatic habitat strategies; 1. enhance restoration, 2. protection and restoration of Asotin Creek, 3. Asotin County Fish Screens, 5. Upland Sediment Reduction, 6. LWD replenishment and replacement
	R	**L**	Implement passive restoration projects, CREP, conservation easements, and upland BMP's designed to reduce sediment delivery and increase filtration
	R	**S**	Remove/modify fish passage obstruction
	R	**S**	Conduct inventory and analysis of other fish passage barriers, and prioritize for removal/modification
	R	**S**	Evaluate fish screens. Replace inadequate screens
	R	**S**	Work with private and public landowners to maintain and enhance pristine and other areas of the headwaters by encouraging applications of BMP's
	R	**L**	Restore areas of degraded riparian vegetation on private and public land through activities such as CREP and CRP participation and site-specific BMP's with an early emphasis on the most degraded areas

Table E-1
Asotin Creek Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L) / Support (S)	Actions
Counties: Asotin County	**Regulatory Actions**		
	R	L	Implement/enforce federal, state and local land use regulations to protect critical areas and pristine areas of the implementation area Review and update, as needed, best-available-science-based riparian buffer zones and critical areas regulations
	Water Quantity Management		
	R	L	Design and construct sewer collection and treatment facility for Anatone.
	R	L	Identify sources and implement the following strategies to reduce fecal coliform levels on Asotin Creek: 1. upgrade or connect septic to sewer, 2. explore opportunities for regionalization of wastewater treatment plants, and 3. connect fringe rural areas to urban sewer system
	Water Quality Management		
	R	L	Adopt the Eastern Washington Stormwater manual and implement the following strategies to improve stormwater management and treatment and increase groundwater infiltration: 1. sediment basins 2. infiltration trenches 3. swales/wetlands 4. rural/urban drainage ditch upgrades and treatment Identify and designate aquifer recharge areas Protect known aquifer recharge areas through critical area ordinances
Ecology	**Water Quantity Management**		
	O	L	Continue instream flow monitoring through permanent and seasonal gauges in Asotin Creek IA for the purpose of gathering short term flow data to assist the Planning Unit in additional instream flow work
	O	L	Continue to require the installation and use of water meters in accordance with RCW 90.03.360 (2) an WAC 173-173-040
	O	L	Work with Planning Unit during Phase IV Implementation on regulatory alternatives that would address out of basin changes and transfers of water consistent with current water law, case laws and rules/regulations
	R	S	Improve irrigation efficiencies, including conveyance and application methods

Table E-1
Asotin Creek Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L) / Support (S)	Actions
Ecology, *cont*.	**Water Quality Management**		
	R	**S**	Identify sources and implement the following strategies to reduce fecal coliform levels on Asotin Creek: 1. install BMP's for livestock manure management, 2. upgrade or connect septic to sewer, 3. explore opportunities for regionalization of wastewater treatment plant, 4. connect fringe rural areas to urban sewer systems
	R	**S**	Provide technical assistance in the design and construction of the sewer collection and treatment facility for Anatone
	R	**S**	Implement strategies to reduce water temperatures in Asotin Creek
	Regulatory Actions		
	O	**L**	Establish minimum instream flows in rule/regulation for Asotin Creek and appropriate tributaries
	O	**L**	Establish administrative stream closures in rule/regulation, to include all appropriate Asotin Creek tributaries (timeframe to be determined)
NRCS	**Water Quality Management**		
	R	**S**	Establish and promote following BMP's for erosion control for pasture and rangeland, cropland and forest land: 1) Maintain existing CRP acres, 2). Conservation tillage, 3) increase grass waterways, 4) buffers, 5) strip cropping, 6) improve riparian grazing management
	R	**S**	Work with individual landowners to review pesticide and fertilizer use; and to implement the following best management practices to limit water quality impacts: 1) restore riparian areas, 2) urban/rural education program, 3) conservation tillage
USGS	**Water Quantity Management**		
	R	**S**	Continue instream flow monitoring through permanent and seasonal gauges on Asotin Creek
WSU Extension	**Water Quality Management**		
	R	**S**	Work with individual landowners to review pesticide and fertilizer use; and to implement the following best management practices to limit water quality impacts: 1) restore riparian areas, 2) urban/rural education program, 3) conservation tillage
	R	**S**	Establish and promote the following BMPs for erosion control for pasture and rangeland, cropland, and forest land: 1) maintain existing CRP acres (alternative funding) 2) conservation tillage, 3) increase grassed waterways, 4) buffers, 5) strip cropping, 6) improve riparian grazing management

