

Explanatory notes

The wording in Tables 1 and 2 below is based on statements drawn from WID meeting minutes, WID work session notes in the mapping report (2016), the March 2017 WID planning session, and other WID documents.

The WID board will continue to review and update the goals and actions listed in Table 2, and will develop the detail of planned actions over time, as the board progresses towards a Comprehensive Plan for the WID.

Table 1. Bertrand WID priorities, desired outcomes and near-term actions

	Priority issue	Desired outcome(s): suggested text. See Table 2 for more detail on suggested actions	Near-term priority actions
1	Water quantity: water availability for agricultural use (irrigation, livestock, processing)	<i>Farmers in the Bertrand WID have secure (legal) access to sufficient water for agricultural uses.</i>	<ul style="list-style-type: none"> (2017) Complete the Flow Augmentation Project: install and monitor test pumping system, complete the final report. (2017) Surface to groundwater transfers in the WID area - support legislation & continued legal & administrative efforts
2	Water quality	<i>Agricultural activities in the Bertrand WID do not cause water quality standards to be exceeded in surface water and groundwater bodies within the WID area.</i>	<ul style="list-style-type: none"> (2017) Continue with the ongoing water quality monitoring & response program
3	Agricultural drainage	<i>Drainage infrastructure and ditches in the Bertrand WID are actively and effectively maintained.</i>	<ul style="list-style-type: none"> (2017) Pursue programmatic 5-year drainage permit(s) with assistance from the Whatcom Conservation District
4	Flood management & protection	<i>Agricultural lands in the Bertrand WID are protected from flooding at critical times in the growing season.</i>	
v	Communication, outreach and education	<i>Internal: WID members are aware of and understand the WID's priority issues and they participate actively in WID planning and implementation of priority actions. External: Non-agricultural residents in the WID area, other external stakeholders and relevant bodies & agencies are aware of, understand and support the Bertrand WID's priority actions.</i>	<ul style="list-style-type: none"> (2017) Update the WID Comprehensive Plan
vi	Water flow processes; Habitats & species	<i>The Bertrand WID's plans and actions help to protect and enhance water flow processes as well as fish and wildlife habitats in the Bertrand watershed.</i>	
vii	Agricultural protection (Protecting the agricultural industry)	<i>The Bertrand WID's plans and actions contribute to the recognition, protection and strengthening of the agricultural base in the WID area.</i>	

Notes on Table 1:

- The suggested wording is based on statements drawn from WID meeting minutes, WID work session notes in the mapping report and other WID documents.
- Ordering: Items numbered 1 through 4 are ordered by priority according to the results of the March 2017 WID planning session. Items (v) to (vii) are in no particular order of priority but have been addressed in minutes of the WID board meetings.
- Near-term priority actions column: At the March 2017 planning work session, the actions currently in this column were the top 4 priorities listed for 2017. The board may wish to add more near-term priority actions here, drawing from those listed in the right-hand column in Table 2. Some actions will need additional external resources or assistance (see section 6: discussion on preliminary scope of work for such tasks).

Table 2. Consolidated list of Bertrand WID priorities, goals, and possible actions.

