



## WRIA1 INTEGRATED PROGRAM MANAGEMENT

---

### WRIA 1 Watershed Management Board

Bellingham • Blaine • Everson • Ferndale • Lynden • Nooksack • Sumas • Whatcom County • Public Utility District No. 1 of Whatcom County  
Lummi Nation • Nooksack Indian Tribe • Washington Department of Fish and Wildlife



# WRIA 1 Watershed Management Board 2018-2023 Work Plan August 1, 2018

## 1 **Introduction**

2 The WRIA 1 Watershed Management Board<sup>1</sup> (WRIA 1 Board) directed its Management Team to propose an  
3 integrated multi-year work plan, budget and funding strategy to advance WRIA 1 program and plan  
4 strategies that are a function of the WRIA 1 Board. Under its 2016 Interlocal Agreement<sup>2</sup>, the three  
5 primary program functions of the WRIA 1 Board include:

- 6 1. facilitate implementation and adaptive management of the WRIA 1 Watershed Management Plan-  
7 Phase 1 as currently constituted or subsequently amended;
- 8 2. Coordinate implementation and adaptive management of the *WRIA 1 Salmonid Recovery Plan* and  
9 associated implementation document, serve as the Lead Entity for salmon recovery in WRIA 1,  
10 coordinate participation in Puget Sound salmon recovery efforts, and coordinate development,  
11 implementation, and adaptive management of WRIA 1 watershed chapters of recovery plans for  
12 ESA listed salmonids and other salmonid species as warranted; and
- 13 3. Coordinate planning, implementation, monitoring and adaptive management of ecosystem  
14 recovery actions in WRIA 1 and serve as the Whatcom Local Integrating Organization.

15 The proposed multi-year plan spans a five-year timeframe and integrates actions from the existing WRIA 1  
16 programs described below and, consistent with the WRIA 1 Watershed Management Board December  
17 2016 Interlocal Agreement, begins to integrate other natural resource management efforts that are  
18 inextricably linked.

### 19 *WRIA 1 Watershed Management Project*

20 The WRIA 1 Watershed Management Project foundation is the 2005 WRIA 1 Watershed Management Plan  
21 (WRIA 1 WMP). The WRIA 1 WMP includes the WRIA 1 Instream Flow Selection and Adoption Action Plan  
22 (ISF Action Plan) and the over-arching WRIA 1 Long Term Monitoring Plan. Also associated with the WRIA 1  
23 WMP are the WRIA 1 Detailed Implementation Plan and the Lower Nooksack Strategy, which is a subset of  
24 implementation actions in the WRIA 1 WMP and Detailed Implementation Plan. The WRIA 1 Watershed  
25 Management Project studies and documents are found at the project website, which is  
26 [wria1project.whatcomcounty.org/](http://wria1project.whatcomcounty.org/).

### 27 *WRIA 1 Salmon Recovery Program*

28 The WRIA 1 Salmon Recovery Program includes the 2005 *WRIA 1 Salmonid Recovery Plan* and associated  
29 implementation documents (restoration strategy, SRFB/PSAR restoration priorities, 4-year work plan,  
30 Nooksack Chinook monitoring and adaptive management framework). The *WRIA 1 Salmonid Recovery Plan*  
31 identifies recovery goals for North/Middle Fork Nooksack early Chinook and South Fork Nooksack early  
32 Chinook, both independent populations essential for recovery of the Endangered Species Act-listed Puget  
33 Sound Chinook, limiting factors, and management actions; the *WRIA 1 Salmonid Recovery Plan* serves as  
34 the Nooksack chapter of the Puget Sound Chinook Recovery Plan. Additional functions of the WRIA 1  
35 Salmon Recovery Program include coordinating the local element of the annual salmon recovery funding  
36 grant process and submitting an approved project list for state Salmon Recovery Funding Board

---

<sup>1</sup> WRIA 1 Watershed Management Board name was established with the execution of the December 2016 Interlocal Agreement that consolidated the WRIA 1 Salmon Recovery Board and WRIA 1 Watershed Joint Board and their associated programs, roles and responsibilities under a single Interlocal Agreement.

<sup>2</sup> [wria1project.whatcomcounty.org/uploads/PDF/Guiding%20Documents%20and%20Plans/WRIA%201%20Watershed%20Management%20Board%20ILA%20-%20FINAL%20with%20signatures.pdf](http://wria1project.whatcomcounty.org/uploads/PDF/Guiding%20Documents%20and%20Plans/WRIA%201%20Watershed%20Management%20Board%20ILA%20-%20FINAL%20with%20signatures.pdf)

consideration, updating annual habitat restoration strategy documents, and coordinating implementation of key actions in the *WRIA 1 Salmonid Recovery Plan*. The WRIA 1 Salmon Recovery Program plans and background information are found at the project website, which is [salmonwria1.org/](http://salmonwria1.org/).

#### *Whatcom Local Integrating Organization*

The WRIA 1 Board serves as the Whatcom Local Integrating Organization (LIO), which is one of nine LIOs recognized by the Puget Sound Partnership. The purpose of the Whatcom LIO is to coordinate local recovery actions that will support Puget Sound recovery, maintain a point of contact for Puget Sound Action Agenda implementation, and provide local feedback to Puget Sound recovery strategies. A Whatcom LIO Ecosystem Recovery Plan was drafted under the framework provided by the Puget Sound Partnership. The LIO plan builds from and integrates existing local plans and programs. The June 30, 2017, Draft Whatcom LIO Ecosystem Recovery Plan<sup>3</sup> will be adaptively managed and updated to reflect the WRIA 1 Watershed Management Board Five-Year Work Plan. Information related to the Whatcom Local Integrating Organization is found at [WRIA1project.whatcomcounty.org/Get-Involved/Whatcom-Local-Integrating-Organization-\(LIO\)/109.aspx](http://WRIA1project.whatcomcounty.org/Get-Involved/Whatcom-Local-Integrating-Organization-(LIO)/109.aspx).

#### **Relationship of WRIA 1 Watershed Management Board 2018-2023 Work Plan to Other Programs**

The WRIA 1 Watershed Management Board multi-year plan includes eight strategies that represent a subset of actions from existing WRIA 1 programs and plans ~~and are also~~ consistent with the WRIA 1 Board's purpose, outlined in the 2016 Interlocal Agreement, to coordinate with and integrate other natural resource management actions implemented through ~~other complementary~~ programs (Figure 1). Complementary programs include but are not limited to efforts such as the Whatcom Clean Water Program, the Whatcom County River and Flood Division floodplain integrated planning, and the Watershed Improvement District's planning. The complementary efforts are related to the WRIA 1 Watershed Management Board's Work Plan because they play an important role in Whatcom LIO ecosystem recovery planning and Puget Sound recovery to address identified vital signs<sup>4</sup> and they are associated with addressing elements of the WRIA 1 Watershed Management Plan and WRIA 1 Salmonid Recovery Plan including:

- Water quality including both fresh water and marine water;
- Water quantity including for instream resources and out of stream resources;
- Floodplains;
- Shellfish;
- Chinook (and other salmon); and
- Habitat.

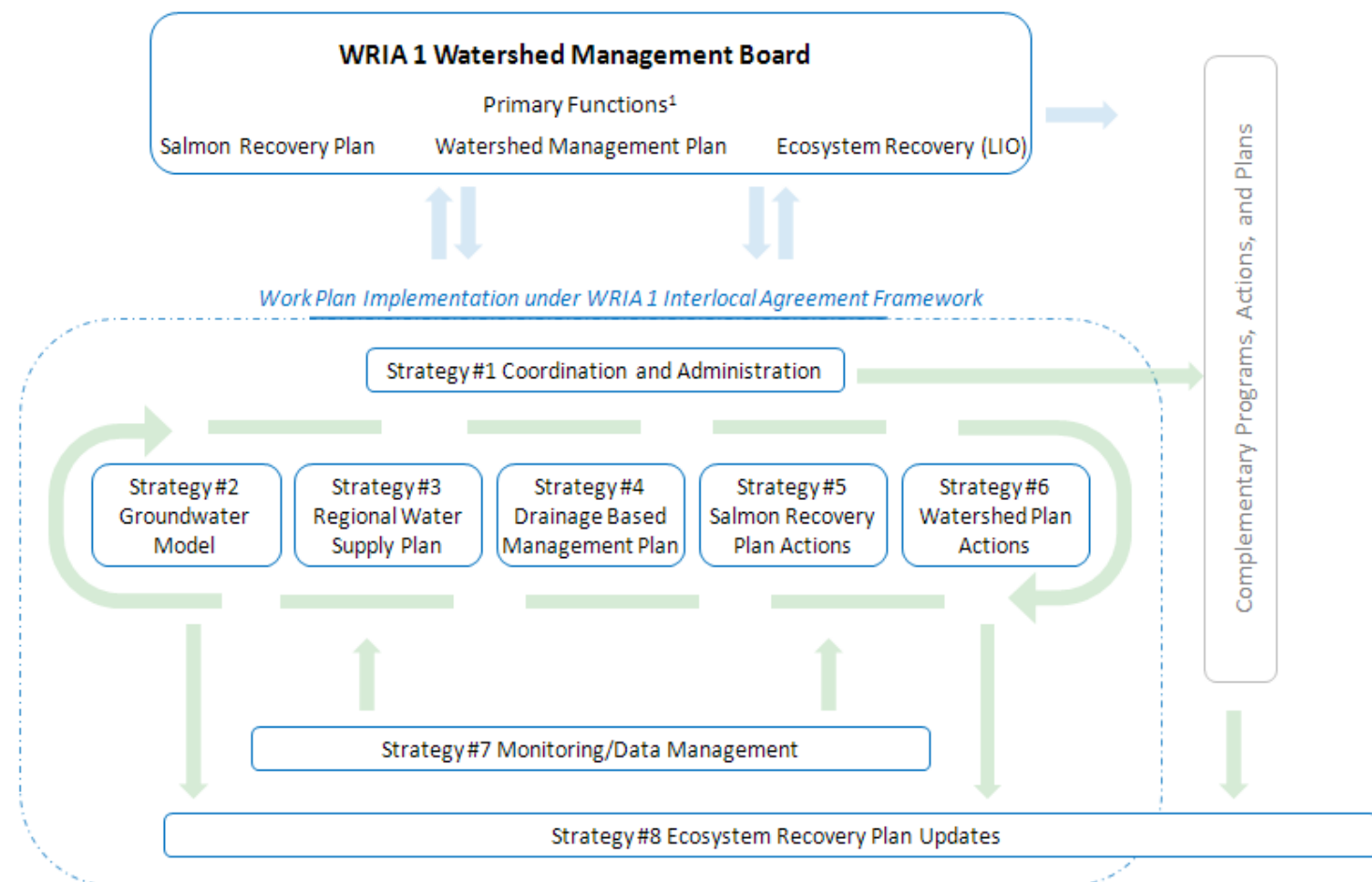
As shown in Figure 1, the Coordination and Implementation Strategy is the overall coordination under the WRIA 1 Watershed Management Board. The coordination task outlined in Strategy 1 supports the coordination tasks identified in Strategies 2-8 and provides the linkage to complementary programs and actions. ~~Complementary programs, actions, and plans include but are not limited to efforts such as the Whatcom Clean Water Program, the Whatcom County River and Flood Division floodplain integrated~~

