Stream Flow Management
Final Memorandum

WRIA 35 – Middle Snake River Basin

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Executive Summary

The streamflow management framework for WRIA 35 has three main components: (i) minimum instream flows (instream flows); (ii) closures with provisions; and (iii) flow enhancement targets. The flow enhancement component is a smaller part of the strategy, primarily because irrigation use is relatively limited in the watershed. Based on the integration of the management components, the stream flow management framework includes the following general recommendations for WRIA 35:

- Recommend Ecology promulgates an administrative rule defining restrictions on issuance of new water rights based on instream flows for those streams with currently available streamflow data and instream flow studies (IFIM). These streams include Tucannon River (MP-1a and MP-1b) and Asotin Creek (MP-12). Refer to Table ES-1 for a summary of the instream flow recommendations.

- Recommend Ecology promulgates an administrative rule defining seasonal "closures" (with provisions) that restrict issuance of new water rights in other basins which have been identified as priorities for habitat protection or restoration. Seasonal closures are applied to streams/basins that lack sufficient stream gage data and instream studies. Table ES-2 and ES-3 for a summary of the closure recommendations and water rights reservations.

- Recommend that provisions to the closures include predefined quantities of water reserved for domestic wells, predefined quantities of water reserved for municipal and other purposes (only limited cases), and in certain cases, interruptible seasonal rights. Interruptible rights (operated off-season from the closure period) are granted only in cases where a potential user can demonstrate a seasonal need for water and the use is likely not to interrupt channel-forming flows. These "blocks" of water reserved for domestic, municipal, and other purposes will not be subject to minimum instream flow conditions or closures. Refer to Tables ES-3 for the proposed water reservations for each implementation area.

- Recommend that additional groundwater studies be conducted to determine availability of basalt groundwater. This recommendation could help jurisdictions direct future growth into appropriate areas under the Growth Management Act or other planning processes.

- Some smaller streams and tributaries that were not identified as priorities for restoration or protection under the Subbasin Plan (and were not assigned a management point under this framework) were not specifically analyzed in this assessment. These streams are not recommended for closure; however, Ecology and Fish & Wildlife should address these water bodies on a case-by-case basis in the future as applicants apply for new water rights. If, upon review, these streams are closed by administrative action, then it is recommended that a water right reservation should also be considered, to allow for domestic wells and potentially other uses. Such closures and recommendations would then be added to the formal rule as part of a future update.

- Recommend that, as funding becomes available, additional instream studies be conducted at streams identified for closures. These instream studies can be used to develop instream flows at a later date and replace or augment the protections gained from closures alone.

- Recommend the continued stream flow monitoring at all existing gauges in WRIA 35 to allow monitoring and adaptive management. The flow data would be used to potential define instream flows in those streams that currently only have recommended closures due to a lack of stream flow data. Instream flow studies would also have to be conducted.

- Recommend that instream flows, closures and provisions (water reservations) be reviewed and evaluated every five (or ten) years as new data is collected.

- Recommend that the status of target flows be reviewed and evaluated every five years using updated stream flow data and metering data (refer to Table ES-4).

Table ES-1. Summary of Instream Flow Level Recommendations for Rule Adoption

Period	MP-1a Tucannon River at mouth to Territorial Rd.	MP-1b Tucannon River from Territorial Rd. to Marengo	MP-12 Asotin Creek from mouth to confluence of George Creek
October	85	85	48
November	95	95	65
December	95	95	75
January	110	110	75
February	110	110	90
March	110	110	90
April	110	110	90
May	110	110	90
June (1-15)	90	90	75
June (16-30)	75	75	
July	75	75	45
August	61	75	35
September (1-15)	72	75	42
September (16-30)	75	75	

Table ES-2. Recommended Restrictions on Issuance of New Water Rights

Location	Restriction on New Water Rights[1]	Closure Provision: Water Supply Reservations	Notes
Tucannon River Implementation Area			
Tucannon River mainstem and tributaries from mouth to Marengo	▪ Minimum instream flows established as listed in Tables ES-1.	▪ NA.	▪ No major public water supplies in this reach, except Starbuck. ▪ Priority restoration and protection area under Subbasin Plan.
Tucannon River mainstem and tributaries from Marengo to headwaters	▪ Seasonal closure to new water rights with provision from May 15 – Nov. 15.	▪ Reservation for domestic wells as listed in Table ES-3.	

Table ES-2. Recommended Restrictions on Issuance of New Water Rights			
Location	**Restriction on New Water Rights[1]**	**Closure Provision: Water Supply Reservations**	**Notes**
Pataha Creek Implementation Area			
Pataha Creek mainstem from mouth to headwaters	▪ Seasonal closure to new water rights with provision from May 15 – Nov. 15.	▪ Reservation for domestic wells and City of Pomeroy as listed in Table ES-3.	▪ City of Pomeroy has reserved water. ▪ Focal species present, but not a priority protection area under Subbasin Plan.
Middle Snake River Implementation Area			
Deadman Creek mainstem and tributaries from mouth to headwaters	▪ Seasonal closure to new water rights with provision from May 15 – Nov. 15.	▪ Reservation for domestic wells as listed in Table ES-3.	▪ No major public water supplies in this reach. ▪ Priority restoration area under Subbasin Plan.
Penawawa Creek mainstem and tributaries from mouth to headwaters			
Almota Creek mainstem and tributaries from mouth to headwaters			
Alpowa Creek mainstem and tributaries from mouth to headwaters			
All other tributaries to Snake River	▪ No special restrictions. State Water Code applies.	▪ Not applicable since this reach is not closed to new water rights	▪ City of Clarkston (Asotin County PUD) has adequate water rights through planning period.
Asotin Creek Implementation Area			
Asotin Creek mainstem and tributaries from mouth to confluence with George Creek	▪ Minimum instream flows established as listed in Table ES-1.	▪ NA	▪ No major public water supplies in this reach. ▪ Priority restoration area under Subbasin Plan.
Asotin Creek mainstem and tributaries from George Creek confluence to headwaters (including Charley Cr., NF Asotin Cr., and SF Asotin Cr.)	▪ Seasonal closure to new water rights with provision from May 15 – Nov. 15.	▪ Reservation for domestic wells as listed in Table ES-3.	▪ No major public water supplies in this reach. ▪ Priority restoration and protection area under Subbasin Plan.
George Creek mainstem and tirbutaries from mouth to headwaters			▪ No major public water supplies in this reach. ▪ Priority restoration and protection area under Subbasin Plan.
Tenmile Creek mainstem and tirbutaries from mouth to headwaters			▪ No major public water supplies in this reach. ▪ Priority protection area under Subbasin Plan.

Table ES-2. Recommended Restrictions on Issuance of New Water Rights			
Location	**Restriction on New Water Rights[1]**	**Closure Provision: Water Supply Reservations**	**Notes**
Couse Creek mainstem and tirbutaries from mouth to headwaters			▪ No major public water supplies in this reach. ▪ Focal species present, but not a priority protection area under Subbasin Plan.
All other tributaries to Snake River	▪ No special restrictions. State Water Code applies.	▪ Not applicable since this reach is not closed to new water rights	▪ No major public water supplies in this reach.
Grande Ronde Implementation Area			
Joseph Creek mainstem and tributaries from mouth to waters within State of Washington jursidiction	▪ Seasonal closure to new water rights with provision from May 15 – Nov. 15.	▪ Domestic wells as listed in Table ES-3.	▪ No major public water supplies in this reach. ▪ Focal species present, but not a priority protection area under Subbasin Plan.
All other tributaries to Snake River within State of Washington jurisdiction	▪ No special restrictions. State Water Code applies.	▪ Not applicable since this reach is not closed to new water rights	▪ No major public water supplies in this reach.

(1) Restrictions do not apply to existing water rights or selected additional uses as noted.

Table ES-3. Summary of Recommended Water Reservations by Implementation Area		
Implementation Area	**Instantaneous Reservation for Domestic Wells[1]**	**Instantaneous Reservation for Other Uses[2]**
Tucannon	0.5 cfs	NA
Pataha	None	0.093 cfs
Middle Snake	0.15 cfs	NA
Asotin	0.8 cfs	0.11 cfs
Grande Ronde	0.3 cfs	NA

[1] Based on conservative estimate of domestic well development
[2] Accounts for City of Pomeroy's (0.093 cfs) and Town of Asotin's (0.11 cfs) projected increase in average day demands.

Table ES-4. Flow Targets for Tucannon River and Asotin River		
Management Point	**Management Point Objective**	**Basis and Flow Enhancement Strategy**
1 – Tucannon River below Smith Hollow	▪ **Total of ~ 13 cfs flow enhancement target** *Note: Flow target applies from period June through October when most of the irrigation savings would occur.*	▪ Conservation savings include those placed into trust since 2004. ▪ Voluntary short-term leases by existing water right holders to leave water in the stream during low flow periods; primarily above MP-3 and MP-1 ▪ City of Pomeroy relies on groundwater as its primary source; therefore, minor conservation savings would not benefit streams significantly from MP-4.
12 – Asotin River at mouth	▪ **Maintain flows**	▪ Limited potential for irrigation savings in lower Asotin ▪ Potential for <0.5 cfs of rights for lease or relinquishment.

1.0 Introduction

Under the Level 2 Instream Flow Assessment, the WRIA 35 Planning Unit is developing a stream flow management strategy to integrate into the Middle Snake River Watershed Management Plan (Plan). Over the course of two years the Planning Unit has participated in meetings and workshops to develop management objectives and strategies consistent with the Watershed Management Act, which calls for strategies to meet instream flow needs for fish and out-of-stream needs for people.

The purpose of this final memo is to: (1) summarize the streamflow management framework; and (2) provide the specific streamflow management recommendations and actions for each implementation area. The draft streamflow management recommendations "package" will be incorporated into the WRIA 35 Watershed Management Plan upon review and approval by consensus of the Planning Unit. The State resource agencies (Department of Ecology and Department of Fish and Wildlife) and Nez Perce Tribe will also provide a review of these draft recommendations prior to inclusion in the Plan.

The technical memoranda submitted as part of the Level 2 Instream Flow Assessment include:

- Tech Memo 1: Stream flow Management Framework (May 13, 2005)
- Tech Memo 2a: Minimum Instream Flow Framework (May 20, 2005)
- Tech Memo 2b: Proposal for Administrative Closures (June 30, 2005)
- Tech Memo 3: Proposed Flow Enhancement Targets (June 30, 2005)

These documents were posted on the WRIA 35 website for review by the Planning Unit (including the resource agencies and tribe) at the time of their submittal. A response to comments table is included in Appendix A. Although the tech memos will not be reissued, the description of the streamflow management framework and the recommendations documented in this memo incorporate the responses to comments.

1.1 Management Objectives

The following objectives guide the instream flow management framework. The objectives listed below are based on the overall "planning goals" developed by the Planning Unit (April 2003) as part of the Phase 1 planning process.

- Protect streamflows to maintain habitat conditions for salmonids.
- Enhance/restore streamflows to improve habitat conditions for salmonids.
- Provide long-term reliable and predictable water supplies for human uses consistent with projected growth and densities county and city land use plans.
- Protect existing water rights and property rights

These overall objectives provide the basis to develop the stream-specific stream flow management objectives to be integrated with the water supply, water quality and habitat components of the watershed plan.

1.2 Management Points

As part of the Level 2 Assessment, 17 stream flow management points were defined for WRIA 35. Management points are used to define instream flow needs and management objectives for specific stream reaches, and allow existing data to be summarized and logically grouped. In general, a management point can be thought of as location to measure "compliance" with a management action or decision that affects all points upstream of that location in the stream.