	Desired outcome(s):	Measurable goals	Actions
1	Water quantity: Water for agricultural uses (irrigation, livestock, processing) (Updated after September 2017 board meeting)		
	<p>Farmers in the Bertrand WID have secure (legal) access to sufficient supplies of water for agricultural uses.</p>	<p><u>Goal statements:</u> (a) Sufficient supply of water is available for agricultural uses. (b) All agricultural water use in the WID is secured through certificate, water lease or water supplier (such as water association).</p> <p><u>Progress could be measured by:</u> (a) Extent of shortfall (if any) between water demand and water availability. (b) % of total agricultural water use in the WID that is secured through certificate, water lease or water supplier (such as water association).</p>	<p>Recently completed in last 2 years, or ongoing:</p> <ul style="list-style-type: none"> i. Continued work on the Flow Augmentation Project: <ul style="list-style-type: none"> a. Three surface to groundwater conversions were initiated as pilots for augmentation of surface streamflow (March 2017 notes). b. Prepared guidance manual for farmers on water rights transfers. c. County groundwater modeling study: WID provided partial funding through the Department of Ecology’s Augmentation grant, and have been a partner with the County in this study. ii. Deep aquifer project: Bertrand WID has cooperated with the Birch Bay Water & Sewer District to explore the possibility of developing this as a water source. iii. Tracked bills in the WA Legislature related to water supply and water rights and coordinated with AWB to respond as necessary (meeting minutes) iv. Raised assessments in order to build a fund for technical and legal assistance related to water supply (4/2017 minutes) <p><u>Priority actions for management plan:</u></p> <ul style="list-style-type: none"> v. Complete the Flow Augmentation Project: install and monitor test pumping system, complete the final report. vi. Expand hydrological analysis to include surface water, climate, and evapotranspiration, general assessment of current water uses and water availability and identify shortfalls – possibly coordinate with other WIDs on the analysis* vii. Help to convene a User Group for the groundwater model to provide inputs on model development and use (11/2016) viii. Coordinate with Ag Water Board for actions related to water rights and for participation in the Water Supply Work Group (3/2017 work session) ix. Coordinate with AWB and other WIDS to pursue additional options to secure sufficient agricultural water, such as water exchange or water banking, changes in place of use, water storage through aquifer recharge etc.* (3/2017 work session and 1/2016 meeting) x. Coordinate with AWB on the Drought Planning Task Force that will help in development of a functional water bank (1/2017) <p>* denotes actions that may need additional resources, and more detailed scope & description</p>

	Desired outcome(s):	Measurable goals	Actions
2	<p>Water quality (Updated after September 2017 board meeting)</p> <p>Agricultural activities in the Bertrand WID do not cause water quality standards to be exceeded in surface water and groundwater bodies within the WID area.</p>	<p><u>Goal statement:</u> Relevant water quality standards are met for surface and groundwater within agricultural lands</p> <p><u>Progress could be measured by:</u> Achievement of required water quality standards</p>	<p>Recently completed in last 2 years, or ongoing:</p> <ul style="list-style-type: none"> i. Committed the Bertrand WID's involvement with the County and Conservation District in the Coordinated Resource Management (CRM) program in order to aggressively support a positive response to the Fecal Coliform water quality challenge (3/2015) ii. Continued the WID's ongoing water quality monitoring & response program, adopted a WID protocol for consistently addressing and resolving water quality concerns with landowners in the WID area (8/2016) iii. Made contact with WID landowners to resolve water quality concerns that arose in the monitoring program (contacts reported at regular WID board meetings) iv. Coordinated with other WIDs in supporting work in Scott Ditch area to test and apply technology for tracking fecal pollution to its origins using DNA markers (9/2016) <p><u>Priority actions for management plan:</u></p> <ul style="list-style-type: none"> v. Continue with the ongoing water quality monitoring & response program (noted from March 2017 work session). (May need to increase WID monitoring now that Ecology monitoring efforts are no longer focused on the Bertrand: 4/2017) vi. Coordinate with Ag Water Board and other WIDs on water quality monitoring and responses, including: Portage Bay Partnership, outreach and information sharing, implementation of best management practices. (4/2015, 3/2016) vii. Coordinate with other WIDs on funding for and implementation of source tracking using DNA markers (noted from March 20 work session)* viii. Maintain a watching brief on installation of ZAPS technology for real-time monitoring of fecal coliforms/E. Coli in water, as Whatcom Conservation District & County Department of Health plan to install several ZAPS units in the area waterways. (10/2016) <p><u>Additional actions that might be considered for inclusion here (from meeting discussions & other WID documents):</u></p> <ul style="list-style-type: none"> i. Encourage agricultural landowners in the WID to implement appropriate BMPs, with assistance from the Conservation District* <p>* denotes actions that may need additional resources, and more detailed scope & description</p>