Table E-1
Asotin Creek Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L) / Support (S)	Actions
WDFW	**Water Quality Management**		
	R	S	Establish and promote BMP's for erosion control for pasture and rangeland, cropland and forest land
	Aquatic Habitat Enhancement Management		
	R	S	Implement aquatic habitat restoration actions listed in table 6-2
	R	S	Implement passive restoration project actions listed in table 6-2
	R	S	Provide technical assistance and support to remove/modify fish passage obstructions, including fish screens
	R	S	Provide technical assistance for the inventory and analysis of other fish passage barriers, and help prioritize for removal
	O	L	Evaluate irrigation on WDFW land where diversions have potential impact on instream flows and will look for opportunities to place water into trust. This will be accomplished as funding and resources allow.
	Regulatory Actions		
	R	S	Implement/Enforce federal, state, and local landuse regulations to protect critical and pristine areas in the IA
	R	S	Review and update, as needed, best available science-based riparian buffer zones and critical area regulations
Nez Perce Tribe	**Aquatic Habitat Enhancement Management**		
	R	S	Implement aquatic habitat restoration actions listed in table 6-2
	R	S	Implement passive restoration project actions listed in table 6-2
	R	S	Restore area of degraded riparian vegetation on private and public land through activities such as CREP and CRP participation and site-specific BMP's with an early emphasis on the most degraded areas
	R	S	Remove/modify fish passage obstruction
	R	S	Conduct inventory and analysis of other fish passage barriers, and prioritize for removal
USFS	**Water Quality Management**		
	R	S	Establish and promote the following BMP's for erosion control for pasture and rangeland, cropland, and forest land: 1) creation and maintenance of road ROWs, 2) increased vegetation grassed waterways, 3) buffers
	Aquatic Habitat Enhancement Management		
	R	S	Implement aquatic habitat and protection and restoration plans; including the following priority projects: 1) sediment reduction, 2) enhancement of habitat in riparian zones for ESA listed species, 3) control of noxious weeds, 4) planting of native vegetation, 5) school fire riparian recovery
	R	S	Work with public land and wildlife management agencies to maintain and enhance pristine and other areas, with specific focus on the post-school fire recover by applying BMP's
	R	S	Implement aquatic and passive restoration projects listed in table 6-2

Table E-2
Middle Snake River Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L) / Support (S)	Actions
Cities/ Towns: Clarkston	**Water Quantity Management**		
	R	**L - PUD**	Characterize ground water conditions to determine if additional withdrawals from ground water are sustainable
Conservation Districts: Asotin County, Palouse, Columbia and Pomeroy	**Water Quantity Management**		
	R	**S - All**	Continue instream flow monitoring through permanent and seasonal gauges
	R	**S - All**	Characterize ground water conditions to determine if additional withdrawals to replace some of the existing surface water withdrawals for irrigation is possible and sustainable
	R	**S - All**	Seek additional water rights to develop additional water supply from ground water to replace surface water withdrawals for irrigation if study determines withdrawals are sustainable
	Water Quality Management		
	R	**L - All**	Establish and promote the following BMP's for erosion control for pasture and rangeland, cropland, and forest land: 1) noxious weed control, 2) maintain existing CRP acres, 3) conservation tillage, 4) increase grassed waterways, 5) buffers, 6) strip cropping, 7) improve riparian grazing management
	Aquatic Habitat Enhancement Management		
	R	**S - All**	Implement aquatic habitat protection plans
	R	**L - All**	Implement passive restoration plans listed in Table 6-4
	R	**S - All**	Remove/modify fish passage obstruction
	R	**S - All**	Conduct inventory and analysis of other fish passage barriers, and prioritize for removal
	R	**L - All**	Evaluate fish screens on water diversions for adequacy. Replace inadequate screens if necessary
Ecology	**Water Quantity Management**		
	O	**L**	Continue instream flow monitoring through permanent and seasonal gauges for the purpose of gathering short term flow data to assist the Planning Unit in additional instream flow work
	R	**S**	Characterize ground water conditions to determine if additional withdrawals to replace some of existing surface water withdrawals for irrigation is possible and sustainable
	R	**S**	Seek additional water rights to develop additional water supply from ground water to replace surface water withdrawals for irrigation if study determines withdrawal is sustainable
	R	**S**	Characterize basalt groundwater sources, availability and sustainability near Snake River and below, where basalt is connected to Snake River

Table E-2
Middle Snake River Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L) / Support (S)	Actions
Ecology, *cont*.	**Water Quality Management**		
	R	**S**	Investigate sources and implement appropriate strategies to reduce fecal colifom levels on Alpowa Creek
	R	**S**	Continue water quality monitoring through permanent and seasonal gauges for temperature, fecal coliform, dissolved oxygen, sediment and TSS
	R	**S**	Work with individual landowners to review pesticide and fertilizer use; and to implement the following best management practices to limit water quality impacts: 1) restore riparian areas, 2) urban/rural education program, 3) conservation tillage
	Regulations		
	O	**L**	Establish administrative stream closure and/or instream flow where appropriate (time period to be determined)
WDFW	**Water Quality Management**		
	R	**S**	Establish and promote the following BMP's for erosion control for pasture and rangeland, cropland, and forest land: 1) noxious weed control, 2) maintain existing CRP acres, 3) conservation tillage, 4) increase grassed waterways, 5) buffers, 6) strip cropping, 7) improve riparian grazing management
	Aquatic Habitat Enhancement Management		
	R	**S**	Implement aquatic habitat protection plans, including list of prioritized projects
	R	**S**	Implement passive restoration projects, including CREP riparian buffers, conservation easements, land acquisition, and where appropriate, upland projects designed to reduce sediment delivery and increase filtration
	R	**S**	Provide technical assistance and support for the remove/modify fish passage obstruction
	R	**S**	Provide technical assistance and support for the analysis and inventory of other fish passage barriers, and prioritize for removal
	R	**S**	Restore areas of degraded riparian vegetation on private and public land through activities such as CREP, CRP participation and site-specific BMP's (e.g. placement of large woody debris, long-term recruitment from riparian planting, restricting livestock access, etc) with an early emphasis on the most degraded areas
	Regulatory Actions		
	R	**S**	Provide technical assistance to local governments to help implement/enforce federal, state and local land use regulation to protect critical and pristine areas of the IA
	R	**S**	Review and update, as needed, best available science-based riparian buffer zones and critical area regulations