The location of each management point was determined by considering priority streams for habitat restoration, the extent of current and future out-of-stream water needs, and the proximity of an area to an existing stream flow gauge and/or the ability of a given location to monitor upstream activities in key reaches. In most cases the location of a management point coincides with existing stream gauges, which are already monitoring upstream flow conditions.

After further discussion and input from the Planning Unit the management points have been revised slightly from those defined in Tech Memo 1. These management points are shown in Exhibit 1 and summarized in Table 1. Additional management points or monitoring locations may be established during the implementation phase of the Plan.

Table 1. Summary of Management Points in WRIA 35

Management Point	Location	Implementation Area
MP-1a	Tucannon River at mouth	Tucannon
MP-1b	Tucannon River at Territorial Rd.	Tucannon
MP-2[(1)]	Pataha Creek at mouth	Pataha
MP-3	Tucannon River at Marengo	Tucannon
MP-5	Meadow Creek at mouth	Middle Snake
MP-6[(2)]	Deadman Creek at mouth	Middle Snake
MP-8	Penewawa Creek at mouth	Middle Snake
MP-9	Almota Creek at mouth	Middle Snake
MP-10	Alkali Flat Creek at mouth	Middle Snake
MP-11	Alpowa Creek at mouth	Asotin
MP-12	Asotin Creek at mouth	Asotin
MP-13	George Creek at mouth	Asotin
MP-14	Asotin Creek above George Creek	Asotin
MP-15	Tenmile Creek at mouth	Asotin
MP_16	Couse Creek at mouth	Asotin
MP-17	Grande River at mouth	Grande Ronde
MP-18	Joseph Creek at mouth	Grande Ronde

(1) MP-2 is the management point for the entire Pataha Creek drainage. MP-4 Pataha Creek at Pataha was removed.
(2) MP-6 is the management point for the entire Deadman Creek drainage. MP-7 Deadman Creek below forks was removed.

2.0 Streamflow Management Framework

2.1 Beneficial Uses

The streamflow management framework takes into consideration the multiple beneficial uses for stream flows. These uses can generally be grouped into instream uses and out-of-stream uses. Instream uses include aquatic habitat (fish use), water quality (non-habitat), recreational, aesthetic. Aquatic habitat or fish use also needs to consider maintenance of minimum stream flows, as well as high flow for channel-formation. Out-of-stream uses include water supply (consumptive) and other non-consumptive uses (e.g. hatcheries).

The management framework uses best available science and data to quantify instream flow needs and defines actions or goals to meet those needs, while allowing for allocations or exceptions to meet long-term out-of-stream demands. The instream needs are generally estimated by using results from instream flow studies where available. Furthermore, information from Subbasin Plans developed under the Northwest Power and Conservation Council were used to identify priority stream reaches for "protection" and "restoration" to benefit focal aquatic species.

Stream reaches identified as priorities for protection or restoration have other limiting factors besides stream flow that are more limiting, such as riparian function, bank confinement, or sediment loading. In some cases, actions to improve stream flows (high and low flows) would result in improvements to other limiting factors such as bedscour, water temperature, and sediment loading. However, other "non-flow" stream restoration actions may address these factors more directly. Therefore, the stream flow management framework focuses on those stream reaches where stream flow improvements would be most beneficial. Other "non-flow" restoration techniques can be applied to these reaches as well.

2.2 Management Framework Components

The streamflow management framework has three main components: (i) minimum instream flows (instream flows); (ii) closures with provisions; and (iii) flow enhancement targets. The flow enhancement targets component is a smaller part of the strategy, primarily because surface water use (primarily irrigation use) is relatively limited in the watershed, and efficiencies have largely already been realized. Details on the background and considerations for these components are included in the Level 2 Assessment tech memos. A summary is provided below for each component.

Minimum instream flow (instream flow)
Ecology has been instructed by State legislature to set stream flow levels in rule in order to "protect and preserve instream resources." The flows set into rule through Ecology are referred to as "minimum instream flows" (or instream flows) in the statutes. The Washington Department of Fish and Wildlife (WDFW) typically works with Ecology in developing instream flows, based on instream flow studies for fish needs. This approach and issues associated with it are discussed further in Section 3 below.

Traditionally, the "minimum instream flow" set into rule for a given stream has been a single rate (expressed as cubic feet per second, or CFS) listed for each month or half-month. In some instances, a single flow level is applied to the whole calendar year. Instream flows are, in effect, a water right for fish and instream values. The purpose for setting instream flows include protecting fish (RCW 90.82.010), and to provide for preservation of wildlife, fish, scenic, aesthetic and other environmental values, and navigational values [RCW 90.54.020(3)]. Further, instream flows have a priority date and water rights issued after the adoption of instream flows are junior to the instream flow. The instream flow also conditions the issuance of subsequent new water rights.

Closure and Provisions

Under state law Ecology can issue "closure" periods for future appropriations on specific river reaches. A stream or basin closure means Ecology has determined that no surface waters are available for appropriation for a given stream and over a defined time period. The closure and instream flow are not mutually exclusive. That is, an instream flow can be established in a closed stream or basin, while a closure can also be established in a stream or basin that already has an instream flow. Closures are useful in that they allow protection of flows from further impairment in priority habitat streams without the need for conducting detailed and often costly instream flow studies.

In addition to developing instream flows for *protecting* flows, the Watershed Planning Act calls for the planning unit to develop strategies to supply water in quantities sufficient to satisfy instream flows for fish and to provide water for future out-of-stream uses for water when necessary. As a result, closures (and instream flows) can be adopted with provisions to allow future water use by specifying criteria and a process for allowing the issuance of new water rights that would not be conditioned or restricted by the instream flow or closure.

Flow enhancement targets

Simply adopting instream flows or closures will not increase the amount of water available to support instream management objectives, since they are a "protection" measure. Thus, management framework includes developing a voluntary flow regime to guide flow enhancement efforts, in addition to the flow protection measures. These "target flows" define flows that could reasonably be achieved within a defined time frame, with a relatively specific set of projects or actions. It should be kept in mind that *target flows are not enforceable, not set in rule, and are voluntary*, and thus do not impact existing water rights or decisions on water rights applications. Target flows do not have a priority date, and can be adjusted as the goals of the watershed change. Finally, a stream flow monitoring program is typically needed to measure whether target flows are being achieved

With respect to target flows, it should be recognized that changes in the flow regime will be incremental, and may be hidden initially by larger variation in precipitation from one year to the next. In this case, measuring changes in the flow regime from management actions may take years or even decades. For this reason, a long-term view of management actions and their effects in the watershed is necessary. Developing target flows is generally limited to areas where water use practices can be managed or altered to achieve efficiencies to return flows back to the stream. In WRIA 35, this is essentially limited to the Tucannon area, although no-till and other

less intrusive agricultural practices are thought to have indirectly improved flow conditions in recent years throughout the watershed.

2.3 General Management Recommendations

Based on the integration of these management components, the stream flow management framework includes the following general recommendations for WRIA 35:

- Recommend Ecology promulgates an administrative rule defining restrictions on issuance of new water rights based on instream flows for those streams with currently available streamflow data and instream flow studies (IFIM). These streams include Tucannon River (MP-1a and MP-1b) and Asotin Creek (MP-12).

- Recommend Ecology promulgates an administrative rule defining seasonal "closures" (with provisions) that restrict issuance of new water rights in other basins which have been identified as priorities for habitat protection or restoration. Seasonal closures are applied to streams/basins that lack sufficient stream gage data and instream studies.

- Recommend that provisions to the closures include predefined quantities of water reserved for domestic wells, predefined quantities of water reserved for municipal and other purposes (only limited cases), and in certain cases, interruptible seasonal rights. Interruptible rights (operated off-season from the closure period) are granted only in cases where a potential user can demonstrate a seasonal need for water and the use is likely not to interrupt channel-forming flows. These "blocks" of water reserved for domestic, municipal, and other purposes will not be subject to minimum instream flow conditions or closures.

- Recommend that additional groundwater studies should be conducted to determine availability of basalt groundwater. This recommendation could help jurisdictions direct future growth into appropriate areas under the Growth Management Act or other planning processes.

- Some smaller streams and tributaries that were not identified as priorities for restoration or protection under the Subbasin Plan (and were not assigned a management point under this framework) were not specifically analyzed in this assessment. These streams are not recommended for closure; however, Ecology and Fish & Wildlife should address these water bodies on a case-by-case basis in the future as applicants apply for new water rights. If, upon review, these streams are closed by administrative action, then it is recommended that a water right reservation should also be considered, to allow for domestic wells and potentially other uses. Such closures and recommendations would then be added to the formal rule as part of a future update.

- Recommend that, as funding becomes available, additional instream studies be conducted at streams identified for closures. These instream studies can be used to develop instream flows at a later date and replace or augment the protections gained from closures alone.

- Recommend the continued stream flow monitoring at all existing gauges in WRIA 35 to allow monitoring and adaptive management. The flow data would be used to potential define instream flows in those streams that currently only have recommended closures due to a lack of stream flow data. Instream flow studies would also have to be conducted.

- Recommend that instream flows, closures and provisions (water reservations) be reviewed and evaluated in five years as new data is collected.

- Recommend that the status of target flows be reviewed and evaluated every five years using updated stream flow data and metering data.

3.0 Basis for Instream Flow Recommendations

Through discussions among the Planning Unit and evaluation of available data under the Level 2 Instream Flow Assessment, three management points (stream locations) have been identified for recommending instream flows. The management points include:

- Management Point 1a – Tucannon River at mouth
- Management Point 1b – Tucannon River at Territorial Rd.
- Management Point 12 – Asotin Creek at mouth

3.1 Flow Setting Procedure

The Planning Unit developed a two-tiered approach to making instream flow recommendations for each management point. First, weighted usable area (WUA) data from IFIM studies were combined with the local fisheries knowledge of agency and Planning Unit members to develop a set of "ideal" fish-based flows. Secondly, these initial flow levels were compared with hydrologic data so that the recommended flows are consistent with the historical hydrograph. The recommendations were developed using monthly increments, with exceptions during months with a significant transition in runoff where biweekly increments were used.

Fish periodicity information used as the basis for this analysis is included in Appendix B. This information was developed by the WDFW and the Planning Unit during the April 13, 2006 Planning Unit meeting. The WUA information used in the analysis is included in Appendix C. Note, the WUA data was transformed to percent of optimum for this analysis.

As part of the first step, different species/lifestage(s) were prioritized for each location and month to identify the stream flow that provides maximum benefit practicable to the highest priority species/lifestage(s). As part of the hydrology comparison, it was decided that the instream flow recommendations should not exceed the 10% exceedance flow for any particular month. In other words, if the recommended flow based on maximizing WUA is higher than the 10% exceedance flow, then the recommended flow is reduced to match the 10% exceedance level.

In some cases fish periodicity information indicates no fisheries are present during a certain period in a given reach (e.g. lower Tucannon in August). In cases where no fisheries resources

are present to conduct the WUA comparison, the basis for selecting an instream flow falls on other beneficial uses, such as aesthetic, recreational, or water quality. For the Tucannon River and Asotin Creek, there was no specific quantitative foundation; therefore, the 50% exceedance flow was used to define the instream flow value. This approach results in water rights being restricted 50 percent of the time, on average. This flow value generally also maintains overall aesthetic benefits since it attempts to maintain flows at levels that occur half of the time on average.