	Desired outcome(s):	Measurable goals	Actions
3	Agricultural drainage: Field drainage (Updated after September 2017 board meeting)		
	<p>Drainage infrastructure and ditches in the Bertrand WID are actively and effectively maintained.</p>	<p><u>Goal statement (a):</u> Regular, scheduled drainage maintenance in the Bertrand WID area occurs under programmatic permits, in collaboration with CDID#1 & DID#2, with mitigation as required and using approved Best Management Practices. <u>Progress could be measured by:</u> % of agricultural land requiring field drainage in the Bertrand WID:</p> <ul style="list-style-type: none"> • that is covered by programmatic permits for drainage maintenance; • where drainage infrastructure and ditches have been maintained and repaired as needed. 	<p><u>Recently completed or ongoing:</u></p> <ol style="list-style-type: none"> Identified priority drainage problem areas for Ag-Watershed Characterization and Mapping report (Jan 2016 work session) – see agricultural enhancement tables in Appendix B of this document, also Table 4 and Figure 7 of this Preliminary Plan. Ditch maintenance on Guide Meridian carried out by WADoT at the request of the WID (3/2017 work session). <p><u>Priority actions for management plan:</u></p> <ol style="list-style-type: none"> Pursue programmatic 5-year drainage permit(s) with assistance from the Whatcom Conservation District* (8/2016, 4/2017) Proactively identify locations for mitigation sites and mitigation actions (e.g. culvert replacement, riparian vegetation) to be addressed in programmatic 5-year drainage permits, that could also contribute to advancing watershed & habitat priorities (see watershed enhancement tables in Appendix B) * Coordinate with Whatcom County and WADOT on prioritizing ditch maintenance activities - mowing and spraying (4/2015, 7/2015, 11/2015, 3/2016, 11/2016) <p>*denotes actions that may need additional resources, and more detailed scope & description</p>
		<p><u>Goal statement(b):</u> Ad hoc actions (such as beaver management or sediment removal after a storm) and/or emergency repairs to drainage infrastructure are completed in a timely manner, in collaboration with CDID#1 & DID#2 and Whatcom County. <u>Progress could be measured by:</u> Number of ad hoc emergency repairs/actions completed, compared to the number reported as needing attention.</p>	<p><u>Recently completed or ongoing:</u></p> <ol style="list-style-type: none"> WID helped to pay for beaver trapping in areas where beavers have become a problem for the entire system. (10/2016) <p><u>Priority actions for management plan:</u></p> <p><u>Additional actions that might be considered for inclusion here (from meeting discussions & other WID documents):</u></p> <ol style="list-style-type: none"> Document the specific procedures for responding to situations requiring ad hoc or emergency actions. Include these procedures in the management plan and in WID communications/website.

	Desired outcome(s):	Measurable goals	Actions
4	Flood management & protection (Updated after September 2017 board meeting)		
	<p>Agricultural lands in the Bertrand WID are protected from flooding at critical times in the growing season.</p>	<p><u>Goal statement (a):</u> Regular, scheduled maintenance is completed for flood protection infrastructure in the Bertrand WID area.</p> <p><u>Progress could be measured by:</u> Number of projects, repairs or actions that are completed in a year, compared to the number reported as needing attention.</p>	<p>Recently completed or ongoing:</p> <ul style="list-style-type: none"> i. New floodgate installed on Schell Creek (date?) ii. De Boer culvert replaced in partnership with DD#4 (9/16) iii. Identified flood management and dike maintenance priority actions as part of Ag-Watershed Characterization and Mapping work session in January 2016 (see agricultural enhancement tables in Appendix B of this document, also see Table 4 and Figure 7 of this Preliminary Plan). <p>Priority actions for management plan:</p> <ul style="list-style-type: none"> iv. Review and update priority actions identified at the January 2016 work session (see list in Table 4 and map in Figure 7 of the Preliminary Plan, which include several possible actions to maintain flood infrastructure in specific locations within the Bertrand WID area.) Additional suggestions from board meeting minutes: <ul style="list-style-type: none"> a. New floodgate on Duffner Ditch (11/2015) b. More floodgates on south bank of lower Fishtrap Creek? (8/2016) v. Coordinate with Whatcom County on prioritizing dike maintenance actions (7/2015, 9/2016) vi. Maintain watching brief on County's development of ideas for levee realignment and drainage management in the lower Fishtrap floodplain to relieve flooding and drainage problems (11/2015 board meeting, 1/2016 work session)
		<p><u>Goal statement (b):</u> Ad hoc or emergency repairs to flood protection infrastructure are completed in a timely manner, in collaboration with Whatcom County.</p> <p><u>Progress could be measured by:</u> Number of ad hoc emergency repairs that are completed in a year, compared to the number reported as needing attention.</p>	<p>Recently completed or ongoing:</p> <p>Priority actions for management plan:</p>