Table E-2
Middle Snake River Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L) / Support (S)	Actions
Cities and Counties: Clarkston and Asotin	**Water Quality Management**		
	R	**L**	Implement the following strategies to improve stormwater management and treatment and increase groundwater infiltration: 1) implement rural road BMP's, 2) shaping/grading, 3) mowing vs. spraying
	R	**L**	Identify and designate aquifer recharge areas
	R	**L**	Protect known aquifer recharge areas through critical area ordinances
	Regulations		
	R	**L**	Implement/enforce federal, state and local land use regulations to protect critical and pristine areas of IA
	R	**L**	Review and update, as needed, best available science-based riparian buffer zones and critical area regulations
WSU Extension	**Water Quality Management**		
	R	**S**	Work with individual landowners to review pesticide and fertilizer use; and to implement the following best management practices to limit water quality impacts: 1) restore riparian areas, 2) urban/rural education program, 3) conservation tillage
	R	**S**	Establish and promote the following BMPs for erosion control for pasture and rangeland, cropland, and forest land: 1) noxious weed control 2) maintain existing CRP acres (including exploring alternative funding), 3) conservation tillage, 4) increase grassed waterways, 5) buffers, 6) strip cropping, 7) improve riparian grazing management
USGS	**Water Quantity Management**		
	R	**L**	Continue instream flow monitoring through permanent and seasonal gauges
	R	**L**	Characterize basalt groundwater sources, availability, and sustainability near Snake River and below, where basalt is connected to Snake River
	R	**S**	Sole source aquifer study
NRCS	**Water Quality Management**		
	R	**L**	Work with individual landowners to review pesticide and fertilizer use; and to implement the following best management practices to limit water quality impacts: 1) restore riparian areas, 2) urban/rural education program, 3) conservation tillage
	R	**S**	Establish and promote the following BMPs for erosion control for pasture and rangeland, cropland, and forest land: 1) noxious weed control 2) maintain existing CRP acres (including exploring alternative funding), 3) conservation tillage, 4) increase grassed waterways, 5) buffers, 6) strip cropping, 7) improve riparian grazing management

Table E-2 Middle Snake River Management Area Actions			
Implementation Organization	**Recommendation (R) / Obligation (O)**	**Lead (L) / Support (S)**	**Actions**
Nez Perce Tribe	**Aquatic Habitat Enhancement Management**		
	R	**S**	Implement aquatic habitat protection plans
WSDOT			
	R	**S**	Implement the following strategies to improve stormwater management and treatment and increase groundwater infiltration: 1. BMPs for road construction and maintenance 2. Shaping/grading during reconstruction 3. mowing vs. spraying
Counties: Asotin, Garfield and Whitman	**Water Quality Management**		
	R	**L**	Implement the following strategies to improve stormwater management and treatment and increase groundwater infiltration: 1. Implement rural road BMPs 2. Shaping/ grading 3. mowing vs. spraying
	R	**L**	Identify and designate aquifer recharge areas
	R	**L**	Protect known aquifer recharge areas through critical area ordinances

Table E-3
Pataha Creek Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L) / Support (S)	Actions
City: Pomeroy	**Water Quantity Management**		
	R	**L**	Characterize ground water conditions to determine if an additional withdrawals from ground water are sustainable
	R	**L**	Develop additional water supply from ground water to provide future needs for Pomeroy if study determines withdrawals are sustainable
Conservation District: Pomeroy and Columbia Conservation Districts	**Water Quantity Management**		
	R	**L**	Identify opportunities for irrigation efficiency
	R	**S**	Implement pilot project to encourage beaver activity for multi-purpose storage through dams, wetlands and water retention
	Water Quality Management		
	R	**L**	Implement the following strategies to reduce fecal coliform levels in Pataha Creek: 1) identify failing septic systems, 2) restore riparian buffers, 3) manage grazing in riparian areas
	R	**L**	Implement the following strategies to reduce TSS levels in Pataha Creek by reducing the sediment load entering the creek: 1) CRP, 2) conservation tillage, 3) increase grass waterways, 4) buffers, 5) strip cropping, 6) improve riparian grazing management
	R	**L**	Establish and promote the following BMP's for erosion control for pasture and rangeland, cropland and forest land: 1) conservation tillage, 2) increase grass waterways, 3) buffer strips, 4) strip cropping, 5) improve riparian grazing management
	Aquatic Habitat Enhancement Management		
	R	**S**	Conduct inventory and analysis of fish passage barriers
	R	**S**	Evaluate fish screens on water diversions and replace if necessary
	R	**S**	Restore areas of degraded riparian vegetation on private and public land through activities like CREP, CRP and site specific BMP's
	R	**S**	Restore areas of degraded riparian vegetation on private and public land through conservation easements with an early emphasis on the most degraded areas
	R	**L**	Work with private, federal and state landowners to use BMP's to maintain and enhance pristine areas of the headwaters
Ecology	**Water Quantity Management**		
	O	**S**	Continue instream flow monitoring through permanent and seasonal gauges on Pataha Creek for the purpose of gathering short term data to assist the Planning Unit in additional instream flow work and flow management purposes
	R	**S**	Characterize ground water conditions to determine if an additional withdrawal from ground water are sustainable
	R	**S**	Develop additional water supply from ground water to provide future needs for Pomeroy if study determines withdrawals are sustainable
	R	**S**	Characterize ground water conditions to determine if additional withdrawals to replace some of the existing surface water withdrawals for irrigation is possible and sustainable
	R	**S**	Seek additional water rights to develop additional water supply from ground water to replace surface water withdrawals for irrigation if study determines withdrawal is sustainable