Another consideration for selecting instream flows is temperature. Elevated stream temperatures (especially in the lower portions of Tucannon River and Asotin Creek) may result in a "thermal barrier" preventing fish from migrating up to the upper portions of the stream system. The Planning Unit conducted a temperature study on the Tucannon River to evaluate the affects of shading on stream temperature throughout the entire length of the River, and to evaluate whether stream temperatures in the Tucannon are elevated throughout its length because of the lack of shading. Information from field monitoring conducted in July 2005 for this study, suggests that in the summer months temperatures in the upper portion of the Tucannon are already elevated (~20 degrees Celsius) and that temperatures remain elevated throughout the length of the river. Specific scenarios evaluating flow effects on stream temperature were not run in the modeling exercise because it was beyond the scope of the project; however, based on the flow and temperature data it appears that additional flows (on the order of 5 cfs) will not significantly affect water temperatures. Based on this qualitative information, it appears that using 50% exceedance flows for the periods when no fisheries are present is appropriate to meet recreational or aesthetic objectives.

Tables 2 and 3 summarize the recommended instream flows and the basis for the values selected for the Tucannon River and Asotin Creek management points, respectively.

Table 2. Instream Flows for Tucannon River (MP-1a and MP-1b)

Period	MP-1a (cfs)	MP-1b (cfs)	Monthly Exceedance Flows USGS 13344500 (cfs)			Basis for Recommendation[1]
			10%	50%	90%	
October	85	85	102	83	65	▪ Fall Chinook spawning is considered the priority species/lifestage for this period; lower section of the Tucannon is used for spawning primarily by fall Chinook, with a peak spawning time from October to December. ▪ Achieves 100% of optimum WUA for Chinook spawning and 93% for juvenile (optimum is at a lower flow of 40 cfs). ▪ Achieves 98% or greater of optimum WUA steelhead (spawning and juvenile). ▪ No bull trout spawning occurs in the lower Tucannon. Juvenile bull trout migration occurs, but optimum occurs at 160 cfs, which rarely occurs in October (10% exceedance flow is 102 cfs)

Table 2. Instream Flows for Tucannon River (MP-1a and MP-1b)						
Period	MP-1a (cfs)	MP-1b (cfs)	Monthly Exceedance Flows USGS 13344500 (cfs)			Basis for Recommendation[1]
			10%	50%	90%	
November	95	95	134	108	87	▪ Fall Chinook spawning is considered the priority species/lifestage for this period. ▪ Achieves 97% or greater of optimum WUA for Chinook spawning and 90% for juvenile (optimum is at a lower flow of 40 cfs). ▪ Achieves 99% or greater of optimum WUA steelhead (spawning and juvenile). ▪ Achieves ~79% of optimum for bull trout juvenile migration. ▪ Although WUA for Chinook and steelhead is reduced slightly (~1-2% from October) at this higher instream flow, the greater available flow during this period improves the habitat condition for bull trout by ~10%.
December	95	95	281	135	88	▪ Fall Chinook spawning is considered the priority species/lifestage for this period. ▪ Achieves 97% or greater of optimum WUA for Chinook spawning and 90% for juvenile (optimum is at a lower flow of 40 cfs). ▪ Achieves 99% or greater of optimum WUA steelhead (spawning and juvenile). ▪ Achieves ~79% of optimum for bull trout juvenile migration. ▪ Although higher flows are available in December relative to Novemeber, increasing the instream flow level to improve habitat quality for bull trout does results in a comparable reduction in habitat quality for Chinook.
January	110	110	383	162	96	▪ Steelhead spawning, Chinook spawning and bull trout are given equal priority during this period. ▪ Achieves 100% optimum WUA for steelhead spawning and 96% for juvenile. ▪ Achieves 93% optimum WUA for Chinook spawning and 73% for juvenile (optimum is at 40 cfs). ▪ Achieves ~84% of optimum for bull trout juvenile migration. ▪ Setting a slightly higher flow to improve bull trout habitat quality results in comparable reduction in Chinook habitat quality.
February	110	110	455	217	129	▪ Steelhead spawning is considered the priority species/lifestage for this period. ▪ Achieves 100% optimum WUA for steelhead spawning and 96% for juvenile. ▪ Achieves 93% optimum WUA for Chinook spawning and 73% for juvenile (optimum is at 40 cfs). ▪ Achieves ~84% of optimum for bull trout juvenile migration.

Table 2. Instream Flows for Tucannon River (MP-1a and MP-1b)						
Period	MP-1a (cfs)	MP-1b (cfs)	Monthly Exceedance Flows USGS 13344500 (cfs)			Basis for Recommendation[1]
			10%	50%	90%	
March	110	110	335	226	142	▪ Same as February
April	110	110	426	255	159	▪ Same as February
May	110	110	433	265	165	▪ Same as February
June (1-15)	90	90	330	178	88	▪ Steelhead juvenile and spring Chinook spawning are considered the priority species/lifestage for this period. Chinook use this area primarily for migration. ▪ Achieves 100% optimum WUA for steelhead juvenile and 98% for spawning. ▪ Achieves 100% optimum WUA for Chinook spawning and 90% for juvenile (optimum is at 40 cfs). ▪ Bull trout are not present.
June (16-30)	75	75	330	178	88	▪ Steelhead juvenile and spring Chinook spawning are considered the priority species/lifestage for this period. Chinook use this area primarily for migration. ▪ Achieves 96% optimum WUA for steelhead juvenile and 92% for spawning. ▪ Achieves 97% optimum WUA for Chinook spawning and 96% for juvenile (optimum is at 40 cfs). ▪ Bull trout are not present. ▪ Although habitat quality is reduced slightly (~5% from first half of the month), the reduced flow during the second half of the month results in a lower recommended instream flow.
July	75	75	126	77	51	▪ No fisheries present from mouth to MP-1b based on observations during this period; primarily because of high temperatures. ▪ Since no fisheries are generally present during this time below MP-1b, instream flows are set to the 50% exceedance level (in this case to 75 cfs since it is the lower of the 50% exceedance flow) rather than the 10% exceedance levels. ▪ Stream temperatures during this period are elevated (~20 degrees Celsius) at Marengo and higher flow levels are not expected to yield significantly reduced temperatures lower in the system.

Table 2. Instream Flows for Tucannon River (MP-1a and MP-1b)						
Period	MP-1a (cfs)	MP-1b (cfs)	Monthly Exceedance Flows USGS 13344500 (cfs)			Basis for Recommendation[1]
			10%	50%	90%	
August	61	75	79	61	43	▪ No fisheries present from mouth to MP-1b based on observations during this period. ▪ Since no fisheries are generally present during this time below MP-1b, instream flows are set to the 50% exceedance level. ▪ Temperature considerations – see comment for July.
September (1-15)	72	75	89	72	52	▪ No fisheries present from mouth to MP-1b based on observations during this period; primarily because of high temperatures. ▪ Since no fisheries are generally present during this time below MP-1b, instream flows are set to the 50% exceedance level. ▪ Temperature considerations – see comment for July.
September (16-30)	75	75	89	72	52	▪ Limited fisheries present from mouth to MP-1b, primarily because of high water temperatures; steelhead juvenile and very limited Chinook juveniles present. ▪ Temperature considerations – see comment for July.

Notes:
[1] The IFIM study results for the Tucannon River near Smith Hollow (Caldwell, 1995) are the basis for the weighted usable area values.

Table 3. Instream Flows for Asotin Creek (MP-12)					
Period	MP-12 (cfs)	Monthly Exceedance Flows USGS 13344500 (cfs)			Basis for Recommendations[1]
		10%	50%	90%	
October	48	48	37	30	▪ Steelhead juvenile is considered the priority lifestage/species for this period. ▪ The 10% exceedance flow is defined as the instream flow and achieves ~85% of optimum WUA for steelhead juvenile and ~72% for Fall Chinook spawning. ▪ Optimum WUA for steelhead spawning and Chinook spawning is 90 cfs and 80 cfs, respectively. ▪ Records indicate historical stream flows are typically significantly lower than the optimum flow levels for spawning habitat. ▪ Junior water rights will be restricted/interrupted 90% of the time, on average, during this period.
November	65	65	47	35	▪ Steelhead juvenile is considered the priority lifestage/species for this period. ▪ The 10% exceedance flow is defined as the instream flow and achieves ~94% of optimum WUA for steelhead juvenile and ~95% for Fall Chinook spawning. ▪ Optimum WUA for steelhead spawning and Chinook spawning is 90 cfs and 80 cfs, respectively. ▪ Records indicate historical stream flows are typically significantly lower than the optimum flow levels for spawning habitat. ▪ Junior water rights will be restricted/interrupted 90% of the time, on average, during this period.
December	75	199	49	37	▪ Steelhead juvenile is considered the priority lifestage/species for this period. ▪ Achieves 94% optimum WUA for steelhead juvenile and 91% spawning. ▪ Achieves 100% Chinook spawning and 55% juvenile.
January	75	190	67	41	▪ Steelhead juvenile is considered the priority lifestage/species for this period. ▪ Achieves 94% optimum WUA for steelhead juvenile and 91% spawning. ▪ Achieves 100% Chinook spawning and 55% juvenile.
February	90	226	79	39	▪ Steelhead spawning is considered the priority lifestage/species for this period. ▪ Achieves 100% optimum WUA for steelhead spawning and 92% for juvenile. ▪ Achieves 97% Chinook spawning and 52% juvenile.
March	90	232	127	73	▪ Steelhead spawning is considered the priority lifestage/species for this period. ▪ Achieves 100% optimum WUA for steelhead spawning and 92% for juvenile. ▪ Achieves 97% Chinook spawning and 52% juvenile.

Table 3. Instream Flows for Asotin Creek (MP-12)					
		Monthly Exceedance Flows USGS 13344500 (cfs)			
April	90	286	183	96	▪ Steelhead spawning is considered the priority lifestage/species for this period. ▪ Achieves 100% optimum WUA for steelhead spawning and 92% for juvenile. ▪ Achieves 97% Chinook spawning and 52% juvenile.
May	90	338	175	94	▪ Steelhead spawning is considered the priority lifestage/species for this period. ▪ Achieves 100% optimum WUA for steelhead spawning and 92% for juvenile. ▪ Achieves 97% Chinook spawning and 52% juvenile.
June	75	281	91	44	▪ Steelhead juvenile is considered the priority lifestage/species for this period. ▪ Achieves 94% optimum WUA for steelhead juvenile and 91% spawning. ▪ Achieves 100% Chinook spawning and 55% juvenile.
July	45	87	45	36	▪ Since no fisheries are generally present during this time, instream flows are set to the 50% exceedance levels rather than the 10% exceedance levels ▪ Achieves 85% optimum WUA for steelhead juvenile and 45% spawning. ▪ Achieves 72% Chinook spawning and 72% juvenile. ▪ Junior water rights will be restricted/interrupted 50% of the time, on average, during this period.
August	35	44	35	29	▪ No fisheries present from mouth to MP-1b based on observations during this period. ▪ Since no fisheries are generally present during this time, instream flows are set to the 50% exceedance levels rather than the 10% exceedance levels ▪ Achieves 74% optimum WUA for steelhead juvenile and 27% spawning. ▪ Achieves 71% Chinook spawning and 54% juvenile. ▪ Junior water rights will be restricted/interrupted 50% of the time, on average, during this period.
September	42	42	36	29	▪ The 10% exceedance flow is defined as the instream flow and achieves ~80% of optimum WUA for steelhead juvenile and ~65% for Fall Chinook spawning. ▪ Optimum WUA for steelhead spawning and Chinook spawning is 90 cfs and 80 cfs, respectively. ▪ Records indicate historical stream flows are typically significantly lower than the optimum flow levels for spawning habitat. ▪ Junior water rights will be restricted/interrupted 90% of the time, on average, during this period.