<sup>3</sup> The Draft Whatcom LIO Plan was prepared in accordance with planning grants to local integrating organizations around Puget Sound to develop local ecosystem recovery plans that will support Puget Sound recovery. It conforms to the framework developed to meet the interests of the Puget Sound Partnership

<sup>4</sup> Human components identified include viable agriculture, fisheries and forestry economies, public safety, recreation, cultural well-being, recreation, and employment.

74 | ~~planning, and the Watershed Improvement Districts' planning. The complementary efforts are related to~~  
75 | ~~the WRIA 1 Watershed Management Board's Work Plan because they play an important role in local~~  
76 | ~~ecosystem recovery planning and Puget Sound recovery (Strategy 8).~~ Strategies 2-6 are implementation  
77 | actions associated with the planning documents identified in the WRIA 1 Watershed Management Board's  
78 | functions outlined in the 2016 Interlocal Agreement and lead to adaptive management of those plans.  
79 | Many of the tasks in Strategies 2-6 are interdependent and linked. This is the area of the multi-year work  
80 | plan that is likely to see the most adjustments on an annual basis. Strategy 7, Integrated Monitoring and  
81 | Central Data Management, supports and informs the implementation actions (Strategies 2-6). Outcomes  
82 | from Strategies 1-7 including continued interaction with complementary programs inform adaptive  
83 | management of the Whatcom LIO Ecosystem Recovery Plan and future local actions that achieve Puget  
84 | Sound recovery for consideration in the next Puget Sound Action Agenda update (Strategy 8).  
85 |

Figure 1. 2018-2023 WRIA 1 Watershed Management Board Work Plan Strategies and Relationship to Complementary Programs, Actions, and Plans



<sup>1</sup>The primary functions of the WRIA 1 Watershed Management Board are described in the December 2016 Interlocal Agreement.

87 **WRIA 1 2018-2023 Work Plan and Funding Strategy Format**

88 The 2018-2023 WRIA 1 Watershed Management Board's multi-year plan is intended as a five-year  
89 integrated strategy for implementing and sequencing actions that address water quality, water quantity,  
90 floodplains, salmon recovery, and stormwater. It is anticipated that the actions implemented in the 2018-  
91 2023 plan will also support negotiation of water rights among the affected parties.

92 While the 2018-2023 Plan identifies "administrative leads" for individual strategies, the intent is to  
93 implement the strategies within the overall structure and decision-making process of the WRIA 1  
94 Watershed Management Board and 2016 Interlocal Agreement (Figure 2).

95 The level of detail is greatest for the first two years of the work plan and will continue to be developed for  
96 each strategy as part of implementing the strategy. Plan status will be reviewed annually, and updated as  
97 needed. The annual review will include considering whether the intent of addressing water quality,  
98 stormwater and stream flows as part of broader strategies is occurring or whether the work plan should  
99 include stand-alone strategies for one or all of those elements. Following is a description of the plan  
100 sections:

101 **Section I: Narrative**

102 The first section of the work plan is a narrative that provides a description of each strategy. Under each  
103 strategy is a list of the general tasks, anticipated milestones, and ~~estimated-planning-level~~ budgets. Many  
104 of the tasks listed under a strategy are interdependent with or support tasks in other strategies. These  
105 dependencies are referenced in the narrative and are shown on the timeline that is in Section II of the work  
106 plan.

107 **Section II: Timeline**

108 Section II is an overall timeline for the full five-year work plan and funding strategy. The timeline shows the  
109 administrative lead for the listed strategy, scheduled tasks and where there are tasks that are dependent  
110 on or supporting other tasks. As with the overall 2018-2023 Plan, the level of detail in the timeline is  
111 greatest for the first two years and will continue to be developed as the administrative lead for each  
112 strategy initiates implementation. The timeline will be reviewed annually and adjusted as needed.

113 **Section III: Technical Appendices**

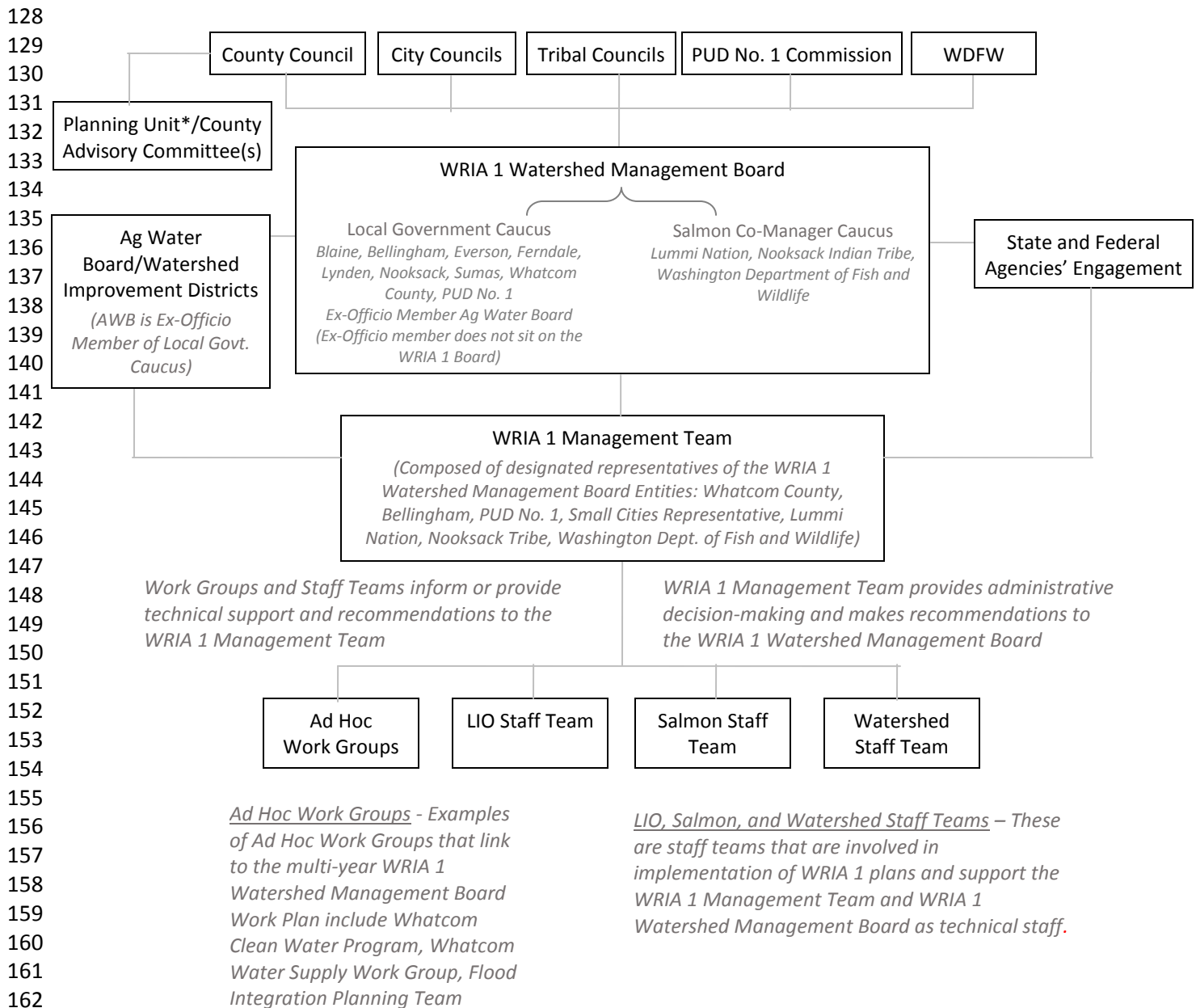
114 The technical appendices will include the highest level work plans available for actions that are  
115 implemented under the WRIA 1 Watershed Management Board's 2018-2023 Work Plan and Funding  
116 Strategy. Not all strategies have higher level work plans associated with them, and therefore are not  
117 represented in the technical appendices.