Table E-3
Pataha Creek Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L) / Support (S)	Actions
Ecology, *cont.*	**Water Quality Management**		
	R	S	Implement the following strategies to reduce fecal coliform levels in Pataha Creek: 1) identify failing septic systems, 2) restore riparian buffers, 3) manage grazing in riparian areas
	R	S	Implement strategies to reduce water temperature: 1) riparian enhancement
	R	S	Work with landowners to review pesticide and fertilizer use; and to implement best management practices to limit water quality impacts: 1) restore riparian areas, 2) urban/rural education, 3) conservation tillage
WDFW	**Water Quality Management**		
	R	S	Establish and promote the following BMP's for erosion control for pasture and rangeland, cropland and forest land: 1) conservation tillage, 2) increase grass waterways, 3) buffer strips, 4) strip cropping, 5) improve riparian grazing management
	R	S	Provide technical assistance for feasibility of stream re-engineering to improve flows and water quality.
	Aquatic Habitat Enhancement Management		
	R	S	Provide technical assistance and support for the removal of fish passage obstructions
	R	S	Provide technical assistance for evaluating diversion sites and permitting fish screens to ensure that they meet State and Federal guidelines
	R	S	Restore areas of degraded riparian vegetation on private and public land through activities like CREP, CRP and site specific BMP's
	R	S	Restore areas of degraded riparian vegetation on private and public land through conservation easements with an early emphasis on the most degraded areas
	R	S	Work with private, federal and state landowners to use BMP's to maintain and enhance pristine areas of the headwaters
Garfield County	**Water Quality Management**		
	R	L	Implement the following strategies to reduce fecal coliform levels in Pataha Creek: 1) identify failing septic systems, 2) restore riparian buffers, 3) manage grazing in riparian areas
	R	L	Update, implement/enforce federal, state and local land use regulations to protect critical and pristine areas of the IA

Table E-3
Pataha Creek Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L) / Support (S)	Actions
NRCS	**Water Quality Management**		
	R	**L**	Work with landowners to review pesticide and fertilizer use; and to implement best management practices to limit water quality impacts: 1) restore riparian areas, 2) urban/rural education, 3) conservation tillage
	R	**L**	Establish and promote the following BMP's for erosion control for pasture and rangeland, cropland and forest land: 1) conservation tillage, 2) increase grass waterways, 3) buffer strips, 4) strip cropping, 5) improve riparian grazing management
USFS	**Water Quality Management**		
	R	**L**	Work with private, federal and state landowners to use BMP's to maintain and enhance pristine areas of the headwaters
USGS	**Water Quantity Management**		
	R	**L**	Continue/expand instream flow monitoring through permanent and seasonal gauges on Pataha Creek
WSDOT	**Water Quantity Management**		
	R	**L**	Remove/modify fish passage obstructions

Table E-4
Tucannon River Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L)/ Support (S)	Actions
USGS	**Water Quantity Management**		
	R	**L**	Implement instream flow monitoring through permanent and seasonal gauges on Tucannon River
Conservation District: Columbia Conservation District	**Water Quantity Management**		
	R	**S**	Characterize ground water conditions to determine if additional withdrawals from ground water are sustainable
	R	**S**	Replace surface water withdrawals for agriculture irrigation with ground water sources if study determines withdrawal is sustainable and practicable; source substitution could be implemented during low flow periods or permanently where feasible
	R	**L**	Explore opportunities for water right leases and/or acquisitions through the WDOE Trust Water Program and/or water banking
	Water Quality Management		
	R	**L**	Conduct a study to current condition and sources of water quality: 1) determine if the inputs of Pataha Creek are impacting water quality in the Tucannon, 2) identify sources of fecal coliform, 3) determining the natural temperature ranges for the Tucannon, 4) collect data in accordance with Ecology standards for use in developing state-required TMDL's
	R	**S**	Implement the following strategies to reduce fecal coliform levels at mouth of Tucannon: 1) septic system repair and/or upgrade, 2) livestock BMP's, 3) regulation of point sources, 4) restore riparian buffers, 5) manage grazing in riparian areas
	R	**L**	Implement the following strategies to reduce TSS levels by reducing the sediment load entering the Tucannon: 1) conservation tillage, 2) grassed waterways, 3) sediment basins, 4) improved riparian function, 5) reduce erosion from roads
	R	**L**	Identify opportunities for funding for landowners to reduce sediment from roads
	R	**L**	Continue on-going strategies to reduce water temperatures thru BMP's
	R	**L**	Establish and promote the following BMP's for erosion control for pasture and rangeland, cropland, and forest land: 1) creation and maintenance of county ROW's, 2) agricultural BMP's to buffer fields next to roads, 3) conservation tillage, 4) increased grassed waterways, 5) buffers, 6) strip cropping
	Aquatic Habitat Enhancement Management		
	R	**L**	Implement table 6-7 aquatic habitat protection and restoration plans
	R	**L**	Restore areas of degraded riparian vegetation on private land
	R	**S**	Develop pilot project for conservation easements
	R	**S**	Remove/modify fish passage obstructions
	R	**L**	Continue to provide surface water diversions with effective screens
Ecology	**Water Quantity Management**		
	O	**S**	Implement instream flow monitoring through permanent and seasonal gauges on Tucannon River for the purpose of instream flow management
	R	**S**	Characterize ground water conditions to determine if additional withdrawals from ground water is sustainable
	R	**S**	Replace surface water withdrawals for agriculture irrigation with ground water sources if study determines withdrawal is sustainable and practicable; source substitution could be implemented during low flow periods or permanently where feasible
Ecology, *cont*.	**Water Quantity Management**		