(1) IFIM study results for the Tucannon River near Smith Hollow (Ecology, 2004) are the basis for the weighted usable area values. Note: A formal report for this IFIM study had not been completed by Ecology at the time this assessment and report were completed. The study results were provided by Ecology to HDR along with a preliminary study summary document.

4.0 Basis for Closures Recommendations

For the watershed as a whole, projected water demands are expected to remain relatively steady through the planning period. Therefore, closures to new water rights are considered only for those areas (streams and their drainage areas) identified as priorities for protection or restoration in the Subbasin Plan. Lack of reliable water availability will likely keep demands curbed in the other intermittent stream areas of the watershed.

In general, seasonal closures (early summer through mid-Fall) are recommended over year-round closures to allow the flexibility of developing water storage or other habitat enhancement projects during the high flow periods. The period May 15 is recommended as the beginning of the closure period to coincide to the period when runoff and streamflows begin to decrease significantly. The November 15 period is recommended as the end of the closure period to coincide with the period when flows consistently increase with the start of significant precipitation. This period may "shift" to some degree depending on the stream, but for ease of implementation the period May 15 to November 15 generally captures the range of variation.

Provisions to closures within each drainage area are focused on allocations (or reservations) for rural domestic well use consistent with established land use zoning densities for the respective counties. Agricultural demand is not projected to change over the planning period, so no allocation has been defined for this type of use. The municipal and industrial needs in WRIA 35 are relatively limited. A comparison of the annual water rights and the annual demands for years 2005 and 2025 for the four communities in WRIA 35 is shown in Table 4. Asotin County PUD and Town of Starbuck have sufficient water rights and do not need water reservations. The Town of Asotin has an annual water right of 417 acre-ft which is less than the projected annual demand of 499 acre-ft by 2025. The City of Pomeroy currently has a total annual water rights of 443 acre-ft, which is less than the 510 acre-ft demand by 2025. Combined the deficiency is ~150 acre-ft of annual water rights. Thus, the need for municipal water reserves is small.

Table 4. Comparison of Water Demands and Water Rights for Municipal Use

Community	2005 Demand (acre-ft)	2025 Demand (Projected) (acre-ft)	Annual Primary Surface Water Right (acre-ft)	Annual Primary Ground Water Rights (acre-ft)
Asotin	409	499	NA	417
Pomeroy	462	510	165[(1)]	278[(1)]
Starbuck	38	38	NA	566
Clarkston (Asotin Co. PUD)	5,719	6,934	47,955	26,618

[(1)] City of Pomeroy's groundwater rights provide 1,250 gpm of instantaneous water rights and have 387 ac-ft in supplemental surface water rights.

Table 5 summarizes the basis for the closure recommendations. The amount of water reserve to address the deficiencies in municipal water rights along with the domestic well needs is discussed further in Section 5.

Table 5. Recommendations for Closures			
Location	**Closure Period**	**Closure Provisions**	**Basis**
Tucannon River Subbasin			
Tucannon River mainstem from mouth to Marengo (includes MP-1a and MP-1b)	None	Not applicable	▪ Instream flows are defined for MP-1a and MP1-b, which place appropriate restrictions on new water rights to protect fisheries needs.
Tucannon River mainstem from Marengo to headwaters (MP-3)	Seasonal (May 15 – November 15)	Allows exempt (domestic) well use up to the allocated amount for Tucannon/Pataha Implementation Area.	▪ Instream flow study available, but hydrologic data is insufficient to recommend instream flow levels. ▪ Closure is needed to protect existing flows for fisheries needs. ▪ Seasonal closure allows potential use of high winter flows for storage or other habitat enhancement purposes.
Pataha Creek Subbasin			
Pataha Creek from mouth to headwaters (MP-2)	Seasonal (May 15 – November 15)	Allows exempt (domestic) well use and City of Pomeroy reservation up to the allocated amount for Tucannon/Pataha Implementation Area.	▪ No instream flow setting data is currently available; closure is needed to protect existing flows. ▪ Water demands are not projected to increase significantly over planning period for municipal, industrial or agricultural uses (with the exception of projected demand increase in Pomeroy). ▪ Closure allows for development of rural domestic wells consistent with land use planning. ▪ Flows are relatively small, there are limited storage opportunities in the Pataha Creek basin, so diversion for winter flows for storage projects are unlikely needed.
Middle Snake River Subbasin			
Meadow Creek from mouth to headwaters (MP-5) Alkali Flat Creek from mouth to headwaters (MP-10)	None	Not applicable	▪ Limited data on fisheries presence and needs, but steelhead presence is suspected. ▪ Limited current demands and projected demands along stream; closure is not considered warranted at this time.

Table 5. Recommendations for Closures			
Location	**Closure Period**	**Closure Provisions**	**Basis**
Deadman Creek from mouth to headwaters (MP-6) Penewawa Creek from mouth to headwaters (MP-8) Almota Creek from mouth to headwaters (MP-9) Alpowa Creek from mouth headwaters (MP-11)	Seasonal (May 15 – November 15)	Allows exempt (domestic) well use up to the allocated amount for Middle Snake Implementation Area.	▪ Steelhead spawning and rearing present, and Subbasin Plan has identified it as priority restoration area with stream flow as a primary habitat limiting factor (with exception of Alpowa Creek). ▪ Alpowa Creek – Subbasin Plan did not identify as a priority restoration/protection area, but steelhead juveniles present throughout. ▪ Closure is needed to protect existing flows for fisheries needs. ▪ Seasonal closure allows potential use of high winter flows for storage or other habitat enhancement purposes. ▪ Rural domestic demands are not expected to be significant over the planning period.
Asotin Creek Subbasin			
Asotin Creek from mouth to confluence of George Creek (MP-12)	None	Not applicable	▪ Instream flows are defined for MP-12, which places appropriate restrictions on new water rights to protect fisheries needs.
Asotin Creek above George Creek confluence to headwaters including Charley Creek, NF Asotin, SF Asotin (MP-14) George Creek from mouth to headwaters	Seasonal (May 15 – November 15)	Allows exempt (domestic) well use and Town of Asotin reservation up to the allocated amount for Asotin Creek Implementation Area.	▪ Spawning and rearing of steelhead throughout including tributaries; presumed presence for bull trout (except George Creek). Priority restoration/protection area based on Subbasin Plan. ▪ Instream flow study available, but hydrologic data is insufficient to recommend instream flow levels. ▪ Closure is needed to protect existing flows for fisheries needs. ▪ Seasonal closure allows potential use of high winter flows for storage or other habitat enhancement purposes. ▪ Rural domestic demands are not expected to be significant over the planning period.
Tenmile Creek from mouth to headwaters Couse Creek from mouth to headwaters	Seasonal (May 15 – November 15)	Allows exempt (domestic) well use up to the allocated amount for Asotin Creek Implementation Area.	▪ Although not identified as priority restoration/protection areas in the Subbasin Plan, steelhead spawning and rearing occurs throughout the streams. ▪ Instream flow study is not available, and hydrologic data is insufficient to recommend instream flow levels. ▪ Closure is needed to protect existing flows for fisheries needs. ▪ Seasonal closure allows potential use of high winter flows for storage or other habitat enhancement purposes. ▪ Rural domestic demands are not expected to be significant over the planning period; topography also makes development in this area difficult; however closure provisions will allow rural domestic development to occur.

Table 5. Recommendations for Closures			
Location	**Closure Period**	**Closure Provisions**	**Basis**
Grande Ronde Subbasin			
Grande Ronde River from mouth to headwaters (MP-18)	None	Not applicable	▪ Closure would be difficult to implement because significant portions of the watershed is in Oregon; any form of closure would need to be coordinated.
Joseph Creek from mouth to headwaters (to Washington border) (MP-17)	Seasonal (May 15 – November 15)	Allows exempt (domestic) well use up to the allocated amount for Grande Ronde Implementation Area.	▪ Joseph Creek – Subbasin Plan did not identify as a priority restoration/protection area, but steelhead juveniles present throughout. ▪ Closure is needed to protect existing flows for fisheries needs. ▪ Seasonal closure allows potential use of high winter flows for storage or other habitat enhancement purposes. ▪ Rural domestic demands are not expected to be significant over the planning period.

5.0 Water Right Reservations, Mitigation Actions and Other Exceptions

As discussed in the previous section, the focus of the provisions on closures is to allow future water use for domestic wells. In addition, the City of Pomeroy and Town of Asotin also need an allocation for projected municipal demands over the planning period. The only other significant demand is associated with the area around the City of Clarkston. Asotin County PUD is expected to serve the development in the transitional area around Clarkston. The Asotin County PUD has sufficient water rights to meet the projected demands. Finally, exceptions to the closure are needed to allow for the possibility of developing flow enhancement projects.

5.1 Domestic Wells

The management framework recommends conditioning closure to provide an allocation of water for domestic wells that are exempt from requirements to apply for a permit under the State Ground Water Code (Chapter 90.44.050 RCW). While excluded from the permit application process, future domestic wells represent water rights that are junior to pre-existing senior rights within basins. Management of domestic wells is significant to the degree they may impair senior water rights or reduce instream flows to the detriment of fish or other wildlife species, especially in smaller tributaries at high development densities.

From a legal basis domestic wells cannot be protected from a stream closure or interruptible water rights if they are in connectivity with surface water *unless a reservation of water is defined within the rule* (Pacheco, personal communication, 2006). Therefore, the recommended domestic well reservation is a protective measure for landowners and counties to ensure domestic wells will continue to be allowed.

Domestic well development and reservations are based on the following considerations:

- The numerical reservation should be large enough to ensure consistency with predicted land use over a twenty-year time horizon. Small tributaries and other flow sensitive areas should be protected from increased development densities by maintaining existing zoning levels.

- Ecology will manage the accounting system to track the total number of domestic wells in comparison with the number allowed by the reservation.

- Developers of domestic wells should target confined (typically basalt) aquifers, whenever possible.

- Within urbanizing areas, new single-family households should utilize water supplied by public purveyors whenever available (especially in the Clarkston area).

5.2 Reservations for Municipal, Industrial, Agricultural, and Other Purposes

The projected increase in water demands in WRIA 35 for M&I and agricultural purposes is not expected to be significant over the planning period. However, the management framework needs to account for the two specific cases where water allocations are needed for the City of Pomeroy and Town of Asotin. The demand for public water supplies must be balanced against protecting baseflow for fish and wildlife. To this end, the preferred option is avoid direct use of stream flow and groundwater that is in direct hydraulic connection with surface water to the extent practicable. Reservations of water can be used for M&I and other purposes if the preferred option is not available, and use of the reservation would not require mitigation. Inherent in this approach is the need for better characterization of groundwater connectivity with surface water in areas where water rights are being sought.

The development and granting of reservations should be based on the following considerations:

- In cases where it is not feasible to avoid the use of groundwater in connectivity with surface water, a reservation of water will be reserved in rule to meet demand. The water rights applicant must evaluate all potential sources and demonstrate why use of the reservation is required.

- The reservation should indicate specific amounts of water by jurisdiction and basin. The jurisdiction may choose to allocate some or all of its reservation allocation to commercial or industrial use—this provision is intended to eliminate the need for commercial or industrial reservations in urban areas.

- Responsibility for analysis of available water sources lies with the water rights applicant.

- Application for the reservation will be reviewed, analyzed, and processed by Ecology in consultation by Fish & Wildlife and other appropriate agencies.

- Use of the reservation of water must be accompanied by a package of actions that off-set and mitigate for potential stream flow impairment (see section below).

This process can be used for any other purpose not specifically identified during development of the watershed plan, such as an industrial need that may arise.