118 **Management**

119 The WRIA 1 Watershed Management Board intends to coordinate the work plan as it is adopted by the  
120 Members, and will support efforts to obtain funding. The WRIA 1 Management Team will administer the  
121 work on behalf of the WRIA 1 Watershed Management Board as described in Strategy 1 WRIA 1 Watershed  
122 Management Board Work Plan Implementation and Administration. Administrative leads are identified for  
123 each of the strategies to oversee implementation and individual entities or consultants may be contracted  
124 with to implement tasks within strategies. Individual tasks/strategies may be implemented by individual  
125 member entities.



Figure 2. WRIA1 Watershed Management Board Structure (Source: 2016 WRIA 1 Interlocal Agreement clarified to reflect Ex-Officio representation)



\*This diagram reflects the Planning Unit's advisory function to the Whatcom County Council under Whatcom County Resolution #2013-025. The Planning Unit also has designated roles with respect to watershed planning as described in RCW 90.82 and ESSB 6091.

167 **Summary of Strategies and Budget Estimates\***

Strategy	Administrative Lead <sup>5</sup>	Years 1-2	Years 3-5	Total for 5-Year Plan
Strategy 1: Implementation and Administration	WCPW <sup>6</sup>	\$136,000	\$306,000	\$442,000
Strategy 2: Ground Water Model and Technical Support	WCPW <sup>7</sup>	\$85,000	\$345,000	\$430,000
Strategy 3: Regional (WRIA-Wide) Water Supply Plan	PUD No. 1 <sup>8</sup>	\$222,500	\$170,000	\$392,500
Strategy 4: Drainage Based Management Planning	WCPW <sup>9</sup>	\$112,500	\$337,500	\$450,000
Strategy 5: Salmon Recovery Plan Implementation	Co-Managers <sup>10</sup>	\$570,000	\$1,115,000	\$1,685,000
Strategy 6: WRIA 1 Watershed Management Plan Update	WCPW <sup>11</sup>	\$208,500	\$60,000	\$268,500
Strategy 7: WRIA 1 Integrated Monitoring and Data Management	PUD No. 1 <sup>12</sup>	\$877,220	\$1,326,289	\$2,203,509
Strategy 8: Whatcom LIO Coordination and Adaptive Management	WCPW <sup>13</sup>	\$42,500	\$60,000	\$102,500

168

169 *\*Estimates will be updated as they are refined; for many tasks the estimates are for planning purposes.*

<sup>5</sup> Administrative lead oversees implementation within the framework of the WRIA 1 Watershed Management Board.

<sup>6</sup> WCPW has historically been the lead for administering the WRIA 1 collaborative planning process on behalf of the WRIA 1 Joint Board and they are the owner of the 2018-2022 Near Term Action submitted for funding consideration as part of the Puget Sound Action Agenda process.

<sup>7</sup> WCPW is currently the lead for the construction of the groundwater model.

<sup>8</sup> The PUD No. 1 was lead for this task under the Lower Nooksack Strategy and is the owner of the 2018-2022 Near Term Action submitted for funding consideration as part of the Puget Sound Action Agenda process.

<sup>9</sup> WCPW is the owner of the 2018-2022 Near Term Action submitted for funding consideration as part of the Puget Sound Action Agenda process.

<sup>10</sup> The Lummi Nation has been the fiscal agent on behalf of the WRIA 1 Watershed Management Board for receiving and administering salmon recovery lead entity grant funds. The Co-Managers are also owners of several 2018-2022 Near Term Actions associated with salmon recovery monitoring and adaptive management.

<sup>11</sup> WCPW is currently lead for updating the WRIA 1 Watershed Management Plan; Whatcom County is lead agency.

<sup>12</sup> PUD No. 1 is the owner of the 2018-2022 Near Term Action submitted for funding consideration as part of the Puget Sound Action Agenda process.

<sup>13</sup> WCPW is currently fiscal agent acting on behalf of the WRIA 1 Watershed Management Board for receiving and administering the LIO coordination grant.



## SECTION I - NARRATIVE

### **Strategies, Tasks, and 2018-2020<sup>14</sup> Budget Estimates (Years 1-2)**

The eight Strategies listed below are intended to be implemented simultaneously under the framework of the WRIA 1 Watershed Management Board. The Strategies are inextricably linked, and, in many cases, tasks between Strategies are interdependent. While there is not a stand-alone strategy for instream flow negotiations, implementing the Strategies and tasks as outlined in this document will support resolution of instream flows, habitat, and water quality issues in an integrated manner that will lead to and could support negotiated water right agreements among the affected parties and Lummi Nation and Nooksack Indian Tribes.

The approach for implementing each of the Strategies includes administrative leads that are responsible for overseeing the implementation of tasks including developing scopes of work as needed, coordinating with task leads, incorporating input from Planning Unit, advisory committees and/or public where and when applicable, and reporting back to the WRIA 1 Management Team and WRIA 1 Watershed Management Board.

#### **Strategy 1: WRIA 1 Watershed Management Board Work Plan Implementation and Administration**

Description: Administer and implement Strategies 2-7 under the framework of the WRIA 1 Watershed Management Board.

**Total Strategy 1 Estimated Budget through 2020: \$136,000**

Task 1: **Manage and oversee the 2018-2023 WRIA 1 Watershed Management Board Work Plan.** Each of the Strategies includes an administrative lead that is responsible for overseeing and managing the implementation of the strategy, which includes identifying and/or contracting with task leads as appropriate. Task 1 of this Strategy is to provide overall administration of the WRIA 1 Watershed Management Board and its work plan under a single administrator as approved by the WRIA 1 Watershed Management Board. Initially the administrator is anticipated to be existing staff of a Board entity but will be discussed and considered as part of the annual work plan and budget review. The administration includes but is not limited to:

- Identifying and addressing barriers to implementation as they arise and, as needed, frame and schedule for discussion, resolution, and/or direction to the WRIA 1 Management Team and WRIA 1 Watershed Management Board.
- Providing annual review of the Work Plan and presenting its status to the WRIA 1 Management Team and WRIA 1 Watershed Management Board with recommendations for modifications, where applicable or desired.
- Supporting WRIA 1 Watershed Management Board function and operation including providing organizational support to the Local Government Caucus, and upon request, the Co-Manager Caucus.

Task 2: **Program coordination** associated with the WRIA 1 framework including but not limited to providing meeting support to implement Strategies under the 2018-2023 WRIA 1 Watershed Management Board Work Plan. The task also includes coordinating with complementary programs including but not limited to Whatcom Clean Water Program, Watershed Improvement

<sup>14</sup> Budget estimates after 2020 will be identified as part of developing a long-term funding strategy for priority actions.

207 | [Districts, and Whatcom County River and Flood Division integrated floodplain planning that have a](#)  
208 | [link to Strategies in the WRIA 1 Watershed Management Board Work Plan.](#)

209 Task 3: **Organize, collaborate, and/or conduct outreach** associated with the Strategies outlined in the  
210 2018-2023 WRIA 1 Watershed Management Board Work Plan. This includes:

- 211 • Maintain and update WRIA 1 website
- 212 • Develop integrated outreach strategy.
- 213 • Coordinate and collaborate with Whatcom Watersheds Information Network to advance and  
214 disseminate WRIA 1 program information as appropriate including participating in planning for  
215 speakers, conferences, forums, mailings, and other events.
- 216 • Coordinating and collaborating with WRIA 1 Watershed Management Board entities, LIO  
217 participants, and others as appropriate to support outreach consistent with topics in the *WRIA*  
218 *1 Watershed Management Plan*, *WRIA 1 Salmonid Recovery Plan*, and draft *Whatcom LIO*  
219 *Ecosystem Recovery Plan*.
- 220 • Implement outreach specific to the Strategies outlined in the 2018-2023 WRIA 1 Watershed  
221 Management Board Work Plan to inform the community of program status, obtain feedback  
222 and input, and to engage the community in implementation actions.

223 **Strategy 2: Ground Water Model(s) and Technical Support.**

224 Description: A coupled groundwater/surface water model that primarily covers the LENS study area was  
225 initiated as a multi-phase implementation item in 2014 under the former WRIA 1 Watershed Joint Board.  
226 The construction of the groundwater model, which is the final phase, will be completed late 2018. The  
227 additional needs associated with the groundwater model include receiving and operating the model,  
228 which are reflected in the tasks outlined below, and expanding it to other areas of WRIA 1 such as the  
229 South Fork Nooksack Watershed where a groundwater model has been proposed by Nooksack Tribe in  
230 partnership with USGS.

231 | **Total Strategy 2 Budget through 2020: [\\$85,000](#)**

232 **Work Products:** Operation of WRIA 1 groundwater model; Options for expanding groundwater model

233 Task 1: **Coordinate technical review of groundwater model** within the WRIA 1 framework and identify  
234 additional groundwater monitoring needs for long term model resolution, if any.

235 Timeline: December 2018-January 2019

236 Task 2: **Identify options and select preferred option** for managing the coupled surface/groundwater  
237 model including operation of the model and updating data sets as information becomes available  
238 that will result in an increase in the resolution of the model output, and after identifying how the  
239 model will be used and key management questions for operating the model.

240 Timeline: August 2018-December 2018

241 Task 3: **Identify needs and long term funding** for managing the coupled surface/groundwater model.  
242 Costs should include but is not limited to staffing, updating data as needed, making information  
243 available to the public and other entities, and calibrating the model when appropriate.