	Desired outcome(s):	Measurable goals	Actions
v	Communication, outreach, education and reporting (Updated after September 2017 board meeting)		
	<p><i>Internal: WID members are aware of and understand the priority issues and participate actively in WID planning & implementation of priority actions.</i></p>	<p>Internal <u>Progress could be measured by:</u></p> <ul style="list-style-type: none"> - Number of direct personal contacts to resolve concerns or raise awareness; - information shared (e.g. newsletters, website); - landowner concerns/priorities addressed; - feedback received (informal or through surveys) 	<p>Internal: The WID board will need to communicate with WID members and engage with them on agreed priority issues, and also to communicate with neighboring landowners, other stakeholders and relevant agencies living or working within the WID.</p> <p><u>Recently completed or ongoing:</u></p> <ul style="list-style-type: none"> i. Redesigned and updated the Bertrand WID website (4/2015) ii. Distributed newsletter summarizing WID activities (9/2016) iii. Comprehensive Plan: hosted work session in 2016 to map and characterize priorities for the WID (Mapping Report produced with the Ag-Watershed Project team) iv. Education: Board members participated in 2/2015 meeting with WIDs & Dairy Federation on fecal coliforms <p><u>Priority actions for management plan:</u></p> <ul style="list-style-type: none"> v. Comprehensive Plan: Update the WID Comprehensive Plan (2/2015, 3/2017: previous Plan issued in 2004), seek grant funding to develop and implement a comprehensive management plan vi. Reporting: Establish a template for tracking and regular reporting of WID progress on priority issues, based on a set of simple indicators of progress.* vii. Reporting: Update the Bertrand State of the Watershed Report* (6/2015, 7/2015) viii. Outreach: Continue to distribute newsletter to WID members summarizing WID progress.
	<p><i>External: Non-agricultural residents and other stakeholders outside the WID are aware of, understand and support the Bertrand WID's priority actions.</i></p>	<p>External <u>Progress could be measured by:</u></p> <ul style="list-style-type: none"> - External contacts: information shared (e.g. newsletters, website); - feedback received (informal or through surveys); - evidence of support for WID priorities (e.g. in media coverage) 	<p>External: While external communication and engagement could be coordinated through the Ag Water Board and Whatcom Family Farmers, Bertrand-specific information and inputs will be needed to support these efforts.</p> <p><u>Recently completed or ongoing:</u></p> <ul style="list-style-type: none"> ix. Published Ag Water Board introductory story map with general information about the WIDs http://www.agwaterboard.com/storymap x. Published story map as part of Ag-Watershed Characterization and Mapping project http://arcg.is/29qspLX (10/2016) xi. AWB (booth) on behalf of the WIDs at the Small Fruit Conference (Nov/Dec 2016) xii. Participated in Bertrand Watershed Conference (6/2015) xiii. Sponsored the WCD Speaker Series (9/2016, 10/2016) and WSU Water Workshop (2/2017) xiv. Engaged with NRCS to help make the CREP re-enrolment requirements adaptable to changing conditions on the ground (6/2015) xv. Ag Water Board submitted comments on County Critical Areas Ordinance Update (4/ 2016). xvi. Provided feedback on Whatcom Conservation District's 2017 work plan (9/2016). xvii. Coordinated with AWB, Dairy Federation and Whatcom Family Farmers for active discussions with the Lummi Nation regarding water issues, which culminated in the development of the Portage Bay Partnership in 2017. (3/2017) xviii. Tracked bills in the WA Legislature related to water supply and water rights and coordinated with AWB to respond as necessary (meeting minutes) <p><u>Priority actions for management plan:</u></p> <ul style="list-style-type: none"> xix. Support Ag Water Board's work with key partners to relate positive stories about agriculture such as what farmers are doing to benefit habitat and water quality to stakeholders, relevant bodies and agencies, and media (March 20th work session notes). xx. Develop mechanisms for effectively representing WID concerns in transboundary discussions: <ul style="list-style-type: none"> a. Low flows coming across the border due to damming of Jackman Ditch & Pepin Creek in BC (8/2016) b. Water quality problems originating on the BC side of the border (2/2016)