5.3 Exceptions for Flow Enhancement Strategies

Flow enhancement strategies may be developed in basins with closures. These flow enhancement strategies may be considered as exceptions to closure periods to maximize available habitat in an average or high flow year, or mitigate impacts in a low flow year. The flow enhancement projects typically involve surface water withdrawal during spring or fall months to directly enhance (e.g. releases from surface water storage) or indirectly enhance (e.g., aquifer storage and recovery or shallow aquifer recharge) base flows during low flow periods (typically July to October) of the current or future year.

A balance is needed to maintain the pulse/channel forming flows while providing for enhancement of baseflows through late fall using the flow enhancement techniques. Therefore, during diversion for a flow enhancement project, only a small fraction (e.g. no more than 5% of instantaneous flow amount) of the total flow available would be allowed to be accessed based on this exceptions. To further refine this concept and set up an official program, specific management objectives would need to be defined for a geographic area of interest, and analysis would need to be conducted if and when a flow enhancement project is being considered. This exception is designed to provide the opportunity to consider and allow flow enhancement strategies that take advantage of higher or excess flows to be implemented while maintaining the long-term beneficial impacts to populations (e.g. steelhead and bull trout). Applicable permits would have to be obtained from Ecology, WDFW and other agencies. Analysis for the applicable permits would include confirming adequate water was available during the desired time period, and ensuring that flow enhancement strategies would provide long-term benefit to salmonids.

6.0 Basis for Water Reservations

The previous section discussed the overall framework for developing, managing, and granting use of water reservations. This section describes the method used to derive the actual water reservation quantities.

WDFW has proposed an approach in other watersheds based on a quantity equal to 1 to 2 percent of the 90% exceedance flow in the driest period (typically August - September) as acceptable for water reservation (Beecher, 2004) . These reductions were considered tolerable as long as additional flow protection is included (e.g. adoption and implementation of instream flows and closures). Many of the streams in WRIA 35 do not have sufficient flow data to determine the exceedance flows. However, many have recent data (3 years or less) that can be used to qualitatively evaluate the types of flow that occur during the low flow months.

Table 6 lists the streams where closures have been recommended. Those streams with no flow data or not enough data include Pataha Creek, Penewawa Creek, Charley Creek, NF and SF Asotin Creek, George Creek. Of those streams with data, many of the smaller streams have flows that range less than 1 cfs during the driest periods. These streams include Pataha Creek,

Almota Creek, Couse Creek and Tenmile Creek. In these cases, WDFW has recommended that no reserve be defined, because they argue that these small streams are too sensitive to flow reduction. Those streams with flow data and which show higher flows periods (5 cfs or greater) during the dry include Tucannon River, Deadman Creek, Alpowa Creek, Asotin Creek, and Joseph Creek. Table 6 lists the flows that equal to 1 percent and 2 percent of the 90% exceedance flows. It should be kept in mind that many of the stream listed in the table have very short periods of record (3 years or less) and that the values are not considered statistically "stable." However, they can still be used to indicate which streams should not have flow reservations because of the limited flows available during the low flow periods.

Table 6. Basis for Flow Reserves Using Fraction of Exceedance Flow

Stream[1]	Flow Equating to 2% of 90% Exceedance Flow	Flow Equating to 1% of 90% Exceedance Flow	90% Exceedance Flow or Range of Flows based on Available Data[2]
Tucannon/Pataha IA Total	**0.86 cfs**	**0.43 cfs**	
Tucannon River	0.86	0.43	43 cfs (August)
Pataha Creek	NA	NA	Not available
Middle Snake IA Total	**0.14 cfs**	**0.07 cfs**	
Deadman Creek	0.04 cfs	0.02 cfs	~2 cfs in August
Penewawa Creek	NA	NA	Not available
Almota Creek	< 0.1 cfs	< 0.1 cfs	Range of flows <1.0 cfs in August
Alpowa Creek	0.1 cfs	0.05 cfs	~ 5 cfs in August
Asotin IA Total	**0.60 cfs**	**0.30 cfs**	
Asotin Creek (above George Creek)	0.6 cfs	0.3 cfs	~30 cfs in August
George Creek	NA	NA	Not available
Tenmile Creek	< 0.1 cfs	< 0.1 cfs	Range <1.0 cfs in August
Couse Creek	< 0.1 cfs	< 0.1 cfs	Range <1.0 cfs in August
Grande Ronde IA Total	**0.30 cfs**	**0.15 cfs**	
Joseph Creek	0.30 cfs	0.15 cfs	~15 cfs in August

[1] Flow data at these streams is based on gauges installed at or near the mouth.
[2] With the exception of the USGS gauges at Tucannon River, a 90% exceedance flow is estimated based on the range of flows over the 3 year period. The values are likely to change as more data becomes available.

As discussed in the management framework, the reservations should also be consistent with predicted land use and existing zoning levels. Based on estimates from the Level 1 Assessment, demands from rural development relying on domestic wells will remain steady or decline slightly over the next 20 years. In addition, based on discussions with the planning departments of the counties within WRIA 35, recently issued permits for development of rural single-family residence using domestic wells have been on the order of 5 to 20 permits per year for each of the counties for their *entire* jurisdiction (i.e. including those areas outside WRIA 35). In the portions of Whitman County in WRIA 35, domestic well developments are not expected because of the topography and character of the land. Full build-out of the area along the Tucannon River and Pataha creek in WRIA 35 is on the order of 25 permits. Asotin County has a more complicated outlook for estimating domestic well needs, because of their current zoning, but again the number of permits issued by the County for the area within WRIA 35 has been less than approximately 10 permits per year over the past two to three years.

Assuming 5,000 gallons per day (gpd) of use for a domestic well, the instantaneous rate of use is 0.0077 cfs per permit issued. Table 7 shows the resulting number of domestic wells that would

be allowed for each implementation area over the 20-year planning period using the flow reserves based on "2% of the 90% exceedance flows" derived in Table 6. As Table 7 shows, the resulting average number of wells per year within each implementation area is reasonable based on the projected rural development and recent permits issued. It should be kept in mind that the 5,000 gpd is based on the limits placed on exempt well use and is very conservative in terms of actual water used. Single family residences typically use more on the order of 800 gpd.

The Planning Unit may wish to allocate a smaller reservation within the Tucannon/Pataha area based on the build-out limits (25 lots remaining), while increasing the reservation in the Asotin area because of the higher zoning densities in Asotin County. Table 7 also shows adjustments in the reservations to account for better consistency with zoning and potential areas of rural development. *This adjusted reserve is used as the recommended value for the water rights reservation for domestic wells.* Although the assumed development is an educated guess at this time, it does provide a basis for defining a water rights reservation for instantaneous rate.

Table 7. Basis for Flow Reserves Using Estimates of Domestic Development

Implementation Area	Instantaneous Reserve, cfs(1)	Number of domestic wells(2)	Closed Stream where Domestic Wells Reservation is allowed(3)	Adjusted Instantaneous Reserve and Number of Wells (4)
Tucannon/Pataha	0.86 cfs	112 *Average of 5+ wells per year*	Tucannon River mainstem	0.5 cfs (65 wells)
Middle Snake River	0.14 cfs	18 *Average of ~1 well per year*	Deadman Creek Alpowa Creek	0.15 cfs (20 wells)
Asotin	0.60 cfs	78 *Average of ~4 wells per year*	Asotin Creek mainstem (George Cr. Unknown)	0.8 cfs (104 wells)
Grande Ronde	0.30 cfs	39 *Average of ~2 wells per year*	Joseph Creek	0.3 cfs (40 wells)

(1) Based on 2% value of the 90% exceedance flows shown in Table 6.
(2) Assumes 5,000 gpd per well (0.0077 cfs); calculated by dividing the reserve by 0.0077 cfs. For example for the Tucannon it is 0.86 cfs/0.0077 cfs = 112 domestic wells. The average is the total divided by a 20-year planning period.
(3) List of closed streams where domestic wells can be developed and from which reserved water is allocated.
(4) Adjusted reserve based on a predetermined number of wells allowed in the drainage area.

Based on the information presented in Tables 6 and 7, recommendations for water rights reservations for each implementation area are listed in Table 8. As discussed previously, the only reservations for municipal, industrial and other uses is for the City of Pomeroy and Town of Asotin. Pomeroy needs a reservation for an additional 67 acre-ft (0.093 cfs) of annual water rights, while Asotin needs an additional 82 acre-ft (0.11 cfs) of annual water rights to meet their 2025 average day demands. The reservations for these municipal needs are also included in Table 8.

Table 8. Summary of Recommended Water Reservations by Implementation Area		
Implementation Area	**Instantaneous Reservation for Domestic Wells[1]**	**Instantaneous Reservation for Other Uses[2]**
Tucannon	0.5 cfs	NA
Pataha	None	0.093 cfs
Middle Snake	0.15 cfs	NA
Asotin	0.8 cfs	0.11 cfs
Grande Ronde	0.3 cfs	NA

[1] Based on conservative estimate of domestic well development
[2] Accounts for City of Pomeroy's (0.093 cfs) and Town of Asotin's (0.11 cfs) projected increase in average day demands.

Applications for the reservation will be reviewed, analyzed and processed by Ecology in consultation with WDFW. Because the stream flow data available does not define a water reserve for specific streams, use of the reservation would be managed by Ecology, who would also track the total number of domestic wells in comparison with the number allowed by the reservation.

7.0 Flow Enhancement – Target Flows

Flow enhancement (or target flow) is the third component of the stream flow management framework. The target flow represents an increment of flow in cubic feet per second that can realistically be achieved through operational or structural improvements in irrigation and other municipal and domestic water use and management practices. As outlined in Tech Memo 3, flow enhancement targets are applied only to select management points based on the following:

- Stream segments where flow enhancement is expected to be most biologically important for fish and where low flows are predominant factors that would improve habitat conditions.
- Areas downstream of existing, relatively substantial diversions or water users.
- Management points that effectively consolidate and account for flow enhancement activities.

The management points of interest and reviewed in detail in Tech Memo 3 were those associated with the Tucannon River and Asotin Creek. Based on a review of water rights and irrigated acres for both stream systems, it was concluded that limited opportunities exist for flow enhancement, although the local conservation districts continue to work with landowners to identify opportunities. Table 9 summarizes the flow targets based on this work.

The Columbia Conservation District has been working with irrigators in the Tucannon implementation area over the past two to three years to improve irrigation efficiencies and to place the water savings into the State's Trust Water program for instream use. Since 2004 the Columbia Conservation District has accounted for 10 cfs of irrigation efficiency savings into Trust. An additional 3 cfs of potential savings is expected to be placed into trust for a total of 13 cfs of instream flow for the Tucannon River. The irrigation efficiencies occur higher in the system (above Pataha Creek confluence), and so a significant portion of the Tucannon River will receive the increased flow benefits.

The Asotin County Conservation District (ACCD) is also working with irrigators in the Asotin County implementation area to identify any opportunities for irrigation efficiencies. However, there are only limited irrigated acres (~ 90acres throughout the implementation area) and efficiencies would not likely yield significant flows for augmentation. At this time, there are no commitments to develop flow targets for the Asotin implementation area.

Table 9. Flow Targets for Tucannon River and Asotin River

Management Point	Management Point Objective	Basis and Flow Enhancement Strategy
1 – Tucannon River below Smith Hollow	▪ **Total of ~ 13 cfs flow enhancement target** *Note: Flow target applies from period June through October when most of the irrigation savings would occur.*	▪ Conservation savings include those placed into trust since 2004. ▪ Voluntary short-term leases by existing water right holders to leave water in the stream during low flow periods; primarily above MP-3 and MP-1 ▪ City of Pomeroy relies on groundwater as its primary source; therefore, minor conservation savings would not benefit streams significantly from MP-4.
12 – Asotin River at mouth	▪ **Maintain flows**	▪ Limited potential for irrigation savings in lower Asotin ▪ Potential for <0.5 cfs of rights for lease or relinquishment.

