



NW-1003

## Section 2.2 Capital Budget Grant Request Form Watershed Plan Implementation and Flow Achievement

### Project Title: Bertrand Flow Augmentation

[If your Watershed Plan Implementation and Flow Achievement Request is related to or part of a Operational Project Funding Request for 2009-11 please cross-reference the name of that project in parenthesis above]

**County:** Whatcom

**WRIA:** 1 (Nooksack)

If more space is needed attach additional sheets

| 1. Applicant Information  |                                   |                          |
|---|-----------------------------------|--------------------------|
| <b>Applicant name</b><br>Bertrand Watershed Improvement District                  | <b>Phone no.</b><br>(360)354 1337 | <b>Fax no.</b>           |
| <b>Address</b><br>1796 Front St   |                                   |                          |
| <b>City</b><br>Lynden   | <b>State</b><br>WA                | <b>Zip code</b><br>98264 |
| <b>Email address</b>  |                                   |                          |
| <b>Water right holder name (If applicable and if other than applicant)</b><br>N/A | <b>Phone Number</b><br>( )        | <b>Fax Number</b><br>( ) |
| <b>Mailing address</b>  |                                   |                          |
| <b>City</b>   | <b>State</b>                      | <b>Zip code</b>          |

| 2. Project Location  |
|--|
| <b>Project name</b><br>Bertrand Creek Flow Augmentation  |
| <b>Project location</b><br>Jackman Road approximately 1800 feet south of U.S Canadian border Lat/Long 48°59'50.27"N; 122°30'2.32"W |
| <b>Stream reach mile or location</b> Approximately RM 7 near the US/Canadian border  |



**Section 2.2**  
**Capital Budget Grant Request Form**  
**Watershed Plan Implementation and Flow Achievement**

**3. Project Type and Description**

(Check all that apply)

Conservation and/or infrastructure improvement  
(pumps and pipes)

Water storage feasibility study

Water exchange or water right acquisition



## Section 2.2

### Capital Budget Grant Request Form

### Watershed Plan Implementation and Flow Achievement

#### Please describe your project in detail

The objective of this project is to increase summer instream flows in an important salmonid spawning reach of Bertrand Creek. The project would augment Bertrand Creek low summer flows with 1-2 cfs of groundwater pumped from wells. Water will be pumped from proven aquifer, aerated and transported to the upper Bertrand Creek to double summer stream flows. The project has been identified by the Bertrand Watershed Improvement District (a formal coalition of agricultural landowners) and the Bertrand Instream Flow Technical Group as an early on the ground action toward resolving long standing conflicts over agriculture water use water use and salmon recovery in the Bertrand Basin. Bertrand Creek is a large, trans-boundary lowland tributary of the Nooksack River supporting spawning populations of ESA listed Puget Sound steelhead as well as fall chinook, coho, chum and sockeye salmon, and resident and sea-run cutthroat trout. Bertrand Creek likely provides habitat for juvenile life stages of ESA listed Nooksack early chinook and Puget Sound Bull trout as well as critical habitat for Nooksack Dace and the Salish sucker, both Canadian Species at Risk. The 1.8-mile reach of Bertrand Creek that will be most directly impacted by this project represents some of the best spawning and rearing habitat in the watershed as determined by a complete Bertrand Creek Habitat Assessment, annual WDFW spawning surveys and recent juvenile fish assessment work by WDFW (Vadas, 2007). Low summer flows (<1 cubic foot/second) in this reach have resulted in a reduction in water quantity, increase in water temperatures, and an overall reduction in juvenile rearing habitat. A test groundwater augmentation well was dug in the fall 2008 and pumped 1-2 cfs into nearby Jackman road ditch. This project will make the well permanent and will pump at least 1 cfs into upper Bertrand Creek above the important 1.8-mile reach during the critical juvenile salmonid rearing period. The additional water will increase instream flow, decrease water temperatures, and increase juvenile rearing habitat. It is conceivable that by doubling the summer instream flows this project will also double the rearing productivity in the project reach.

#### Use this box to make any other comments regarding the project and water rights involved

Test pumping was completed during the fall of 2008. Template for Cooperative Resource Management – the flow enhancement project in Bertrand Creek is regarded as a pilot project for how farmers and fish interests can pioneer new management concepts for cooperation in natural resource management. The success of this project will inject hope for similar projects throughout the region where farmers and tribal interests and cooperatively devise agreements that benefit the landowners, fish, and the natural resources. The ultimate winner in such agreements is the entire community



## Section 2.2

# Capital Budget Grant Request Form

## Watershed Plan Implementation and Flow Achievement

Describe the project by task (statement of work)

Task 1. Test well; Install well, temporary power source, pump and completed extended pump test to verify aquifer capacity and water quality, as well as develop appropriate aeration and water treatment processes. Complete Fall 2008

Task 2. Establish pre project baseline flows and fish population estimates in Bertrand and Jackman. Completed 2007 and 2008

Task 3: Install 25 hp pump in existing well, install 3 phase 440 V power, 5000' of 6" conveyance pipe, construct aeration tower, iron treatment system and Bertrand outfall structure.