Table E-4
Tucannon River Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L)/ Support (S)	Actions
	R	S	Conduct detailed hydrogeology study to understand basalt and alluvial ground water resources and identify sustainable levels of ground water withdrawals that could potentially replace surface water diversions
	R	S	Identify wetland storage projects
	R	S	Explore opportunities for water right leases and/or acquisitions through the WDOE Trust Water Program and/or water banking
	Water Quality Management		
	R	S	Conduct a study to current condition and sources of water quality: 1) determine if the inputs of Pataha Creek are impacting water quality in the Tucannon, 2) identify sources of fecal coliform, 3) determining the natural temperature ranges for the Tucannon, 4) collect data in accordance with Ecology standards for use in developing state-required TMDL's
	R	S	Implement the following strategies to reduce fecal coliform levels at mouth of Tucannon: 1) septic system repair and/or upgrade, 2) livestock BMP's, 3) regulation of point sources, 4) restore riparian buffers, 5) manage grazing in riparian areas
	R	S	Implement the following strategies to reduce TSS levels by reducing the sediment load entering the Tucannon: 1) conservation tillage, 2) grassed waterways, 3) sediment basins, 4) improved riparian function, 5) reduce erosion from public roads
	R	S	Continue on-going strategies to reduce water temperatures thru BMP's
	R	S	Work with individual landowners to review pesticide and fertilizer use; and to implement the following best management practices to limit water quality impacts: 1) non-chemical weed control practices of ditches and ROW's, 2) restore riparian areas, 3) urban/rural education programs, 4) conservation tillage
	Regulatory Actions		
	R	L	Establish minimum instream flows in rule/regulation for Tucannon River at Management Points 1a, 1b and 3
WDFW	**Water Quality Management**		
	R	S	Establish and promote the following BMP's for erosion control for pasture and rangeland, cropland, and forest land: 1) creation and maintenance of county ROW's, 2) agricultural BMP's to buffer fields next to roads, 3) conservation tillage, 4) increased grassed waterways, 5) buffers, 6) strip cropping
	R	S	Continue instream flow and water quality monitoring through permanent and seasonal gauges.
	Aquatic Habitat Enhancement Management		
	R	S	Prioritize funds for post-fire restoration (School Fire) on public lands
	R	S	Implement table 6-7 aquatic habitat protection and restoration plans
	R	S	Restore areas of degraded riparian vegetation on public land
	R	S	Provide technical assistance and support for the remove/modify fish passage obstructions
	R	S	Provide technical assistance for evaluating diversionsites and permitting fish screens to ensure that they meet State and Federal guidelines
	O	L	Evaluate irrigation on WDFW land where diversion have potential impact on instream flows and will look for opportunities to place water into trust
NRCS	**Water Quality Management**		
	R	S	Work with individual landowners to review pesticide and fertilizer use; and to implement the following best management practices to limit water quality impacts: 1) non-chemical weed control practices of ditches and ROW's, 2) restore riparian areas, 3) urban/rural education programs, 4) conservation tillage
	R	S	Establish and promote the following BMP's for erosion control for pasture and rangeland, cropland, and forest land: 1) creation and maintenance of county ROW's, 2) agricultural BMP's to buffer fields next to roads, 3) conservation tillage, 4) increased grassed waterways, 5) buffers, 6) strip cropping

Table E-4
Tucannon River Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L)/ Support (S)	Actions
WSU Extension	**Water Quality Management**		
	R	**S**	Work with individual landowners to review pesticide and fertilizer use; and to implement the following best management practices to limit water quality impacts: 1) non-chemical weed control practices of ditches and ROW's, 2) restore riparian areas, 3) urban/rural education programs, 4) conservation tillage
	R	**S**	Establish and promote the following BMP's for erosion control for pasture and rangeland, cropland, and forest land: 1) creation and maintenance of county ROW's, 2) agricultural BMP's to buffer fields next to roads, 3) conservation tillage, 4) increased grassed waterways, 5) buffers, 6) strip cropping
USFS	**Water Quality Management**		
	R	**S**	Establish and promote the following BMP's for erosion control for pasture and rangeland, cropland, and forest land: 1) creation and maintenance of road ROW's, 2) increased vegetation grassed waterways, 3) buffers
	Aquatic Habitat Enhancement Management		
	R	**L**	Prioritize funds for post-fire restoration (school fire) on public lands
	R	**L**	Implement aquatic habitat and protection and restoration plans; including the following priority projects: 1) sediment reduction, 2) enhancement of habitat in riparian zones for ESA listed species, 3) control of noxious weeds, 4) planting of native vegetation, 5) school fire riparian recovery
	R	**L**	Work with public land and wildlife management agencies to maintain and enhance pristine and other areas, with specific focus on the post-school fire recover by applying BMP's
County: Columbia County	**Water Quantity Management**		
	R	**S**	Conduct detailed hydrogeology study to understand basalt and alluvial ground water resources and identify sustainable levels of ground water withdrawals that could potentially replace surface water diversions
	Water Quality Management		
	R	**L**	Implement the following strategies to reduce fecal coliform levels at mouth of Tucannon: 1) septic system repair and/or upgrade, 2) livestock BMP's, 3) regulation of point sources, 4) restore riparian buffers, 5) manage grazing in riparian areas
	Regulatory Actions		
	R	**L**	Implement/enforce local land use planning to protect areas in IA
NPT	**Aquatic Habitat Enhancement Management**		
	R	**S**	Implement table 6-7 aquatic habitat protection and restoration plans