244 Timeline: August 2018-January 2019

245 Task 4: **Implement recommendation** for managing the coupled model. This task is dependent on Tasks 2  
246 and 3 of this Strategy.

247 Timeline: Initiate implementation February 2019

248 Task 5: **Expand groundwater modeling to other areas of WRIA 1** starting with the South Fork Nooksack  
249 Watershed model proposed by Nooksack Tribe in partnership with USGS.

250 Timeline: 2019-2022

### 251 **Strategy 3: Regional (WRIA-Wide) Water Supply Plan**

252 Description: This Strategy was originally identified in the 2010 Lower Nooksack Strategy but not  
253 implemented due to lack of funding support. Nonetheless, there remains a need for a WRIA 1-wide water  
254 supply plan that establishes a framework to address water supply needs beyond the WADOH regulatory  
255 framework of the Whatcom County Coordinated Water System Plan (CWSP) and that is consistent with  
256 the geographic extent of proposed approaches to settle water rights. Under this Strategy, the regional  
257 water supply plan will integrate the 2017 updated CWSP with other out-of-stream and instream water  
258 needs, in context with land use, economic viability, and ecosystem recovery.

259 **Total Strategy 3 Budget through 2020: \$225,000**

260 **Work Product:** Regional Water Supply Plan

261 Task 1: **Coordinate with technical work groups ~~and~~, staff teams, and Planning Unit** for drafting and  
262 providing feedback and review of water supply plan components. Review of plan components will  
263 be coordinated through the WRIA 1 framework.

264 Timeline: 2018-2020

265 Task 2: **Consolidate and quantify water availability, water use, and water supply needs for out of**  
266 **stream needs** (current and projected) including evaluating water right data base for opportunities.  
267 This task is anticipated to focus initially in pilot areas for Strategy 4 (Drainage Based Management  
268 Planning).

269 Timeline:

270 Task 3: **Compile existing information on instream water needs and identify monitoring priorities** to  
271 incorporate in Strategy 7. This task is anticipated to initially focus in pilot areas for Strategy 4  
272 (Drainage Based Management Planning).

273 Timeline:

274 Task 4: **Identify and support water supply and management research, facilitate data collection, and**  
275 **close data gaps.** This includes identifying priority needs for monitoring effectiveness of water  
276 supply management approaches and solutions. This task will be done in conjunction with  
277 Strategies 7 and 4, and related information from the ESSB 6091 update (Strategy 6), as applicable.

278 Timeline: December 2018

279 Task 5: **Identify, evaluate, and support solutions for meeting water supply needs.** This will be a  
280 collaborative and coordinated approach with other efforts evaluating solutions in/for related  
281 plans and studies (e.g., Drought Plan, grants addressing water supply, etc.), and in conjunction  
282 with Strategies 4 and 6 Drainage Based Management Planning and WRIA 1 Watershed

283 Management Plan (ESSB 6091 update), respectively. Gaps in solutions will be identified, where  
284 applicable.

285 Timeline:

286 Task 6: **Provide water supply information for connecting water availability to land use and habitat.** The  
287 outcomes of Tasks 2-5 will be used to improve connections between where water is available and  
288 existing land use. Information will be coordinated with Strategies 4 through 6, and will be used to  
289 integrate water supply needs into other planning efforts (e.g., Comprehensive Plans, Integrated  
290 Floodplain Planning, and other watershed-scale plans).

291 Timeline:

292 Task 7: **Draft and Final WRIA 1 Water Supply Plan** that consolidates information from Tasks 2-6 into a  
293 WRIA 1 Water Supply Plan that includes instream and out of stream water needs and identifies  
294 ranges of solutions. Review and feedback on the draft plan will be coordinated with technical  
295 staff, work groups, WRIA 1 Planning Unit, WRIA 1 Management Team, and other interested  
296 parties prior to a final plan. Partnerships with WWIN, WSU, WCD and others will be used for  
297 sharing information and to support outreach related to water supply planning.

298 Timeline:

#### 299 **Strategy 4: Drainage Based Management Planning**

300 Description: Drainage-based management planning (DBMP) is a recommendation in the WRIA 1  
301 Watershed Management Plan. The concept is a planning approach scaled to the drainage level and that  
302 will consider five elements – water quality, water supply, instream flow, fish habitat, and accountability.  
303 Under this approach, targets for each of the elements will be developed and agreed to among the affected  
304 parties. A pilot area will be identified for implementing the DBMP approach. Based on effectiveness of  
305 the approach in the pilot area, additional sub-basins will be identified to continue the DBMP. This  
306 Strategy is inextricably linked to all of the Strategies in this 2018-2023 work plan and is expected to  
307 involve identifying and coordinating with a sub-lead for each sub-basin. The approach is similar to an  
308 approach introduced and presented to stakeholders by Lummi Nation and is envisioned as a mechanism  
309 to help facilitate the resolution of state and federal/tribal water rights in WRIA 1 .

310 **Total Strategy 4 Budget through 2020: \$112,500**

311 **Work Products:** Data synthesis and analysis technical memo; subbasin goals for water supply, water  
312 quality, instream flows, and habitat; Implementation Plan and Agreements for Drainage-Scale  
313 Water Management

314 Task 1: **Select pilot sub-basin and establish planning team for drainage-based management planning** in  
315 coordination with technical staff, Planning Unit, and other affected parties. Subbasin selection  
316 should take into consideration- among other factors- sub-basin level data availability, efforts  
317 underway to address water quality, water use, and habitat issues, and a mechanism in place at the  
318 sub-basin level for purposes of coordinating this Strategy.

319 Timeline: September – December 2018

320 Task 2: **Coordinate synthesis and analysis of available data, identify data gaps, collect data, establish**  
321 **sub-basin goals and identify management Strategies and actions** for water supply, water quality,

instream flows, and habitat using information collected, synthesized, and coordinated under Strategies 3 and 5-7. Actions identified will include early implementation actions. To the extent available, information generated should use the completed groundwater model (Strategy 2).

Timeline:

Task 3: **Implement and monitor early actions** while the full implementation schedule is developed, and the sub-basin goals and solutions are finalized and approved as a sub-basin plan and appended to the WRIA 1 Regional Water Supply Plan and WRIA 1 Watershed Management Plan.

Timeline:

Task 4: **Draft and Finalize pilot sub-basin plan and agreements.** Prepare a draft and final sub-basin plan and implementation schedule. Solicit input from the Planning Unit on the draft sub-basin plan prior to finalizing. The final sub-basin plan implementation schedule and agreements will be appended to the WRIA 1 Water Supply Plan and WRIA 1 Watershed Management Plan.

Timeline:

Task 5: **Repeat Tasks 1-4 in other sub-basins**, adaptively managing the process or approach based on lessons learned from the pilots and feedback received from the Planning Unit.

Timeline:

### Strategy 5: Salmon Recovery Plan Implementation

Description: This Strategy reflects the function of the WRIA 1 Watershed Management Board under the December 2016 Interlocal Agreement, which is to facilitate implementation and adaptive management of the *WRIA 1 Salmonid Recovery Plan* and associated implementation documents, serve as the Salmon Recovery Lead Entity for WRIA 1, coordinate participation in Puget Sound salmon recovery efforts, and coordinate the development, implementation and adaptive management of WRIA 1 watershed chapters of recovery plans for ESA listed salmonids and other salmonid species as warranted.

**Total Strategy 5 Budget through 2020: \$570,000**

**Work Products:** Annual Update of *WRIA 1 Salmonid Recovery Plan* Implementation Status; *WRIA 1 Chinook Monitoring and Adaptive Management Plan* update; *WRIA 1 Salmonid Recovery Plan* update; annual grant round and associated habitat project list

Task 1: **Update the WRIA 1 Salmonid Recovery Plan and implement associated monitoring and adaptive management tasks.** This includes evaluating and updating status of trends of Chinook and other populations, evaluating and updating limiting factors, reviewing status of salmon recovery plan early actions, working with co-managers on hatchery needs and to review status of hatchery contributions to stock recovery (i.e., Skookum Hatchery Chinook captive brood program), coordinating and implementing effectiveness monitoring, facilitating data review, collection and closing data gaps, and preparing an addendum or update to the 2005 *WRIA 1 Salmonid Recovery Plan*. If an update is needed, the update is approved by the WRIA 1 Watershed Management Board through the WRIA 1 structure. This task is strongly linked to Strategy 7.

Timeline: July 2018-2021

Task 2: **Coordinate, support and implement** salmon recovery actions in WRIA 1. This includes coordinating implementation of Chinook restoration and protection projects in priority geographic areas identified in the Salmon Recovery Program restoration Strategies and the regionally required 4 year project list, supporting implementation of restoration and protection projects in the lower Mainstem tributaries and coastal streams and nearshore and estuarine areas, coordinating and supporting WRIA 1-wide fish passage prioritization and implementation, and coordinating and supporting other priority salmon recovery actions, as well as addressing barriers to implementation.

Timeline: July 2018-June2020

Task 3: **Coordinate, support, and implement WRIA 1 Salmon Recovery Program** including coordinating completion of grant deliverables associated with the salmon recovery lead entity operating grant such as preparing/updating 4 year project list, updating projects in the Washington State Habitat Work Schedule, coordinating Salmon Recovery Funding Board (SRFB) and Puget Sound Acquisition and Restoration (PSAR) annual grant processes. Additional coordination under this task includes outreach associated with the WRIA 1 Salmon Recovery Program. This task also includes technical staff support related to salmon and habitat information needs for Strategies 2-4 and 6-8.