Task 4: Monitor effectiveness of augmentation for flow enhancement, water quality, and habitat.

### 4. Project Budget

Project Budget \$291,070

Total budget by project task or by expenditure

|  |            |
|--|------------|
| Task 1: Test well installation and pumping (complete)          | \$         |
| Task 2: Complete fish and flow baseline work ( WDFW )          | \$         |
| Task 3 : Install pump, construct water treatment, install pipe | \$ 256,070 |
| Task 4: Monitor Project Effectiveness                          | \$ 35,000  |



## Section 2.2 Capital Budget Grant Request Form Watershed Plan Implementation and Flow Achievement

### 5. Funding Source Information

Total project amount expected to be provided by sources other than this program (dollar total and percent of project budget)

Identify sources and type of funding other than through this program grant. Include expected dates of participation. Include as an attachment; letters of commitment, offer letters, application approvals, etc.

Source and type of funding: Fish baseline monitoring WDFW, water team

Amount: \$7500.00

Status: ongoing

Dates of participation: 2007 -2009

Source and type of funding:

Amount:

Status:

Dates of participation:

Source and type of funding:

Amount:

Status:

Dates of participation:

Source and type of funding:

Amount:

Status:

Dates of participation:



## Section 2.2

# Capital Budget Grant Request Form

## Watershed Plan Implementation and Flow Achievement

| <b>6. Instream Flow and other Instream Habitat Benefits</b>  |                    |                  |
|--|--------------------|------------------|
| <b>A. Water Right Information - Attach Water Right documents</b><br>(You may skip this section if this application is for Storage Feasibility Study funding) |                    |                  |
| Water right holder's name (if other than applicant)  | Phone no:<br>(   ) | Fax no:<br>(   ) |
| Address  |                    |                  |
| City   | State              | Zip code         |
| Complete legal description of the property attached to this water right:   |                    |                  |
| Water right number:  |                    |                  |
| Parcel number associated with this water right:  |                    |                  |
| Do you own the property proposed for this project? If not, please explain:   |                    |                  |
| If the grant applicant is not the water right holder, please explain the reason:   |                    |                  |
| Water source (Stream name).  |                    |                  |

| <b>B. Water Usage</b>  |
|--|
| <p>Has water been put to beneficial use in the past five years?</p> <p style="text-align: center;">Yes <input type="checkbox"/>   No <input type="checkbox"/>   I don't know <input type="checkbox"/></p> <p>Describe that use in terms of the specific beneficial use during that period:</p> <p>(Please attach any available documents that verify that use during the last five years. Include aerial photographs, power company records, flow meter records, crop type records, NRCS documentation or FSA records)</p> |



## Section 2.2

### Capital Budget Grant Request Form

### Watershed Plan Implementation and Flow Achievement

Has beneficial use of this water ceased for a period of five or more years during any period since 1967?  
Yes  No

Please describe the beneficial use for the water quantified under the water right discussed above. Describe the following: purpose (examples: domestic, irrigation, municipal); system type; if irrigation, describe crop type.

Quantify as nearly as possible current water use:

Instantaneous rate (QI) of use: \_\_\_\_\_ CFS

Annual rate (QA) of use \_\_\_\_\_ ACRE- FEET

Historic beneficial use quantity of the water right (highest of the last 5 years/ irrigation seasons in instantaneous and annual quantities)

\_\_\_\_\_ CFS      \_\_\_\_\_ ACRE-FEET

If irrigation, how many acres are irrigated under this water right?

Are there other water rights associated with this specific water right?

In order to process this pre-application ecology requires the following information (include for the previous five years; please attach copies of all documents and maps)

- ◆ Power data (contact local power utility for pump records, etc.)
- ◆ Historical crop type data (contact local FSA office)
- ◆ Flow meter records (contact local power utility)
- ◆ Aerial photos (contact local FSA office)



## Section 2.2

# Capital Budget Grant Request Form

## Watershed Plan Implementation and Flow Achievement

| <b>C. Estimated Total Water Savings</b>   |     |     |     |     |     |     |     |     |     |     |     |     |     |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <p><b>Infrastructure projects:</b> Estimate the water to be conserved through this project. Provide engineering or technical analysis to support this estimate.</p> |     |     |     |     |     |     |     |     |     |     |     |     |     |
| MONTH   | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | TOT |
| QA<br>(ACRE-FEET)   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| QI (CFS)  |     |     |     |     |     |     |     |     |     |     |     |     |     |



## Section 2.2 Capital Budget Grant Request Form Watershed Plan Implementation and Flow Achievement

### D. Additional Instream Benefits

*Describe other instream benefits envisioned as a result of funding this project:* The limiting factors for salmonid production during the summer months are instream low flow levels, high water temperatures, and a lack of wetted habitat (Smith, 2002, Vadas, 2007). This project will address those limiting factors.