Table E-5
Grande Ronde River Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L) / Support (S)	Actions
USGS	**Water Quantity Management**		
	R	L	Continue instream flow monitoring at seasonal and permanent gauging stations.
	R	L	Installation of additional instream flow gauges with focus on perennial stream with potential fish habitat.
	Water Quality Management		
	R	L	Continued water quality monitoring at existing locations.
Conservation District: Asotin County Conservation District	**Water Quantity Management**		
	R	L	Modify surface water diversions to meet NOAA fish passage standards where necessary.
	R	L	Ensure adequate water supply for irrigation by: 1) upgrading low efficiency systems, 2) changes in irrigation timing, and 3) storage for periods of low availability.
	Water Quality Management		
	R	L	Identify sources and implement the following strategies to reduce fecal coliform levels on Grande Ronde: 1. Manure management (6 locations on Asotin, 2 on Couse, 3 on Tenmile), 2. upgrade or connect septic to sewer 3. Explore opportunities for regionalization of wastewater treatment plant, 4. connect fringe rural areas to sewer systems
	R	L	Implement the following strategies to reduce TSS levels at the mouth of Grande Ronde: 1. direct seed, 2. upland management BMPs, 3. riparian improvement, 4. CREP, 5. grassed waterways, 6. sediment basins, 7. weed control, 8. grazing management, 9. cross fencing, 10. alternative water sources, 11. manure management (livestock operations)
	R	L	Implement regular water quality monitoring program that will identify contributions to high instream temperatures, fecal coliform an sediment delivery from tributaries
	Aquatic Habitat Enhancement Management		
	R	L	Implement actions to reduce instream temperatures within Grande Ronde mainstem and tributaries
	R	L	Develop aquatic habitat restoration and protection plans; including the following prioritized projects: 1) Bull Trout monitoring and Recovery Planning 2) Grande Ronde Supplementation Program Monitoring and Evalutation 3) Life studies of spring and fall Chinook
	R	S	Restore areas of degraded riparian areas through CREP or permanent conservation easements
	R	S	Address barriers to fish passage such as: 1) improperly screened diversions 2) inadequate culvert modifications
	R	S	Improve degraded channel conditions where necessary

Table E-5
Grande Ronde River Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L) / Support (S)	Actions
Counties: Asotin County	**Regulatory Actions**		
	R	**L**	Implement/enforce federal, state and local land use regulations to protect critical areas and pristine areas of the implementation area. Review and update, as needed, best-available-science-based riparian buffer zones and critical areas regulations.
	Water Quality Management		
	R	**L**	Implement the following actions to reduce fecal coliform levels on Grande Ronde: 1) manure management 2) riparian enhancement 3) improve/encourage grazing management for operations adjacent to streams 4) septic system inventory/management/straight pipes 5) reduce or eliminate combined sewage overflows 6) urban sources 7) inventory/dye testing septic systems adjacent to floodplains and waterways 8) other applicable BMP's implementable
	Miscellaneous Studies		
	R	**S**	Develop a more complete knowledge of land uses that impact water quality, water quantity and aquatic habitat.
Ecology	**Water Quantity Management**		
	O	**L**	Continue to collaborate with and support the Middle Snake Watershed Planning Unit during Phase IV Implementation on Instream Flow Habitat Analyses, Minimum Instream Flows, Closures, and Groundwater Recommendations
	O	**L**	Continue to monitor and regulate withdrawals/diversions as appropriate
	O	**L**	Continue instream flow monitoring through permanent and seasonal gauges on Joseph Creek for the purpose of gathering short term flow data to assit the Planning Unit in additional instream flow work
	R	**L**	Installation of additional instream flow gauges with focus on perennial streams with potential fish habitat.
	R	**L**	Continue to require installation and use of water use meters for surface water diversions and groundwater withdrawals in accordance with RCW 90.03.360 (2) and WAC 17-173-040
	O	**L**	Work with Planning Unit during Phase IV Implementation on regulatory alternatives that would address out of basin changes and transfers of water consistent with current water law, case laws and rules/regulations