Timeline:

**NOTE: Strategy 6 text changes represent the January 3, 2019 WRIA 1 Management Team discussion to reflect the post-6091 WRIA 1 Watershed Management Plan Update process. Changes will be confirmed at the February 20, 2019 Management Team meeting in advance of recommending the final changes to the WRIA 1 Watershed Management Board on February 22, 2019.**

#### **Strategy 6: WRIA 1 Watershed Management Plan Update**

Description: This Strategy reflects the function of the WRIA 1 Watershed Management Board under the December 2016 Interlocal Agreement, which is to facilitate implementation and adaptive management of the *WRIA 1 Watershed Management Plan- Phase 1*.

**Total Strategy 6 Budget through 2020: \$208,500**

**Work Product:** ~~Streamflow Restoration Act (ESSB 6091) Update of the WRIA 1 Watershed Management Plan-Phase 1~~ *Updates to the WRIA 1 Watershed Management Plan*

Task 1: ~~Update the WRIA 1 Watershed Management Plan-Phase 1 to address the 2018 Streamflow Restoration Act (ESSB 6091)~~ The update will be prepared and approved in accordance with the approved process for *Developing and Approving Streamflow Restoration Act (ESSB 6091) Update of WRIA 1 Watershed Management Plan* diagram. *Any updates to the WRIA 1 Watershed Management Plan- Phase 1 will be done in conjunction with the WRIA 1 Planning Unit.*

Timeline: February 2019

Task 2: Adaptively manage updates to the WRIA 1 Watershed Management Plan-Phase 1 in conjunction with the Planning Unit. ~~as applicable and/or as recommended or identified in the 2018 Streamflow Restoration Action Act (ESSB 6091) update to the WRIA 1 Watershed Management Plan-Phase 1.~~



397 Task 3: Engage with the Department of Ecology on the Stream Restoration Act as the 6091 process moves  
398 forward.

399 **Strategy 7: Develop and Implement a WRIA 1 Integrated Monitoring Program with Centralized Data**  
400 **Management.**

401 Description: The WRIA 1 Watershed Management Plan includes a draft WRIA 1 Long Term Monitoring Plan  
402 (LTMP) that has not been fully implemented. Further, salmon recovery monitoring needs were not  
403 included because they were still in development. The Nooksack Chinook Monitoring and Adaptive  
404 Management framework was developed in 2014 and 2015 and needs to be integrated into the LTMP. The  
405 original intent of the WRIA 1 LTMP was to have a comprehensive monitoring approach with a central  
406 location for data management. This Strategy is to update and implement the WRIA 1 LTMP in a manner  
407 that integrates priority monitoring elements of WRIA 1 programs, with quality assurance/quality control  
408 to ensure data quality and centralized data storage so that it is easily accessible to all entities.

409 **Total Strategy 1 Budget through 2020: \$877,220**

410 **Work Products:** Updated WRIA 1 Long Term Monitoring Plan; Centralized Data Management; Funding  
411 Strategy; Cooperative Monitoring Agreements

412 Task 1: **Coordinate with WRIA 1 Staff Teams** and entities involved in monitoring to identify and update  
413 monitoring needs across WRIA 1 programs including water quality, water quantity including  
414 instream flow and water use, habitat, land use, and program and project effectiveness.  
415 Identification of monitoring needs should incorporate broad scoping of indicators, data products,  
416 protocols, and analysis steps. Coordinate Staff Teams through Tasks 2-4 for purposes of  
417 completing an update to the 2007 version of the WRIA 1 Long Term Monitoring Program.

418 Timeline: September 2018 - February 2019

419 Task 2: **Identify key management questions and establish priorities for WRIA 1 Integrated Monitoring**  
420 **Program** based on review and discussion of the updated monitoring needs and in consideration of  
421 Strategies 2-6.

422 Timeline: September – December 2018

423 Task 3: **Identify options for and implement a preferred option for a centralized data management**  
424 **approach** that provides an easily accessible data storage mechanism so entities working on plans,  
425 tools, and/or management solutions know what data exists and have direct access to it.  
426 Implementing a centralized data management approach will also include identifying options and  
427 selecting a preferred option for long-term management of data. Solicit feedback from groups,  
428 entities, Planning Unit, and others that are likely users of the data management system prior to  
429 recommending a preferred option. The preferred option will be presented to the WRIA 1  
430 Watershed Management Board for approval to implement.

431 Timeline: September 2018 – December 2020

432 Task 4: **Identify funding needs for long-term integrated monitoring and data management.** This task  
433 needs to be done in conjunction with other Strategies requiring long-term funding.

434 Timeline: August 2018 – March 2019



435 Task 5: **Update the WRIA 1 Long Term Monitoring Plan** with outcomes of Tasks 1-4. The updated plan  
436 will include implementation schedule and process for integrating outcomes into adaptive  
437 management or WRIA 1 programs and plans.

438 Timeline: April 2019

439 Task 6: **Cooperative Monitoring Agreements.** Facilitate and enter into agreements with leads for  
440 monitoring elements and protocols identified.

441 Timeline: August 2018– December 2019

442 **Strategy 8: Whatcom Local Integrating Organization Coordination and Adaptive Management**

443 Description: This strategy reflects the WRIA 1 Watershed Management Board function under the  
444 December 2016 Interlocal Agreement to coordinate planning, implementation, monitoring and adaptive  
445 management of ecosystem recovery actions, and to function as the Local Integrating Organization and a  
446 partner in the Puget Sound Partnership in representing WRIA 1 goals and priorities.

447 **Total Strategy 8 Budget through 2020: \$**

448 **Work Products:** Update Whatcom LIO Ecosystem Recovery Plan to reflect outcomes, priorities, and other  
449 actions associated with implementing Strategies 1-7; grant deliverables associated with  
450 coordinating Whatcom LIO

451 Task 1: **Coordinate and support functions of the Whatcom Local Integrating Organization** including tasks  
452 and deliverables associated with the scope of work that is developed in association with the  
453 annual coordination grant administered by the Puget Sound Partnership.

454 Timeline:

455 Task 2: **Update and adaptively manage the *Whatcom LIO Ecosystem Recovery Plan*** to reflect the local  
456 priorities and actions identified through Strategies 1-7.

457 Timeline:

458

459

**WRIA 1 Watershed Management Board 5-Year Work Plan Budget Estimates**  
Budget estimates are planning level estimates and will continue to be developed. Budget estimates are not provided for tasks that are being completed with existing staff capacity.

Strategy		Admin. Lead		Year 1		Year 2		Year 3		Year 4		Year 5		5-Year Budget	Funds Available	Source	Funding Gap	Potential Source				
				Source(s)		Source(s)		Source(s)		Source(s)		Source(s)										
				\$ Amount	Source	\$ Amount	Source	\$ Amount	Source	\$ Amount	Source	\$ Amount	Source									
Strategy 1: Work Plan Implementation and Administration		WCPW		\$ 5,000.00	RCO (LE Grant)	\$ 5,000.00	RCO (LE Grant)	\$ 30,000.00	TBD	\$ 30,000.00	TBD	\$ 30,000.00	TBD		\$ 10,000.00	LE Grant	\$ 90,000.00	TBD				
				\$ 31,000.00	PSP (LIO Grant)	\$ 31,000.00	PSP (LIO Grant)	\$ 72,000.00	TBD (NTA submitted)	\$ 72,000.00	TBD (NTA submitted)	\$ 72,000.00	TBD (NTA Submitted)									
				\$ 36,000.00		\$ 100,000.00		\$ 102,000.00		\$ 102,000.00		\$ 102,000.00							\$ 442,000.00	\$ 72,000.00		\$ 370,000.00
				Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun						Jul-Sep	Oct-Dec	Jan-Jun	Jul-Dec
Task 1: WRIA 1 Program Management/Oversight Task 2: Program Coordination Task 3: WRIA 1 Program Information and Outreach																TBD	\$ -	existing capacity	TBD	TBD		
																\$ 150,000.00	\$ 60,000.00	LE/LIO Grants	\$ 90,000.00	TBD		
																\$ 292,000.00	\$ 12,000.00	LIO Grant	\$ 280,000.00	TBD (NTA Submitted)		
Strategy 2: Ground Water Model(s) and Technical Support		WCPW		\$ 20,000.00	TBD	\$ 65,000.00	TBD	\$ 115,000.00	TBD	\$ 115,000	TBD	\$ 115,000	TBD				\$ 430,000.00	TBD				
				\$ 20,000.00		\$ 65,000.00		\$ 115,000.00		\$ 115,000.00		\$ 115,000.00		\$ 430,000.00	\$ -		\$ 430,000.00					
				Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec			
Task 1: Coordinate technical review of groundwater model Task 2: Identify options for groundwater operation Task 3: Identify long-term funding Task 4: Operate model Task 5: Expand groundwater model to other areas in WRIA 1																\$ 30,000.00	\$ -	existing capacity	\$ 30,000.00	TBD		
																\$ -	\$ -		\$ 100,000.00	\$ -	TBD	
																\$ 100,000.00	\$ -		\$ -	\$ -	TBD	
																\$ -	\$ -		\$ -	\$ -	TBD	
																\$ 300,000.00	\$ -		\$ -	\$ 300,000.00	TBD	
Strategy 3: Regional (WRIA 1) Water Supply Plan		PUD No. 1		\$ 102,500.00	TBD (NTA Submitted)	\$ 120,000.00	TBD (NTA Submitted)	\$ 60,000.00	TBD (NTA Submitted)	\$ 65,000.00	TBD (NTA Submitted)	\$ 45,000.00	TBD (NTA Submitted)				\$ 392,500.00	TBD (NTA Submitted)				
				\$ 102,500.00		\$ 120,000.00		\$ 60,000.00		\$ 65,000.00		\$ 45,000.00		\$ 392,500.00	\$ -		\$ 392,500.00	TBD (NTA Submitted)				
				Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec			
Task 1: Coordinate water supply technical staff team Task 2: Consolidate/quantify water availability, use and supply needs (Coordinate task with Strategy 4, Task 2) Task 3: Compile existing information on instream water needs (not included in budget; co-managers indicated interest as task lead) Task 4: Identify and support water supply monitoring and research needs (coordinate identifying monitoring needs with Strategy 7 ) Task 5: Identify and evaluate solutions to address supply needs Task 6: Coordinate water supply/management solution information (Links to Strategy 6, 6091 Update) Task 7: Draft and final WRIA 1 Water Supply Plan																\$ 100,000.00	\$ -		\$ 100,000.00	TBD		
																\$ 45,000.00	\$ -		\$ 45,000.00	TBD		
																\$ 12,500.00	\$ -		\$ 12,500.00	TBD		
																TBD			TBD			
																\$ 110,000.00	\$ -		\$ 110,000.00	TBD		
																\$ 50,000.00	\$ -		\$ 50,000.00	TBD		
																\$ 75,000.00	\$ -		\$ 75,000.00	TBD		
Strategy 4: Drainage-Based Management Planning		WCPW				\$ 112,500.00	TBD (NTA Submitted)	\$ 112,500.00	TBD (NTA Submitted)	\$ 112,500.00	TBD (NTA Submitted)	\$ 112,500	TBD (NTA Submitted)									
				\$ -	\$ -	\$ 112,500.00		\$ 112,500.00		\$ 112,500.00		\$ 112,500.00		\$ 450,000.00	\$ -		\$ 450,000.00	NTA Submitted				
				Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec			
Task 1: Select pilot subbasin and establish planning team Task 2: Coordinate the synthesis and analysis of data, etc. Task 3: Implement and monitor early actions Task 4: Develop subbasin agreements and append to relevant plans Task 5: Adaptively manage process and repeat in other basins																TBD			\$ 55,000.00	\$ -	\$ 55,000.00	TBD
																TBD			TBD			
																TBD			TBD			
																TBD			TBD			
																TBD			TBD			