	Desired outcome(s):	Measurable goals	Actions
vi	Water flow processes; Habitats & species (Updated after September 2017 board meeting)		
	<p>The Bertrand WID's plans and actions help to protect and enhance water flow processes and fish and wildlife habitats in the Bertrand and lower Fishtrap watersheds</p>	<p><u>Goal statement:</u> Water flow processes (surface storage, discharge, recharge, delivery) are enhanced or protected as necessary in areas that are important for the watershed (see Figures 14 and 15 in the WID mapping report: also included in Appendix C of this document).</p> <p><u>Progress could be measured by:</u> Some options for measuring progress:</p> <ul style="list-style-type: none"> - Status of water flow process degradation (H, MH, M, L) in assessment units within the Bertrand WID area (see Fig 14 in Appendix C). - % effective shade cover along fish-bearing streams and ditches. - Acres of wetland or wildlife habitat enhanced, restored and/or protected - Stream length made accessible through removal of fish barriers 	<p>Recently completed or ongoing:</p> <ol style="list-style-type: none"> i. Continued work on the Flow Augmentation Project, exploring how to manage water on agricultural lands in the Bertrand watershed in ways that would help to increase instream surface water flows. <ol style="list-style-type: none"> a. Tested feasibility of augmenting surface streamflow with pumped groundwater (installed & monitored pilot pump & discharge system). b. Assessed potential surface water storage sites in the Bertrand watershed (reconnaissance report issued 2007) ii. Watershed assessment for the Ag-Watershed Project (Jan 2016): identified priority areas where water flow processes – especially storage and discharge - could be enhanced through wetlands, ground water recharge and planting of riparian vegetation (see watershed characterization tables in Appendix B of this document). iii. De Boer culvert replaced in partnership with DD#4 (9/16), two additional culvert replacement projects completed. <p>Priority actions for management plan:</p> <ol style="list-style-type: none"> iv. Review possible actions to enhance or protect water flow processes in specific locations within the Bertrand WID area, as listed in the watershed characterization tables prepared during the WID work session in January 2016 (see tables in Appendix B of this document).* <ul style="list-style-type: none"> • Suggested actions in specific parts of the WID include, for example, enhancing surface water storage, reducing or preventing additional impervious cover, protecting and/or restoring riparian and forest cover, reducing subsurface drainage rates. v. Proactively identify locations for mitigation sites and mitigation actions (e.g. culvert replacement, riparian vegetation) to be addressed in programmatic 5-year drainage permits, that could also contribute to advancing watershed & habitat priorities (see watershed enhancement tables in Appendix B) * vi. Coordinate with the Whatcom Conservation District to find more funding for areas where landowners are interested in replacing culverts on private land, to remove fish passage barriers (12/2015) <p>* denotes actions that may need additional resources & more detailed scope & description</p>

	Desired outcome(s):	Measurable goals	Actions
vii	Agricultural protection (Protecting the agricultural industry) (Updated after September 2017 board meeting)		
	The Bertrand WID's plans and actions contribute to the recognition, protection and strengthening of the agricultural base in the WID area.	<u>Goal statement (a):</u> Important agricultural land in the WID is protected from conversion through appropriate zoning and/or voluntary agricultural conservation easements. <u>Progress could be measured by:</u> Acres of land in the Bertrand WID protected by voluntary agricultural conservation easements	Note that WID actions could contribute to this priority issue, but there are also external factors influencing it, such as land prices, agricultural markets & policies etc. "Preserving the land base" is a stated priority from the mapping report (2016), but the board meeting minutes do not show any detailed discussion of this issue. <u>Recently completed or ongoing:</u> <u>Priority actions for management plan:</u>
		<u>Goal statement (b)</u> Land use conflicts with neighboring non-agricultural landowners are reduced. <u>Progress could be measured by:</u> Number of complaints received from non-agricultural landowners by the WID or by Whatcom County.	<u>Recently completed or ongoing:</u> <u>Priority actions for management plan:</u> i. engage and communicate with non-ag landowners in the WID area about WID priorities and programs, normal farming operations, right-to-farm etc. (include specific actions in the communication strategy)* * denotes actions that may need additional resources, and more detailed scope & description
		<u>Goal statement (c):</u> Suggestions from WID board for goal statements that might apply here? <u>Progress could be measured by:</u> An example of a measurable achievement might be adoption of the County Council resolution on preserving 100,000 acres for the ag land base, which recognizes the importance of agriculture and associated industries for the local economy.	<u>Recently completed or ongoing:</u> <u>Priority actions for management plan:</u> i. Coordinate with Whatcom Family Farmers to address legal challenges and preserve "one voice outreach" on behalf of agriculture (from March 2017 work session)