Table E-5
Grande Ronde River Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L) / Support (S)	Actions
Ecology, *cont.*	**Water Quality Management**		
	R	**S**	Implement regular water quality monitoring program that will identify contributions to high instream temperatures, fecal coliform and sediment delivery from tributaries.
	R	**S**	Continued water quality monitoring at existing locations in Grande Ronde River.
	Regulatory Actions		
	O	**L**	Establish Minimum Instream Flows in rule/regulation on the Grande Ronde and tributaries as appropriate, in collaboration with the Middle Snake Watershed Planning Unit
	O	**L**	Establish Administrative Closures and/or minimum instream flows in rule/regulation as appropriate on the Grande Ronde and tributaries in collaboration with the WRIA 35 Watershed Planning Unit
	O	**L**	Establish rule for the use of groundwater in the gravel and basalt aquifers, specifically for the development of rural domestic exempt wells in collaboration with the WRIA 35 Watershed Planning Unit
	Miscellaneouse Studies		
	R	**S**	Conduct detailed hydrogeology study to understand basalt and alluvial ground water resources and identify sustainable levels of ground water withdrawals to meet future needs
	R	**S**	Monitor groundwater levels in basalt aquifer to assess potential impacts of additional groundwater use, primarily with rural ("exempt") wells
NRCS	**Water Quality Management**		
	R	**S**	Establish and promote following BMP's for erosion control for pasture and rangeland, cropland and forest land: 1) Maintain existing CRP acres, 2). Conservation tillage, 3) increase grass waterways, 4) buffers, 5) strip cropping, 6) improve riparian grazing management
	R	**S**	Work with individual landowners to review pesticide and fertilizer use; and to implement the following best management practices to limit water quality impacts: 1) restore riparian areas, 2) urban/rural education program, 3) conservation tillage
USFWS	**Aquatic Habitat Enhancement Management**		
	R	**S**	Implement actions to reduce instream temperatures within Grande Ronde mainstem and tributaries
	R	**S**	Address barriers to fish passage such as: 1) improperly screened diversions 2) inadequate culvert modifications
	R	**L**	Develop aquatic habitat restoration and protection plans; including the following prioritized projects: 1) Bull Trout monitoring and Recovery Planning 2) Grande Ronde Supplementation Program Monitoring and Evalutation 3) Life studies of spring and fall Chinook

Table E-5
Grande Ronde River Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L) / Support (S)	Actions
WDFW	**Water Quality Management**		
	O	L	Continue to collaborate with and support the Middle Snake Watershed Planning Unit during Phase IV Implementation on Instream Flow Habitat Analyses, Minimum Instream Flows, Closures, and Groundwater Recommendation
	R	S	Identify sources and implement the action listed in table 6-2 to reduce fecal coliform levels on Asotin Creek
	R	S	Establish and promote BMP's for erosion control for pasture and rangeland, cropland and forest land
	Aquatic Habitat Enhancement Management		
	O	L	Continue to collaborate with and support the Middle Snake Watershed Planning Unit during Phase IV Implementation on Instream Flow Habitat Analyses, Minimum Instream Flows, Closures, and Groundwater Recommendations
	R	S	Implement aquatic habitat restoration actions listed in table 6-2
	R	S	Implement passive restoration project actions listed in table 6-2
	R	S	Provide technical assistance asn support for the remove/modify fish passage obstruction
	R	S	Provide technical assistance and support for the analysis and inventory of fish passage barriers and help prioritize removal
	Regulatory Actions		
	R	S	Provide technical assistance to local governments to help implement/Enforce federal, state, and local land use regulations to protect critical and pristine areas in the IA
	R	S	Review and update, as needed, best available science-based riparian buffer zones and critical area regulations
	Water Quality Management		
	R	S	Implement regular water quality monitoring program that will identify contributions to high instream temperatures, fecal coliform and sediment delivery from tributaries
	R	S	Implement the following actions to reduce fecal coliform levels on Grande Ronde: 1) manure management 2) riparian enhancement 3) improve/encourage grazing management for operations adjacent to streams 4) septic system inventory/management/straight pipes 5) reduce or eliminate combined sewage overflows 6) urban sources 7) inventory/dye testing septic systems adjacent to floodplains and waterways 8) other applicable BMP's
USFS, Nez Perce Tribe	**Aquatic Habitat Enhancement Management**		
	R	S	Implement actions to reduce instream temperatures within Grande Ronde mainstem and tributaries
	R	S	Develop aquatic habitat restoration and protection plans; including the following prioritized projects: 1) Bull Trout monitoring and Recovery Planning 2) Grande Ronde Supplementation Program Monitoring and Evaluation 3) Life studies of spring and fall Chinook
	R	S	Restore areas of degraded riparian areas through CREP or permanent conservation easements
	R	S	Address barriers to fish passage such as: 1) improperly screened diversions 2) inadequate culvert modifications
	Regulatory Actions		
	R	S	Implement/enforce federal, state and local land use regulations to protect critical areas and pristine areas of the IA.