2/14/19 NOTE: Changes to narrative (Section I) will be reflected in Section II once the narrative changes are accepted.

Strategy	Admin. Lead	Year 1				Year 2				Year 3				Year 4		Year 5		5-Year Budget	Funds Available	Source	Funding Gap	Potential Source						
		Source(s)				Source(s)				Source(s)				Source(s)		Source(s)												
		\$ Amount	Source			\$ Amount	Source			\$ Amount	Source			\$ Amount	Source		\$ Amount						Source					
Strategy 5: Salmon Recovery Plan Implementation	Co-Managers	\$ 35,000.00	RCO (LE Grant)			\$ 375,000.00	TBD (NTAs Submitted)			\$ 65,000.00	RCO (PSAR Grant-Potential)			\$ 490,000.00	TBD (NTAs)		\$ 305,000.00	TBD (NTAs Submitted)		\$ 255,000.00	TBD (NTAs Submitted)			\$ 130,000.00	RCO (PSAR Grant Potential)			
		\$ 40,000.00	RCO PSAR Grant			\$ 55,000.00	RCO (LE Grant)																\$ 40,000.00	RCO (PSAR Grant)				
																							\$ 90,000.00	RCO (LE Grant)		\$ 1,425,000.00	TBD (NTAs Submitted)	
		\$ 75,000.00				\$ 495,000.00				\$ 555,000.00				\$ 305,000.00			\$ 255,000.00			\$ 1,685,000.00	\$ 260,000.00		\$ 1,425,000.00	TBD				
Task 1: Update the WRIA 1 Salmonid Recovery Plan and implement associated monitoring and adaptive management tasks  Task 2: Coordinate, support, and implement salmon recovery actions in WRIA 1  Task 3: Coordinate salmon recovery lead entity functions		Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec											
																		\$ 680,000.00	\$ 170,000.00	RCO (PSAR Grant Potential)	\$ 510,000.00	TBD (NTAs Submitted)						
																		\$ 795,000.00	\$ 20,000.00	RCO (LE Grant)	\$ 775,000.00	TBD (NTAs Submitted)						
																		\$ 210,000.00	\$ 70,000.00	RCO (LE Grant)	\$ 140,000.00	TBD						
Strategy 6: WRIA 1 Watershed Management Plan	WCPW	\$ 138,500.00	Ecology																				\$ 138,500.00	Ecology				
		\$ 50,000.00	Whatcom County			\$ 20,000.00	TBD			\$ 20,000.00	TBD			\$ 20,000.00	TBD		\$ 20,000.00	TBD			\$ 50,000.00		Whatcom Co.					
		\$ 188,500.00				\$ 20,000.00				\$ 20,000.00				\$ 20,000.00			\$ 20,000.00			\$268,500	\$ 188,500.00		\$80,000	TBD				
Task 1: Coordinate WRIA 1 Watershed Management Plan update for ESSB 6091  Task 2: Adaptively manage updates to WRIA 1 Watershed Management		Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec											
																		\$ 188,500.00	\$ 188,500.00	Ecology; Whatcom Co.	\$ -	TBD						
																		\$ 80,000.00	\$ -									
Strategy 7 - Integrated Monitoring Program and Data Management	PUD No. 1	\$350,010																										
		\$ 1,500.00	PSP (LIO grant)			\$ 423,210.00	TBD (NTA Submitted)														\$ 8,000.00		LIO Grant					
		\$ 96,000.00	WDFW (NEP Funds)			\$ 6,500.00	PSP (LIO grant)			\$ 432,539.00	TBD (NTA Submitted)			\$ 442,000.00	TBD (NTA Submitted)		\$ 451,750.00	TBD (NTA Submitted)			\$ 96,000.00		NEP Grant					
		\$ 447,510.00				\$ 429,710.00				\$ 432,539.00				\$ 442,000.00			\$ 451,750.00			\$2,203,509	\$ 104,000.00		\$ 2,099,509.00	NTA Submitted				
Task 1: Coordinate with WRIA 1 Staff Teams  Task 2: Identify key management questions and establish priorities  Task 3: Identify options for and implement preferred option for centralized data mgmt  Task 4: Identify and fund long-term integrated monitoring/data management  Task 5: Update WRIA 1 Long-term Monitoring Plan (Links to Strategy 6, Task 2)  Task 6: Implement cooperative monitoring agreements		Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec											
																		\$ 4,000.00	\$ 3,500.00	LIO Grant	\$ 500.00	TBD						
																		\$ -	\$ -	see notes	\$ -							
																		\$ 1,200.00	\$ 1,200.00	LIO Grant	\$ -							
																		\$ 2,195,509.00	\$ 96,010.00	NEP Grant	\$ 2,099,499.00							
																		\$ 2,800.00	\$ 2,800.00	LIO Grant	\$ -							
Strategy 8 - Whatcom LIO Coordination and Adaptive Management		WCPW																										
			\$ 19,500.00	PSP (LIO grant)			\$ 23,000.00	PSP (LIO grant)			\$ 20,000.00	TBD			\$ 20,000.00	TBD		\$ 20,000.00	TBD			\$ 42,500.00	LIO Grant					
			\$ 19,500.00				\$ 23,000.00				\$ 20,000.00				\$ 20,000.00			\$ 20,000.00			\$ 102,500.00	\$ 42,500.00		\$ 60,000.00	LIO Grant (anticipated)			
Task 1: Coordinate functions of the Whatcom LIO  Task 2: Annual update of Whatcom LIO Ecosystem Plan to reflect strategies 1-7 outcomes, priorities, etc.			Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec										
																			\$ 82,500.00	\$ 34,500.00	LIO Grant	\$ 48,000.00	LIO Grant (anticipated)					
																			\$ 20,000.00	\$ 8,000.00	LIO Grant	\$ 12,000.00	LIO Grant (anticipated)					
																			\$ 5,974,009.00	\$ 667,000.00								

Year 1		Year 2		Year 3		Year 4		Year 5	
\$ Amount	Source	\$ Amount	Source	\$ Amount	Source	\$ Amount	Source	\$ Amount	Source
\$ 52,000.00	PSP (LIO Grant)	\$ 60,500.00	PSP (LIO Grant)	\$ 65,000.00	RCO (Grants)	\$ 1,181,500.00	TBD (Funding Needed)	\$ 1,121,250.00	TBD (Funding Needed)
\$ 96,000.00	WDFW (NEP)	\$ 125,000.00	RCO (Grants)	\$ 1,352,039.00	TBD (Funding)				
\$ 138,500.00	Ecology	\$ 1,179,710.00	TBD (Funding Needed)						
\$ 50,000.00	Whatcom Co.								
\$ 80,000.00	RCO (Grants)								
\$ 472,510.00	TBD (Funds Needed)								
\$ 889,010.00		\$ 1,365,210.00		\$ 1,417,039.00		\$ 1,181,500.00		\$ 1,121,250.00	

**2/14/19 NOTE: Changes to narrative (Section I) will be reflected in Section II once the narrative changes are accepted.**