Other alternatives for flow enhancement strategies include storage alternatives (shallow aquifer storage or aquifer storage and recovery). The Planning Unit has investigated options for storage and have not found a feasible alternative to date based on the hydrogeology of the areas studied. However, future sites and other projects may be identified and the strategy should be updated at that time.

8.0 Flow Monitoring

In order to manage flows, streams must be monitored consistently. For purposes of the flow management framework, flow monitoring is needed to:

- Provide basic data needed to assess current status and long-term trends in stream flow.
- 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.

The list of active and historical gauges in WRIA 35 is documented in the Level 1 Assessments and in the Level 2 Instream Flow Assessment Tech Memo 1. The active gauges are listed in Table 10. At this time all of the gauges are recommended to continue being operated and maintained, with some changes as described below.

To better implement the streamflow management recommendations in the previous sections, some changes are recommended to the flow monitoring program. The recommended changes are as follows:

- The telemetry gauge at Deadman Creek near Gould City (35M100) can be removed and installed at George Creek to replace the manual stage height at that location. The management points at Deadman Creek have been combined, and George Creek being a priority restoration stream would be better served with a telemetry gauge.
- Exchange the telemetry gauge and manual stage height gauge on Asotin Creek, so that the telemetry gauge (35D100) is located below George Creek and the manual stage height gauge (35D080) is located above George Creek. The telemetry gauge is needed at Asotin Creek below George Creek to monitor the instream flows for MP-12.
- At a minimum a manual height staff gauge should be installed at the mouth of Penewawa Creek since it is included as a stream to be closed.

Table 10. Summary of Active Flow Monitoring Stations in WRIA 35

Gauge ID	Location	Agency	Data Type	Period of Record
Tucannon/Pataha Implementation Area				
13344500	Tucannon River near Starbuck	USGS	Telemetry (daily)	1914-1917; 1928-1931; 1958-1990; 1994-Present
35B150	Tucannon River near Marengo	Ecology	Telemetry (daily)	June 2003 - present
35F050	Pataha Creek near mouth	Ecology	Telemetry (daily)	June 2003 - present
35F100	Pataha Creek near Pataha	Ecology	Manual stage height	June 2003 - present
Middle Snake Implementation Area				
13334300	Snake River near Anatone	USGS	Telemetry (daily)	1959-2002; 1992-Present
35K050	Alpowa Creek near mouth	Ecology	Telemetry (daily)	June 2003 - present
35L050	Almota Creek near mouth	Ecology	Telemetry (daily)	June 2003 - present
35M060	Deadman Creek near mouth	Ecology	Telemetry (daily)	June 2003 - present
35M100	Deadman Creek near Gould City	Ecology	Telemetry (daily)	June 2003 - present
35N050	Meadow Creek near mouth	Ecology	Manual stage height	June 2003 - present
Asotin Implementation Area				
3334450	Asotin below confluence of NF and SF Asotin	USGS	Telemetry (daily)	2001 - present
35D080	Asotin Creek below George Cr.	Ecology	Manual stage height	Feb. 2005 - present
35D100	Asotin Creek above George Cr.	Ecology	Telemetry (daily)	Feb. 2005 - present
35P050	George Creek near mouth	Ecology	Manual stage height	Mar. 2006 - present
35H050	Couse Creek near mouth	Ecology	Manual stage height	June 2003 - present
35J050	Tenmile Creek near mouth	Ecology	Manual stage height	June 2003 - present
Grande Ronde Implementation Area				
35G060	Joseph Creek near mouth	Ecology	Telemetry (daily)	June 2003 - present

9.0 Implementation Considerations

9.1 Adopting Recommendations into Rule

The methodology for developing instream flows developed as part of the watershed plan can be applied to other management points once adequate instream flow (IFIM) and stream flow data become available. In the meantime, the instream recommendations developed for the three management points and the closure recommendations can be adopted into a *Water Resources Control Program for WRIA 35* in the Washington Administrative Code (WAC). In order to adopt these recommendations in WAC, a rule development process must be completed. The basic steps are listed below and in general, this process can take a year or more to complete.

- Initiate rule-making process with Ecology
- Complete rule-development plan
- Publish rule-making intent in State Register
- Complete SEPA checklist to make Threshold Determination
- Develop rule language and publish in State Register
- Conduct public hearing and comment period
- Issue Final Environmental Impact Statement
- Director adopts final rule and rule becomes effective

The Planning Unit will need to initiate this process with the Department of Ecology.

9.2 Long-term Implementation Outline

The preliminary flow enhancement targets recommended in this Plan needs to be implemented in an adaptive management framework. A general outline of activities over the next 5-years, 10-years and beyond is listed below.

- Next 1-5 years
  - Continue flow monitoring to confirm flow conditions and benefits from initial operational changes. Make necessary changes to flow monitoring program to meet the needs of the streamflow management recommendations.
  - Conduct necessary instream flow studies (IFIM or toe-width, etc.) where needed.
  - Transfers and changes to achieve operational flexibility and support for instream and out-of-stream management objectives. Retire selected water rights.
  - Adopt instream flows and closures in management plan by Washington Administrative Code (WAC).
  - Evaluate new opportunities for additional operational or structural changes.
  - Conduct hydrogeologic studies to characterize hydraulic connectivity along priority streams or where water rights needs occur.

- Next 6-10 years
  - Continue flow monitoring to confirm flow conditions and benefits from initial operational changes.
  - Continue hydrogeologic studies where necessary.
  - Review population and water demand projections and compare against available water rights. Initiate process for updating water reservations if necessary.
  - Based on validated field data, implement major structural changes to system such as off-stream storage, channel restoration and/or shallow aquifer system recharge in selected areas.

- Beyond year 10
  - Review need to update WAC and initiate process if necessary.
  - Continue implementing, evaluating and refining flow management approach.

10.0 References

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Appendices

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Appendix A

Response-to-Comments
Instream Flow Assessment
Technical Memoranda (1, 2a, 2b, 3)

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Response to Comments (June 9, 2006) WRIA 35 Instream Flow Assessment Technical Memoranda		
No.	**Comment**	**Response**
James Pacheco, Instream Flow Biologist, Department of Ecology		
1	TM #1, 1.0 Introduction: 2nd paragraph "requires that planning units…and provide water for future out-of-stream needs". This is misleading as there is no requirement to provide water for future out-of-stream uses. Instead, as you correctly mention in other areas of the report (e.g. 1.1), the planning is to develop strategies to meet future demands. To accomplish this, the planning unit needs to refer to their water quantity estimation to see if there is any additional water that could be appropriated: The Water Quantity assessment (which is required) SHALL include, "An estimate of the surface and ground water available for further appropriation, taking into account the minimum instream flows…" RCW 90.82.070 (1)(g).	Text in final memo will be revised to state that the planning is to develop strategies to meet future demands rather than being "required" to meet future out-of-stream needs.
2	TM #1, Sec. 1.1, 2nd bullet "…strategies to improve instream flows". You are misusing the term. To improve an instream flow would mean changing the flow number. If you are talking about adding water to the stream then you should say, "improve stream flow". If you are trying to achieve the instream flow then say, :strategies to achieve instream flows".	Use of the term "instream flow" will be revised as suggested in the final memo.
3	TM #1, 3rd bullet "…strategies to improve instream flows". Same as above.	See No. 2.
4	TM #1, Sec. 3.1, 2nd set of bullets, "Continue to allow exempt wells under the existing statutory exemption". This is not a viable strategy. Exempt wells are exempt only from the permit process. They are not exempt from the priority date system, closures, or impairment restrictions. However, exempt wells could get water from the reserve.	Comment noted. This strategy option will be revised to state that a reservation can be defined to provide for future withdrawals for exempt wells.
5	TM #1, General note. Your strategies do not mention water availability. Before additional water can be appropriated, you need to refer to your determination of how much is available. Again, the Water Quantity assessment (which is required) SHALL include, "An estimate of the surface and ground water available for further appropriation, taking into account the minimum instream flows…" RCW 90.82.070 (1)(g). It would also be nice to see a strategy for making existing water use go further.	Water availability is considered implicit in developing the recommendations for minimum instream flows and the overall stream flow management strategies selected. A discussion will be included that both estimates of water demands and water availability will be considered.
6	TM #1, Sec. 3.2, 3rd paragraph, "With respect to target flows…". Metering can show how much less is being taken. So although the flow improvement may be hidden by the stream's yearly variability, you could have clearly measured flow improvement. This is one reason why I like your approach to target flows.	Comment noted. A reference to metering to account for changes in the flow regime will be added to the text.
7	TM #2b: Sec. 1.1, 4th paragraph "Ecology has suggested that the use of instream flow rules are preferred over closures…" Not exactly. <u>When a closure is warranted, we prefer closures backed up with instream flows…so we prefer both. This is because a closure by itself cannot protect the stream from the potential harm caused by water right transfers or changes.</u> 2nd bullet "Apply year around closures…" A closure means that water is unavailable for further appropriation. If a seasonal water use would not interrupt habitat forming flows (2nd sub-bullet) then water is available. Therefore, a seasonal closure during the dry season and a defined amount of water available during the wet season would be more appropriate.	Change will be made as suggested, as necessary in final memo.

Response to Comments (June 9, 2006) WRIA 35 Instream Flow Assessment Technical Memoranda		
No.	**Comment**	**Response**
8	TM #2b, Sec. 2.0, 3rd bullet: "Continue to allow exempt wells under the existing statutory exemption". This is not a viable strategy. Exempt wells are exempt only from the permit process. They are not exempt from the priority date system, closures, or impairment restrictions. However, exempt wells could get water from the reserve.	See response to No. 4.
Mimi Wainwright and Bill Neve, Department of Ecology		
9	TM #1, Section 1.0, Pg 1 2nd Pp – The Watershed Planning Act (Chapter 90.82 RCW) does not "require that planning units address the instream flow component…" rather it gives planning units the "option" of choosing the instream flow component. Chapter 90.82 RCW provides the statutory framework for planning units to formally recommend instream flows for adoption to Ecology and gives Ecology the authority to set those flows in regulation under that Chapter. Planning Units are *required* to assess water availability, future use and to develop strategies that work toward meeting instream and out of stream demands.	Comment noted. Text in final memo will state that the Watershed Planning Act gives planning units the "option" of choosing the instream flow component.
10	TM #1, Section 1.0, Pg 1 4th bullet – might be more concise to say "**strategies**" instead of **policies**.	Comment noted.
11	TM #1, Section 1.1, Pg 1st bullet – not understanding the benefit of "updating" the SWSLs?? Could you elaborate on what you are recommending? If this translates into an obligation or recommendation for WDFW and Ecology to complete instream work on a particular stream, under what circumstances would it make sense to update a SWSL in lieu of rulemaking?	Updating SWSLs in this sense means reviewing whether the limitations are appropriate based on current information and whether they should be adopted into rule.
12	TM #1, Section 2.1, Pg 4 Table 1 – Is the Instream Flow Study category limited to those streams with IFIM/PHABSIM data only?	Yes.
13	TM #1, Section 2.2, Pg 8 1st Pp – might be better to use "**draft**" instead of "**pilot**" management points and "target flows **may**…." instead of **will**.	Change will be made as suggested, as necessary in final memo.
14	TM #1, Section 2.2, Pg 8 2nd & 3rd bullet – consider adding an action recommendation for instream flow analysis and or hydrologic data collection.	Recommendation for instream flow analysis and hydrologic data collection will be added to the final memo.
15	TM #1, Section 2.2, Pg 8 4th bullet – better to say closed by SWSL instead of administrative closure in case folks confuse it with a regulatory closure.	Change will be made as suggested, as necessary in final memo.
16	TM #1, Section 2.2, Pg 8 last Pp – why focus on updating administrative closures (assuming you mean SWSLs here) instead of closures in rule?	The approach assumes that as part of the review, any updates or changes to SWSLs will be included as closures in rule.
17	TM #1, Section 3.1, Pg 9 1st Pp – should use "statutory" instead of "regulatory" – there are 4 primary statutes that provide a legal basis related to instream flows: Chapter 90.22 RCW, Chapter 90.54 RCW, Chapter 75.20 RCW & Chapter 90.82 RCW. Might want to add that Ecology is obligated to consult with WDFW on instream flows per MOA.	Change will be made as suggested, as necessary in final memo.