Table E-6
Basin Wide Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L) / Support (S)	Actions
Federal, State and Local Agencies / Governments, Tribes	**General**		
	R	S - All	Protect existing water rights, private property rights and tribal treaty rights
	R	S - All	Maintain and enhance regional economy and provide future economic opportunities associated with the watershed hydrology, including but not limited to municipal, residential, commercial, industrial, agricultural, tourism, and instream water uses
	R	S – All	Establish detailed funding plan for implementation, including: projects, programs, long-term monitoring and evaluation of watershed plan implementation
	R	S - All	Encourage fairness in distributing costs and burdens of water resource management
	R	S – All	Improve consistency in federal, state and local water resources regulatory and management approaches, and obtain local, state, and federal and tribal buy-in and cooperation for recommended management strategies
	R	S – All	Review and update land use plans and regulations as necessary to be compatible with and support water resource management goals
	R	S – All	Support implementation of urban and rural land management BMP's
	R	S – All	Improve scientific basis, including use of bio-assessment performance measure for understanding baseline conditions and measuring watershed enhancements
	Water Quantity Management		
	O	L – All	Continue to collaborate with and support the WRIA 35 Planning Unit during Phase IV implementation on instream flow analysis, minimum instream flows, closures and groundwater recommendations
	O	L – DOE	Continue to monitor and regulate withdrawals/diversions as appropriate
	O	WDFW	Evaluate irrigation on WDFW lands where diversions have potential impact on instream flows
	R	S - All	Provide long-term reliable and predictable water supplies for municipal, residential, commercial, industrial, agricultural, recreational, and instream water uses
	R	S - All	Continue and improve instream flow and water quality monitoring through permanent and seasonal gauges providing baseline data needed to manage flows and facilitate future water management decisions
	R	S - All	Characterize surface and ground water availability and recharge/discharge balance and connectivity within the sub-basins and surrounding region to ensure adequate long-term ground water resources to meet existing and needs, consistent with adopted city and county land use plans.
	R	S - All	Encourage stormwater and/or wastewater reclamation and reuse to satisfy other water resource needs
	R	S - All	Identify and develop opportunities to enhance available water supply, emphasizing offstream storage, aquifer storage and recovery, source substitution, reclamation and reuse, and stormwater retention.
	R	S - All	Promote conservation and efficiency of water use, including but not limited to municipal, residential, agricultural, recreational, and instream water uses
	R	L - DOE	Strongly recommend Ecology deny applications that propose out of basin changes or transfers of surface or groundwater rights based on the desire to preserve the agricultural component of the local communities.
	R	S - All	Improve certainty, timelines and efficiency in water rights decisions
	Water Quality Management		
	R	S - All	Protect surface and ground water quality needed for public drinking water supplies and other uses (including but not limited to municipal, residential, commercial, industrial, agricultural, recreational, and instream water uses)
	R	S - All	Review state surface water quality standards and establish natural (system potential) temperature levels for streams and rivers that reflect conditions within the watersheds

Table E-6
Basin Wide Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L) / Support (S)	Actions
Asotin County, Pomeroy, Columbia and Whitman Conservation Districts, NRCS, FSA, WSU Extension, cities	**General**		
	R	S - All	Protect existing water rights, private property rights and tribal treaty rights
	R	S - All	Emphasize voluntary and incentive-based management solutions, including Continuous Conservation Reserve Program (CCRP), Conservation Reserve Enhancement Program (CREP) and Conservation Security Program (CSP)
	R	S - All	Maintain and enhance regional economy and provide future economic opportunities associated with the watershed hydrology, including but not limited to municipal, residential, commercial, industrial, agricultural, tourism, and instream water uses
	R	S - All	Establish detailed funding plan for implementation, including: projects, programs, long-term monitoring and evaluation of watershed plan implementation
	R	S - All	Improve consistency in federal, state and local water resources regulatory and management approaches, and obtain local, state, and federal and tribal buy-in and cooperation for recommended management strategies
	R	S - All	Review and update land use plans and regulations as necessary to be compatible with and support water resource management goals
	R	S - All	Support implementation of urban and rural land management BMP's
	R	S - All	Establish and maintain ongoing water resource management education and outreach, addressing topics including water use, conservation, reclamation, reuse, stormwater management and best management practices
	R	S - All	Restore and enhance natural floodplain, riparian and wetland capacities, where feasible, to increase aquifer recharge, improve water quality, provide aquatic and riparian habitat and reduce the duration and severity of flood events
	R	S - All	Develop and implement noxious weed control programs with focus on public lands
	Water Quantity Management Actions		
	R	S	Continue and improve instream flow and water quality monitoring through permanent and seasonal gauges providing baseline data needed to manage flows and facilitate future water management decisions
	R	S	Promote conservaton and efficiency of water use, including but not limited to municipal, residential, commercial, industrial, agricultural, recreational, and instream water uses
	R	L	Improve certainty, timelines and efficiency in water rights decisions
	Water Quality Management Actions		
	R	S	Improve water quality to the extent practicable given the natural conditions
	R	S	Manage stormwater in both urban and rural areas to improve water quality, reduce flooding and enhance aquifer recharge where practicable

Table E-6
Basin Wide Management Area Actions

Implementation Organization	Recommendation (R) / Obligation (O)	Lead (L) / Support (S)	Actions
Legislative / Regulatory	**Obligation**		
	O	S - All	DOE will work with the WRIA 35 Planning Unit during Phase IV on a recommendation to the Legislature to amend Chapter 90.14 RCW so that it does not serve as a disincentive to water conservation
	O	S - All	DOE will review Stockwater Conveyance Policy and work with the WRIA 35 Planning Unit during Phase IV on recommendations for amendment to the water code that would address alternative to riparian stockwater
	O	S - All	Establish administrative closures and/or minimum instream flows in rule/regulation as appropriate on WRIA 35 tributaries in collaboration with the WRIA 35 Planning Unit
	O	S - All	Establish rule/regulation for the use of groundwater specifically for the development of rural domestic permit exempt wells in collaboration with the WRIA 35 Planning Unit
	O	S - All	DOE will work with WRIA 35 Planning Unit during Phase IV on regulatory alternatives that would address out-of-basin changes and transfers of water