>>This is a working budget document with planning level estimates.<<					
	Year 1	Year 2	Year 3	Year 4	Year 5
Strategy 1 - Work Plan Implementation and Administration	\$ 36,000.00	\$ 100,000.00	\$ 102,000.00	\$ 102,000.00	\$ 102,000.00
Task 1: WRIA 1 Program Management/Oversight	\$ -	\$ -	TBD	TBD	TBD
Task 2: Program Coordination	\$ 30,000.00	\$ 30,000.00	\$ 30,000.00	\$ 30,000.00	\$ 30,000.00
Maintain WRIA 1 general meeting schedule and framework	\$ 26,000.00	\$ 26,000.00			
Maintain general communications, post MT, WMB notices, etc.	\$ 4,000.00	\$ 4,000.00			
Task 3: WRIA 1 Program Information and Outreach	\$ 6,000.00	\$ 70,000.00	\$ 72,000.00	\$ 72,000.00	\$ 72,000.00
Coordinate with WWIN to provide/support outreach (status quo)	\$ 6,000.00	\$ 6,000.00			
Integrated Outreach NTA 2018 (small grant program, communication strategy, WWIN support)		\$ 64,000.00	\$ 72,000.00	\$ 72,000.00	\$ 72,000.00
Strategy 2 - Ground Water Model(s) and Technical Support	\$ 20,000.00	\$ 65,000.00	\$ 115,000.00	\$ 115,000.00	\$ 115,000.00
Task 1: Coordinate technical review of groundwater model	\$ 15,000.00	\$ 15,000.00			
Task 2: identify options for groundwater operation	\$ -	\$ -			
Task 3: Identify long-term funding	\$ 5,000.00	\$ 50,000.00	\$ 15,000.00	15,000	15,000
Task 4: Operate model		\$ -	\$ -	\$ -	\$ -
Task 5: Expand groundwater model to other areas in WRIA 1			\$ 100,000.00	\$ 100,000.00	\$ 100,000.00
Strategy 3 - Regional (WRIA 1) Water Supply Plan	\$ 102,500.00	\$ 120,000.00	\$ 60,000.00	\$ 65,000.00	\$ 45,000.00
Task 1: Coordinate water supply technical staff team	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00
Task 2: Consolidate/quantify water availability, water use, and water supply needs	\$ 20,000.00	\$ 10,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00
Task 3: Consolidate and quantify instream water needs (co-managers indicated interest as task lead)	\$ 2,500.00	\$ 10,000.00	TBD	TBD	TBD
Task 4: Identify and support water supply monitoring and research needs (identify priority monitoring needs under Strategy 7)	n/a	n/a	n/a	n/a	n/a
Task 5: Identify and evaluate solutions to address supply needs	\$ 40,000.00	\$ 30,000.00	\$ 20,000.00	\$ 20,000.00	\$ -
Task 6: Coordinate water supply and management solution information	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00
Task 7: Draft and final WRIA 1 Water Supply Plan	\$ 10,000.00	\$ 40,000.00	\$ 5,000.00	\$ 10,000.00	\$ 10,000.00
Strategy 4 - Drainage-Based Management Planning	\$ -	\$ 112,500.00	\$ 112,500.00	\$ 112,500.00	\$ 112,500.00
Task 1: Select pilot subbasin and establish planning team	\$ -	TBD			
Task 2: Coordinate the synthesis and analysis of data, etc.	\$ -	\$ 10,000.00	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00
Task 3: Implement and monitor early actions		TBD			
Task 4: Develop subbasin agreements and append to relevant plans		TBD			
Task 5: Adaptively manage process and repeat in other basins		TBD			

**2/14/19 NOTE: Changes to narrative (Section I) will be reflected in Section II once the narrative changes are accepted.**

Strategy 5- Salmon Recovery Plan Implementation	\$ 75,000.00	\$ 495,000.00	\$ 555,000.00	\$ 305,000.00	\$ 255,000.00
Task 1: Update the WRIA 1 Salmonid Recovery Plan and implement associated monitoring and adaptive management tasks	\$ 40,000.00	\$ 340,000.00	\$ 200,000.00	\$ 50,000.00	\$ 50,000.00
Technical work - 2018-2019 Adaptive Management Proposed Work	\$ 40,000.00	\$ 85,000.00			
Update Restoration and Protection Strategy Matrices		\$ 5,000.00			
Chinook Life Cycle Model (NTA)		\$ 200,000.00			
Habitat Viability Assessment and Effectiveness Monitoring (NTA)		\$ 50,000.00			
Salmonid Recovery Plan Chapter Update (NTA)			\$ 200,000.00		
Task 2: Coordinate, support, and implement salmon recovery actions in WRIA 1	\$ 5,000.00	\$ 110,000.00	\$ 310,000.00	\$ 210,000.00	\$ 160,000.00
WRIA 1 Culvert Strategic Assessment and Correction (NTA)		\$ 100,000.00	\$ 300,000.00	\$ 200,000.00	\$ 150,000.00
Technical support for WRIA 1 salmon recovery actions and WMB work plan	\$ 5,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00
Task 3: Coordinate salmon recovery lead entity functions	\$ 30,000.00	\$ 45,000.00	\$ 45,000.00	\$ 45,000.00	\$ 45,000.00
Strategy 6- WRIA 1 Watershed Management Plan Update	\$ 188,500.00	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00
Task 1: Coordinate WRIA 1 Watershed Management Plan update for ESSB 6091	\$ 188,500.00				
Task 2: Adaptively manage updates to WRIA 1 Watershed Management Plan		\$ 20,000.00	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00
Strategy 7 - Integrated Monitoring Program and Data Management	\$ 447,510.00	\$ 429,710.00	\$ 432,539.00	\$ 442,000.00	\$ 451,750.00
Task 1: Coordinate with WRIA 1 Staff Teams	\$ 1,500.00	\$ 2,500.00	n/a	n/a	n/a
Task 2: Identify key management questions and establish priorities	\$ -	\$ -	n/a	n/a	n/a
Task 3: Identify options for and implement preferred option for centralized data mgmt	\$ -	\$ 1,200.00	n/a	n/a	n/a
Task 4: Identify funding needs for long-term integrated monitoring/data management	\$ 446,010.00	\$ 423,210.00	\$ 432,539.00	\$ 442,000.00	\$ 451,750.00
USGS Gages	\$ 80,010.00	\$ 83,210.00	\$ 86,539.00	\$ 90,000.00	\$ 93,600.00
Existing GW Data Loggers	\$ 16,000.00	\$ 20,000.00	\$ 21,000.00	\$ 22,000.00	\$ 23,150.00
Water quality stations	\$ 100,000.00	\$ 100,000.00	\$ 105,000.00	\$ 110,000.00	\$ 115,000.00
Land Cover/Land Development	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00
Habitat	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00
Data Management	\$ 50,000.00	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00
Task 5: Update WRIA 1 Long-term Monitoring Plan	\$ -	\$ 2,800.00	\$ -	\$ -	\$ -
Task 6: Cooperative monitoring agreements	\$ -	\$ -	\$ -	\$ -	\$ -
Strategy 8 - Whatcom LIO Coordination and Adaptive Management	\$ 19,500.00	\$ 23,000.00	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00
Task 1: Coordinate functions of the Whatcom LIO	\$ 16,500.00	\$ 18,000.00	\$ 16,000.00	\$ 16,000.00	\$ 16,000.00
Task 2: Annual update of Whatcom LIO Ecosystem Plan to reflect strategies 1-7 outcomes, priorities, etc.	\$ 3,000.00	\$ 5,000.00	\$ 4,000.00	\$ 4,000.00	\$ 4,000.00
Total	\$ 889,010.00	\$ 1,365,210.00	\$ 1,417,039.00	\$ 1,181,500.00	\$ 1,121,250.00

**2/14/19 NOTE: Changes to narrative (Section I) will be reflected in Section II once the narrative changes are accepted.**

### **Strategy 1 Work Plan Implementation and Administration**

*Task 1 WCPW Natural Resource Manager is assumed to continue as contact for the overall management of the WRIA 1 Board framework for the first two years and revisited as the work plan is updated annually.*

*Task 2 Coordination budget line item for meeting coordination includes the regular annually scheduled meetings for the WRIA 1 Watershed Management Board, the WRIA 1 Management Team, and a limited number joint Staff Team meetings. Regular technical salmon staff meetings are covered under Strategy 5. Watershed Staff Team meetings outside of the joint staff meetings are not covered.*

*Task 2 Coordination budget line also includes required LIO grant elements to respond to public, post meeting notices, etc (generally maintain communications)*

*Task 3 WRIA 1 Program Information and Outreach is currently leveraged by participating in some of the efforts organized through the Whatcom Watersheds Information Network, which includes involvement of several WRIA 1 Watershed Management Board entity outreach staff, (e.g., local symposiums, forums, speaking events). Under the 2018-2022 Action Agenda process, a near-term action (NTA) was submitted to support and broaden WRIA 1 information and outreach; the budget estimates reflect the NTA submitted.*

### **Strategy 2 Ground Water Model(s) and Technical Support**

*Task 1 budget estimate of \$30,000 provided by WCPW for October 2018-March 2019. Funds for contracting technical experts for review of both the conceptual site model and groundwater/surface water model and consultant team to support third party review efforts. For spreadsheet purposes, \$15k was added to year 1 and \$15K to year 2.*