Response to Comments (June 9, 2006) WRIA 35 Instream Flow Assessment Technical Memoranda		
No.	**Comment**	**Response**
18	TM #1, Section 3.1, Pg. 9 1st P: **…defining surface water source limitations or "administrative closures**". A SWSL is not an "administrative closure" in and of itself; it is a compilation of flow limiting actions/recommendations that have been taken on a particular body of water. The Walla Walla River SWSL has an "administrative closure" listed through rule in a Basin Management Project, WAC 173-532. Asotin Creek has low flows recommended to Ecology by F&G, but these are not "administrative closures or minimum flows". These are low flow recommendations made to Ecology by F&W pursuant to RCW 75.20.050 (re-codified as RCW 77.57.020) with respect to a particular water right application.	Change will be made as suggested, as necessary in final memo.
19	TM #1, Section 3.1, Pg. 9, last P, 1st Bullet: **Minimum instream flows do not affect existing water rights**. I would add at the end …"with a priority date senior to that of the minimum instream flow".	Change will be made as suggested, as necessary in final memo.
20	TM #1, Sec. 3.1, Pg. 10, 1st Bullet: **Any water right issued after the priority date for the minimum instream flow will be junior to it, and therefore, will include restrictions or conditions;** I would suggest changing this language to read, "Any new water right issued after the priority date of the minimum instream flow will be junior to it, and may include restrictions or conditions with respect to the minimum instream flow."	Change will be made as suggested, as necessary in final memo.
21	TM #1, Sec. 3.1, Pg. 10, 2nd P, Last Bullet: **Provision that allows for changes to existing water rights.** I'm not sure how this pertains to establishing allowances or exceptions to future minimum instream flows? Is this meant to mean a provision to allow changes to existing water rights that would impair that instream flow? If so, that should be clarified - maybe just by adding the language specifying what they mean. "… that would otherwise create impairment to that minimum instream flow."	Change will be made as suggested, as necessary in final memo.
22	TM #1, Sec. 3.1, Pg. 10, 3rd P 1st sentence - Discussion of SWSL: Why "..predecessor agencies (Ecology)…" when WA Dept of Ecology has been a) Walter Pollution Control Commission b) Department of Water Resources?	Comment noted. This was referring to those SWSLs issued before being the agency that it is presently.
23	TM #1, Sec. 3.1, Pg. 10, 3rd P - Discussion of SWSL. A SWSL is a compilation of agency actions and recommendations with respect to water diversions and instream flows on a particular stream. The SWSL may include an administrative closure or minimum flow, it may include recommendations for a closure or low flow by F&W, it will indicate whether an adjudication is complete or in process; in short the SWSL is not an administrative action in and of itself, it is just a summary of what flow related actions and recommendations have been made with reference to a particular stream. Ecology is not required to accept the recommendations made to Ecology with respect to closures and minimum flows. Using the terms "administrative minimum flow" and "administrative closure" should be reserved for use in those instances where they have been formally adopted by rule. The closures and minimum flows recommended by F&W pertain to specific applications, are not necessarily generally applicable to all applications from that source, and Ecology is not legally bound to accept them when evaluating a particular application.	Comment noted. Changes will be made in text for clarification as suggested.
24	TM #1, Sec. 3.1, Pg. 11, 1st P, 1st Bullet: A F&W recommendation for a minimum flow or closure pertains specifically to the application to which they are commenting on; Ecology will consider the recommendation with respect to the water body at the applied for point of diversion.	Comment noted. Changes will be made in text for clarification as suggested.
25	TM #1, Table A-1, Pg A-5 MP 5 Meadow Creek: should note the adjudication	Adjudication will be noted as suggested.
26	TM #1, Table A-1, Pg A-8 MP 17 Grande Ronde: should note the SWSL	SWSL will be noted as suggested.

Response to Comments (June 9, 2006) WRIA 35 Instream Flow Assessment Technical Memoranda		
No.	**Comment**	**Response**
27	TM #1, Table A-2, Pg A-10: "**Alpowa**" instead of "**Alpoa**"	Change will be made to the typo.
28	TM #1, Table A-3, Pg A-13 Water Conservation: use state "guidance" instead of state "requirements"	Change will be made as suggested, as necessary in final memo.
29	TM #1, Table 1-3, Pg A-14 Enforcement: WRIA 35 **has** a watermaster	Reference to establishing a watermaster will be removed.
30	TM #2b, Section 1.1, Pg 2, 1st Pp – could include at the end of the first sentence "….including water rights for temporary, seasonal and storage uses."	Change will be made as suggested, as necessary in final memo.
31	TM #2b, Section 1.2,Pg 2, 1st Pp – this paragraph could confuse folks unless it's made a bit more clear. Ecology refers to regulatory flows as administrative flows also so it may help if you add something about SWSLs being utilized in making water right decisions in the absence of flows/water management regulations.	Comment noted. Changes will be made in text for clarification as suggested.
32	TM #2b, Section 2.0, Pg 5 Note: this statement is not correct, water reservations or allocations may be for irrigation, commercial/industrial or municipal use.	Comment noted. Changes will be made in text.
33	TM #2b, Section 2.1, Pg 6 1st Pp: The court case should be cited here; 1994 WA State Supreme Court decision, John Postema vs. Pollution Control Hearings Board.	Change will be made as suggested.
34	TM #2b, Section 2.2, Pg 6 1st Pp: should be "city" of Asotin?	Change will be made as suggested.
35	TM#3, a general comment is consideration for adding a recommendation for evaluating the success of irrigation efficiency projects; i.e.. metering, collecting flow data.	Comment noted. Changes will be made in text.
Terra Hegy, Washington Department of Fish and Wildlife		
36	TM#1: Table 3, page 15: This table would be more useful if the name of the stream were included with each numbered MP.	Change will be made as suggested, as necessary in final memo.
37	TM#1: We request that Joseph Creek, trib to the Grande Ronde, be included as a management point. Glen Mendel of Fish Program concurs. Dave Karl suggested perhaps instead of Penawawa (MP 8), which is a lower priority as regards fish resources.	During the February 9, 2006 Planning Unit meeting, the Planning Unit confirmed that Joseph Creek would be included as a management point. The Planning Unit will be asked whether MP-8 Penawawa should be retained as a management point.
38	TM#1: Concern was voiced about withdrawal of water at our Wildlife Area. WDFW staff checked water right records and talked with the Wildlife Manager at Chief Joseph. They use a very small percentage of Joseph Creek, even in low flow of summer. Because it is a substantial tributary of the Grande Ronde, we still feel Joseph Creek should be considered for instream flow setting.	Comment noted. See response to comment #37.
39	TM#1: Neither Ecology nor USGS has a gauge on George Creek (MP 13), however, it might be possible to use hydrology from 2 gauges on Asotin Creek. In addition, George Creek experienced a lot of flooding a few years ago and even changed channels. It appears to be in a state of dynamic change. You might wish to leave this one till the later stage.	Comment noted. The Planning Unit will be asked whether to leave MP-13 George Creek for a later stage for setting minimum instream flows.

Response to Comments (June 9, 2006) WRIA 35 Instream Flow Assessment Technical Memoranda		
No.	**Comment**	**Response**
40	TM#1: WDFW recommends that 10 mile Creek (MP 15) and possibly Couse Creek (MP 16) be moved up in the schedule. 10 mile has good steelhead spawning and Couse has some too.	The Planning Unit will be asked whether to move MP-15 and MP-16 forward in priority for setting minimum instream flows. However, the one of the issues with these management points is the lack of instream flow studies and historical stream flow data.
41	TM#1: You might want to check with Oregon to see if they have any instream flows on the Grande Ronde.	ODFW and OWRD will be contacted to ask about any instream flows in the Grande Ronde and its tributaries.
42	TM#2a: There is redundancy in Table 4 (in the text) and Table B-1 (in the appendix). Might be good to have just one set of the same tables to avoid confusion.	Table B-1 is included as a quick reference for the discussion included in the appendix.
43	TM#2a: Appendix A and B: I notice there are some months in the fish priority table for which there are 2's, but no 1's. sometimes there are 4 or 5 Number 2 priorities. The text indicates that "A value of 1 for a species during a particular month indicates that it should receive the highest priority for flow setting consideration." Therefore, there should always be a number 1.	The number not only indicates priority, but also the level of "activity" or "presence" during that month for the lifestage or species. If no "1" appears, this indicates that there is moderate to low activity or presence during that month for all species and lifestages of concern, and that no single species stands out as a clear priority species for pueposes of flow-setting.

Response to Comments (June 9, 2006) WRIA 35 Instream Flow Assessment Technical Memoranda		
No.	**Comment**	**Response**
44	TM#2a: It's a little bit confusing to label a column "Spawn" when the column includes 3 life stages, spawning, migration, and incubation. As an example, in Table 3, there is a note that spring Chinook is migration only, no actual spawning occurs for chinook. But it is listed in the Spawn column. Please repeat this note for Table 4.	The PHABSIM modeling that was performed for these management points included species preference curves for spawning, but not for migration or incubation. We included these related life-stages in the table to make sure that they are not forgotten in the subsequent analysis. For example, while spawning may end in December, instream flows must ensure that sufficient flows are present to support incubation for several months after that. Similarly, ensuring sufficient flow for adult migration in the late summer is very important, although the PHABSIM model doesn't address it directly. After all, if flows are insufficient for spring chinook to reach the upper basin before the high temperatures of August and September, we may not have any spawners to benefit from suitable flows in November. So, our highlighting the migration and incubation needs is an effort to make up for the deficiencies of a fairly blunt tool in PHABSIM.
45	TM#2a: Re: Under the column "Chinook spawning" in October and November, I assume the life stage is incubation. Incubation of eggs in the gravel is an extremely important life stage for the survival of a fish species. For a period of 3 to 4 months, if eggs do not receive clean, oxygenated water and the gravel remain covered with water, the eggs will not survive. Instream flows must also consider that water not drop quickly (as a management step), thus leaving eggs high and dry. Since Chinook are the priority as evidenced by migration (June, July) and spawning (Aug, Sept), then Incubation (Oct, Nov) should also be priority #1. The specific months that this applies to are: • Tucannon at Starbuck, MP1, Fall Chinook Jan through March, change 2's to 1. • Tucannon at Marengo, MP3, Spring Chinook, October to December. Change 2's to 1.	See note above(#44) regarding importance of incubation flows. Note, however, that incubation flows do not need to be as high as spawning flows. While the specific flow level required to keep redds watered depends on the shape of the stream bed, it is often estimated (by rule of thumb) as one-third to one-half of spawning flows. This is due to the fact that while spawning requires a certain amount of depth, incubation can be maintained with lower flows, as long as water remains oxygenated and the gravel substantially free of fine sediments.