*Task 2 WCPW using existing capacity to complete Sept. 2018-March 2019*

*Task 3 budget estimate of \$100,000 for Oct. 2018-Dec. 2022 provided by WCPW for the full five year period; for spreadsheet purposes, it was distributed equally over the timeframe identified. Estimate includes fees for purchasing the software needed to run the model, consultant support with model simulations as we get up-to-speed with the operation of the model as applied to specific scenarios, and periodic model updates as significant data come available that warrant an update to the conceptual site model and/or model calibration.*

*Task 4 existing WCPW capacity January 2019-Dec. 2022*

*Task 5 \$300,000 budget estimate provided by WCPW for July 2020-Dec. 2022; for spreadsheet purposes, it was distributed equally over the timeframe identified.*

### **Strategy 3 Regional (WRIA 1) Water Supply Plan**

*Budget estimates for Tasks 1, 2, 5, 6, and 7 provided by PUD No. 1 .*

*Budget estimate for Task 3 provided by Nooksack Tribe Natural Resources Dept.as an estimate for Tribal technical staff to support the compilation of data for instream needs.*

*Budget estimate for Task 4 to be determined. Initial work of identifying monitoring needs, however, anticipated to be coordinated with Strategy 7.*

*Tasks 4 and 6 are unfunded. However, due to their direct link to tasks in other Strategies they are shown in the timeline as advancing (green bar) because the tasks they are linked to are funded or partially funded. While the tasks will advance due to their linkage to other strategies, there may still be funding needs associated with fully implementing the task.*

*A 2018 Near Term Action (NTA) was submitted to implement this strategy.*

### **Strategy 4 Drainage-Based Management Planning**

*Overall budget estimate is based on an estimate the Ag Water Board had developed in 2017 for Drainage Based Management Planning. The total cost was equally distributed across the four year timeframe.*

*Task 2 budget estimate provided by Nooksack Tribe Natural Resources Dept as an estimate for Tribal technical staff to support the data synthesis and analysis task. The cost estimate for Task 2 is likely only a partial estimate of the total cost for this task.*

*It is anticipated that identifying the pilot subbasin(s) and identifying the planning team can advance under Strategy 1. Additional funding would be needed to support the subbasin planning team once formed.*

*A 2018 Near Term Action (NTA) was submitted to implement this strategy.*

### **Strategy 5 Salmon Recovery Plan Implementation**

*Co-Managers listed as administrative lead because the Lummi Nation has been fiscal agent for the salmon coordinating grant acting on behalf of the WRIA 1 Lead Entity, which is the WRIA 1 Watershed Management Board (previously the WRIA 1 Salmon Recovery Board) and because the co-manager technical staff provide significant technical support to the tasks identified.*

*Four 2018 Near Term Actions (NTAs) were submitted to implement this strategy including: Chinook Life Cycle Model, Habitat Viability Assessment and Effectiveness Monitoring, Salmonid Recovery Chapter Update, and WRIA 1 Culvert Strategic Assessment and Correction.*

*Costs associated with recovery projects and actions such as instream restoration projects, habitat protection, and hatchery management are not included in the WRIA 1 Watershed Management Board work plan.*

*Estimated budgets are for planning purposes and for years three through five are place holders.*

*The PSAR grant "potential" refers to funding allocated to the salmon lead entity to advance projects. The scope of, and for, technical work that can be advanced with those funds has only had preliminary consideration by salmon technical staff; the budget is a placeholder for planning purposes and a technical scope of work would be developed.*

### **Strategy 6 WRIA 1 Watershed Management Plan Update**

*Task 1 budget includes \$50,000 WCPW supplemental budget for work under ESSB 6091 and \$138,000 from Dept. of Ecology for the technical consultant.*

*Years 2-5 have a placeholder budget because it is expected that the Watershed Management Plan (WMP) update prepared for ESSB 6091 will include an adaptive management loop for reviewing, evaluating, and, if applicable, adjusting projections and/or solutions, and that the adaptive management will involve a process similar to that used for the WMP update.*

### **Strategy 7 Integrated Monitoring Program and Data Management**

*Tasks 1-3 include coordination tasks to identify monitoring priorities and objectives and update the WRIA 1 Long Term Monitoring Plan to reflect the integrated monitoring needs.*

*Task 3 includes implementing a preferred option and the costs associated with that are placeholder estimates. Identifying the full cost will be part of the process of identifying options and a preferred option for managing the data.*

*Task 4 identifies elements of the integrated monitoring. In some cases, such as the USGS gages and and GW data loggers, the cost estimates are based on the existing costs. The water quality cost estimate is based on previous monitoring costs for a suite of parameters that Nooksack Tribe Natural Resources staff managed on behalf of the WRIA 1 Joint Board. It is not the intent that the water quality monitoring element replaces or duplicates the bacterial monitoring that is being implemented through the Whatcom Clean Water Program; it is seen as being complementary. It is also an opportunity to leverage existing efforts of the Whatcom Clean Water Program monitoring. The Land Cover/Land Development, Habitat, and Data Management are all placeholder estimates.*

*Task 6 does not have a cost estimate because it is assumed that entering into agreements for monitoring implementation and/or funding can be done with existing staff.*

*A 2018 Near Term Action (NTA) was submitted to implement this strategy.*

*Not included in the cost estimates specifically, are monitoring needs that may be associated with the ESSB 6091 watershed plan update. It is anticipated that as part of the work plan review for 2019, the monitoring needs associated with the update will be considered.*



### **SECTION III – TECHNICAL APPENDICES**

1. Link to the [WRIA 1 Salmon Recovery 4 Year Project List](#)
2. 2018 Near-Term Actions Supporting WRIA 1 Watershed Management Board Work Plan Strategies and Whatcom Ecosystem Recovery (attached: list of 2018 Near Term Actions). [Link to view the NTA Fact Sheets](#)
3. Link to the [Current WRIA 1 Long Term Monitoring Plan](#)

August 1, 2018

*The following Near Term Actions (NTAs) were submitted for inclusion in the 2018-2022 Action Agenda for Puget Sound. Details for the NTAs listed below can be found on the Puget Sound Partnership site using the link on the previous page of this document.*

**NTA ID            NTA Title**

**2018 Near Term Actions Supporting WRIA 1 Watershed Management Board 2018-2023 Work Plan**

2018-0228	WRIA 1 Integrated Monitoring and Centralized Data Management System
2018-0401	Regional (WRIA 1-Wide) Water Supply and Management Plan
2018-0564	Drainage-Based Management Planning
2018-0620	WRIA 1 Integrated Program Outreach and Engagement
2018-0554	Nooksack Watershed Steelhead Recovery Planning
2018-0622	WRIA 1 Integrated Program Implementation
2018-0894	Nooksack Chinook Life Cycle Modeling
2018-0905	Nooksack Watershed Habitat Viability Assessment and Effectiveness Monitoring
2018-0906	WRIA 1 Salmonid Recovery Plan Update
2018-0629	WRIA 1 Culvert Strategic Needs and Priority Barrier Correction

**2018 Near Term Actions Supporting Whatcom Ecosystem Recovery**

2018-0171	Whatcom County Pollution Identification and Correction (PIC) Program
2018-0214	Lummi Island Quarry Habitat Restoration Project
2018-0340	Estimate of Nooksack Chinook HOS and NOS Productivity from Smolt Trap Catch Analysis
2018-0346	Radio Tag Evaluation of Survival, and Migration of Adult Early Chinook in the Nooksack River
2018-0377	Estimation of Hatchery Origin and Natural Origin early Chinook on Nooksack Spawning Grounds
2018-0389	Surface to Ground Water Conversions
2018-0422	Transboundary Water Quality Coordination
2018-0447	South Fork Groundwater Model Development
2018-0781	Little Squalicum Estuary Restoration Project
2018-0795	Whatcom County Focused - Community Based K-12 Shellfish Education, and Stewardship: Meeting Washington Shellfish Initiative Goal 7: Educate the next generation about shellfish resources, ecosystem services and water quality.
2018-0808	Squalicum Creek Reroute Phase 3
2018-0850	Squalicum Creek Reroute Phase 4
2018-0889	Watershed Improvement District Technical Assistance
2018-0925	Squalicum Creek Reroute at Wandering Wood
2018-0927	Marine and Nearshore Restoration Implementation in WRIA 1
2018-0928	Water Quality Infrastructure Prioritization
2018-0932	Stormwater Retrofit Design Project
2018-0934	Stormwater Retrofit Construction Project
2018-0939	West Cemetery Creek Water Quality Improvements
2018-0956	Farm Friendly Communities: Agricultural Education for Change
2018-0415	Nooksack River Forks Riparian Conditions Analysis
2018-0453	North Fork Tributary Fish Barrier
2018-0457	North Fork Nooksack River Boyd Creek Reach Restoration
2018-0459	North Fork Nooksack River Maple Creek Reach Restoration
2018-0463	South Fork Nooksack River Fish Camp (Tseq) Reach Restoration
2018-0466	South Fork Nooksack River Black Slough Reach Restoration
2018-0476	South Fork McCarty Reach
2018-0490	South Fork Upper Cavanaugh-Fobes Instream Restoration
2018-0493	South Fork Camp 18 Instream Restoration Project
2018-0494	South Fork Nooksack Elk Flats Restoration
2018-0498	Middle Fork Nooksack Porter Creek Reach Instream Restoration
2018-0501	North Fork Nooksack River Farmhouse Reach Restoration
2018-0515	South Fork Nooksack River Homesteader Reach Restoration
2018-0516	Upper South Fork Effectiveness Monitoring
2018-0634	Nooksack River Floodplain Acquisitions
2018-0788	Middle Fork Nooksack River Fish Passage
2018-0946	Whatcom Creek Estuary Enhancement, Holly to Roeder