Response to Comments (June 9, 2006) WRIA 35 Instream Flow Assessment Technical Memoranda		
No.	**Comment**	**Response**
46	TM#2a: You state that PHABSIM spawning flows will be used as a surrogate for migration flows. WDFW does not discourage watershed groups from using spawning flows from PHABSIM as a surrogate for migration flows. However, I would urge the Planning Unit to gather and to consider any other data such as field observations in order to determine appropriate migration flows.	The Planning Unit is using available resources and information to develop the minimum instream flow levels. If additional funding is available, stream survey and field observations will also be considered.
47	TM#2a: In table A-4, for MP 3, the months of October through January have no #1. This creates a problem in balancing the various life stages. I recommend the planning unit choose one as a priority, then that life stage would be considered highest.	See response to comment #43.
48	TM#2a: Table 5 and 6: There is very limited hydrologic data available (Ecology has a telemetered gauge since June 2002). This could be a problem, since an accurate 10% exceedance may be difficult to derive.	Comment noted. This is a particular issue for MP-3 at Marengo. The Planning Unit will need to decide whether to recommend an "interim" flow level because of this shorter period of record. One option that has been discussed is to reconsider the flow levels, as necessary every five years to ten years as the flow record increases.
49	TM#2a: References: Please footnote the tables in the appendices as to their sources.	Comment noted. Change will be made as suggested, as necessary in final memo.

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Appendix B

Fish Distribution Information For MP-1a, MP-1b and MP-12

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Management Point: **1a Tucannnon Mouth to Territorial Road**

	Steelhead					Spring Chinook					Fall Chinook					Bull Trout				
	Adult			Juvenile		Adult			Juvenile		Adult			Juvenile		Adult			Juvenile	
	M	S	I	M	R	M	S	I	M	R	M	S	I	M	R	M	S	I	M	R
October 1-15	2			2	1					1	1					2			2	1
October 16-31	2			2	1				2	1	1	2	2			1			1	1
November 1- 15	2			2	1				1	1	1	1	1			1			1	1
November 16-30	2			2	1				1	1	1	1	1			1			1	1
December 1-15	3	3	3	3	1				2	1	2	2	1			2			2	1
December 16-31	3	2	2	3	1				3	1			1			2			2	1
January 1-15	3	2	2	3	1				3	1			1			3			3	1
January 16-31	2	2	2	3	1				3	1			1			3			3	1
February 1-15	2	2	2	3	1				3	1			1			3			3	1
February 16-28	2	1	2	3	1				3	1			1			3			3	1
March 1-15	1	1	1	3	1				3	1			1			3			3	1
March 16-31	1	1	1	2	1	3			2	1			1	2	2	3			3	1
April 1-15	1	1	1	2	1	2			1	1			2	1	1	2			2	1
April 16-30	1	1	1	1	1	1			1	1			3	1	1	2			1	1
May 1-15	2	2	1	1	1	1			1	1				1	1	1			1	1
May 16-31	3	3	2	1	1	1			1	1				2	2	1			2	2
June 1-15	3		2	2	1	2			2	1						2				
June 16-30			2	3	2	3			3	2										
July 1-15			3																	
July 16-30																				
August 1-15																				
August 16-31																				
September 1-15	3				3					3	2									
September 16-30	2				2					2	2									

Key:

M - migration
S - spawning
I - incubation
R - rearing

1	- High observed activity/presence
2	- Moderate observed activity/presence
3	- Low observed activity/presence
	- Occasional or no observed activity/presence or data gap

Management Point: **1b Tucannnon Territorial Road to Marengo**

	Steelhead					Spring Chinook					Fall Chinook					Bull Trout				
	Adult			Juvenile		Adult			Juvenile		Adult			Juvenile		Adult			Juvenile	
	M	S	I	M	R	M	S	I	M	R	M	S	I	M	R	M	S	I	M	R
October 1-15	2			2	1			2		1	1					2			2	1
October 16-31	2			2	1			2	2	1	1	2	2			1			1	1
November 1- 15	2			2	1			2	1	1	1	1	1			1			1	1
November 16-30	2			2	1			2	1	1	1	1	1			1			1	1
December 1-15	3	3	3	3	1			2	2	1	2	2	1			2			2	1
December 16-31	3	2	2	3	1			2	3	1			1			2			2	1
January 1-15	3	2	2	3	1			2	3	1			1			3			3	1
January 16-31	2	2	2	3	1			2	3	1			1			3			3	1
February 1-15	2	2	2	3	1			3	3	1			1			3			3	1
February 16-28	2	1	2	3	1				3	1			1			3			3	1
March 1-15	1	1	1	3	1				3	1			1			3			3	1
March 16-31	1	1	1	2	1	3			2	1			1	2	2	3			3	1
April 1-15	1	1	1	2	1	2			1	1			2	1	1	2			2	1
April 16-30	1	1	1	1	1	1			1	1			3	1	1	2			2	1
May 1-15	2	2	1	1	1	1			1	1				1	1	1			1	1
May 16-31	3	3	2	1	1	1			1	1				1	1	1			1	1
June 1-15	3		2	2	1	1			2	1				1	1	1			1	1
June 16-30			2	3	1	2			3	1				2	2	2			2	1
July 1-15			3		1	3				1				3	3	3			3	2
July 16-30					1	3				1										3
August 1-15					1	3				1										
August 16-31					1	3				1										
September 1-15	3				1	3	2	2		1	2									
September 16-30	2				1	3	2	2		1	2									

Key:

M - migration
S - spawning
I - incubation
R - rearing

1 - High observed activity/presence
2 - Moderate observed activity/presence
3 - Low observed activity/presence
(blank) - Occasional or no observed activity/presence or data gap

Management Point: **12 - Asotin Cr. at mouth to confluence of George Cr.**

	Steelhead					Spring Chinook					Fall Chinook					Bull Trout				
	Adult			Juvenile		Adult			Juvenile		Adult			Juvenile		Adults/Subs			Juvenile	
	M	S	I	M	R	M	S	I	M	R	M	S	I	M	R	M	S	I	M	R
October 1-15				2	1						1	1	1			2			2	1
October 16-31				2	1				2		1	1	1			1			1	1
November 1- 15				2	1				1		1	1	1			1			1	1
November 16-30	3			2	1				1		1	1	1			1			1	1
December 1-15	3	3	3	3	1				1		2	2	1			2			2	1
December 16-31	2	2	2	3	1				2				1			2			2	1
January 1-15	1	2	2	3	1				2				1			3			3	1
January 16-31	2	2	2	3	1				3				1	2	2	3			3	1
February 1-15	2	2	2	3	1				3				1	1	1	3			3	1
February 16-28	2	1	2	2	1				2				1	1	1	3			3	1
March 1-15	1	1	1	2	1				1				1	1	1	3			2	1
March 16-31	1	1	1	1	1				1				2	1	1	3			2	1
April 1-15	1	1	1	1	1				1				2	1	1	2			1	1
April 16-30	1	1	1	1	1				1				2	1	1	2			1	1
May 1-15	2	1	1	1	1	2			1				2	1	1	1			1	1
May 16-31	2	1	2	1	1	1			1					2	2	1			2	2
June 1-15	3	2	2	1	1	1			1							2				
June 16-30		3	2	2	2	2			2											
July 1-15			3																	
July 16-30																				
August 1-15																				
August 16-31																				
September 1-15	3				3					3										
September 16-30	2				2					2										

Key:

M - migration
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1	- High observed activity/presence
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Appendix C

Weighted Usable Area for Tucannon and Asotin

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MP-1a and MP-1b. Tucannon Subbasin

Percentage-of-Maximum WUA Values for Tucannon near Smith Hollow.						
Flow (cfs)	Steelhead		Chinook		Bull Trout	
	Spawn	Juvenile	Spawn	Juvenile	Spawn	Juvenile
25.0	8%	36%	28%	88%	**91%**	10%
30.0	15%	45%	38%	**93%**	**95%**	13%
35.0	24%	55%	48%	**98%**	**97%**	17%
40.0	33%	63%	57%	**100%**	**98%**	21%
45.0	44%	71%	66%	**99%**	**99%**	26%
50.0	55%	78%	74%	**98%**	**100%**	34%
55.0	65%	83%	80%	**98%**	**100%**	41%
60.0	74%	87%	86%	**98%**	**99%**	48%
65.0	81%	**90%**	**90%**	**98%**	**98%**	53%
70.0	88%	**93%**	**94%**	**97%**	**97%**	59%
75.0	**92%**	**96%**	**97%**	**96%**	**95%**	53%
80.0	**96%**	**98%**	**99%**	**95%**	**94%**	67%
85.0	**98%**	**99%**	**100%**	**93%**	**92%**	71%
90.0	**98%**	**100%**	**100%**	**90%**	**90%**	74%
100.0	**100%**	**99%**	**97%**	83%	86%	79%
105.0	**100%**	**98%**	**95%**	78%	84%	82%
110.0	**100%**	**97%**	**93%**	73%	81%	84%
120.0	**100%**	**96%**	86%	65%	76%	88%
130.0	**99%**	**96%**	79%	61%	71%	**93%**
140.0	**97%**	**96%**	71%	58%	66%	**97%**
150.0	**95%**	**94%**	64%	55%	62%	**99%**
160.0	**94%**	**93%**	57%	51%	59%	**100%**
170.0	**92%**	**92%**	52%	48%	56%	**100%**
180.0	**90%**	**90%**	47%	47%	52%	**99%**
190.0	87%	87%	44%	46%	49%	**97%**
200.0	85%	84%	42%	45%	47%	**95%**
300.0	58%	60%	29%	51%	30%	70%
400.0	39%	56%	26%	61%	26%	47%
500.0	28%	61%	22%	71%	22%	38%

MP-12 Asotin Creek

Percentage-of-Maximum WUA Values for Asotin near mouth.						
Flow (cfs)	Steelhead		Chinook		Bull Trout	
	Spawn	Juvenile	Spawn	Juvenile	Spawn	Juvenile
15.0	5%	38%	9%	42%	**100%**	33%
20.0	9%	49%	19%	56%	82%	37%
25.0	14%	59%	31%	64%	69%	40%
30.0	20%	67%	43%	69%	58%	41%
35.0	27%	74%	54%	71%	51%	43%
40.0	36%	80%	64%	73%	46%	46%
45.0	45%	85%	72%	72%	38%	48%
50.0	54%	88%	80%	69%	33%	49%
55.0	62%	**91%**	86%	66%	30%	50%
60.0	71%	**92%**	**91%**	63%	28%	50%
65.0	79%	**94%**	**95%**	60%	25%	50%
70.0	86%	**94%**	**98%**	58%	24%	49%
75.0	**91%**	**94%**	**100%**	55%	24%	50%
80.0	**95%**	**93%**	**100%**	53%	25%	51%
85.0	**99%**	**93%**	**99%**	52%	23%	52%
90.0	**100%**	**92%**	**97%**	52%	21%	53%
100.0	**100%**	**91%**	**93%**	52%	20%	54%
110.0	**99%**	90%	89%	51%	18%	55%
125.0	83%	87%	57%	54%	12%	61%
150.0	65%	87%	35%	61%	8%	64%
175.0	49%	88%	26%	64%	4%	67%
200.0	38%	**90%**	20%	68%	3%	70%
225.0	28%	88%	17%	71%	3%	72%
250.0	22%	87%	14%	71%	2%	72%
275.0	19%	87%	11%	73%	2%	76%
300.0	17%	86%	10%	76%	2%	79%
350.0	13%	89%	7%	83%	1%	80%
400.0	11%	**93%**	6%	89%	1%	81%
450.0	9%	**95%**	6%	**93%**	1%	89%
500.0	9%	**100%**	6%	**100%**	1%	**100%**