**Increased Instream Flow** – at least 1 cfs will be pumped into Bertrand Creek more than doubling summer instream flows. Mean instream flows in the project reach can drop below 1 cfs with daily flows often less than .25 cfs. (figure 1). An increase of 1 cfs will have a relatively dramatic impact on the instream flows in the critical habitat reach of Bertrand Creek.

**Decrease Water Temperature** – the groundwater being pumped into the creek is 5 degrees colder than the average summer water temperatures. Its addition will help to lower summer water temperatures within the project reach.

**Increased Juvenile Rearing Habitat** – the additional water in the streambed will increase the overall amount of habitat available for pools, riffles, and invertebrate substrate and improve the ease of fish passage between pools now limited by shallow riffles (Vadas, 2007).

1 cfs of well water will be used to augment the summer flows of Bertrand creek north of H street nearly doubling the summer flow in this reach of the creek. .

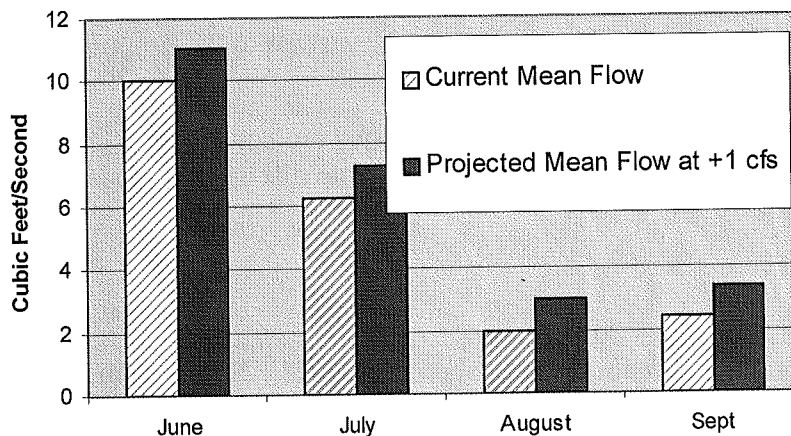


Figure 1. Monthly mean flows in Bertrand Creek upstream of project reach. Daily flows can be less than half the current mean flow. Project result is an additional 1-2 cfs daily flow.



**Section 2.2**  
**Capital Budget Grant Request Form**  
**Watershed Plan Implementation and Flow Achievement**

**7. Resources currently committed to ensure long-term performance of the proposed project (operation and maintenance).**

Who is responsible for long-term operation and maintenance of the project?  
The Bertrand Watershed Improvement District

Have operation and maintenance costs been identified? Yes  No   
If yes, please describe: Operation cost include electrical power to operate a 25 hp submersible pump 24 hours per day during the months of July, August and September.

Summarize these costs on an annual basis below:  
Electricity \$5,000/yr  
Monitoring and Maintenance \$1500/yr

Are measurement devices other than diversion source meters necessary to monitor compliance with the project intent or plan? Yes  No   
If yes, please describe: The overall project goals of the re-alignment will be determined by habitat established and maintained.

Does a water measurement device exist on the source and downstream of the proposed project?  
 yes  no

If no, will a water measurement device be installed as part of this project? Yes  No   
If yes, describe location and operating entity: Flow meter on pump discharge and staff gage at creek  
  
If yes, provide the river mile:

What is the nearest stream gage downstream of the proposed project? Source name  
The USGS maintains a gage near RM 1 at Rathborne Rd



DEPARTMENT OF  
**ECOLOGY**  
State of Washington

**Section 2.2**  
**Capital Budget Grant Request Form**  
**Watershed Plan Implementation and Flow Achievement**

**8. Proponent's Readiness to Proceed**



## Section 2.2

# Capital Budget Grant Request Form

## Watershed Plan Implementation and Flow Achievement

Describe status of feasibility reports, engineering design, and permits. Provide documentation for these deliverables and describe the project effort timeline as appropriate (submit two (2) copies of all required documents).

Does the project proponent own the land for the proposed project? If not, does the proponent have documented access to the right of way or owns an easement to the property proposed (please attach appropriate documentation including title report as applicable).

### Design/Engineering Status:

- |                                   |                                     |                  |
|-----------------------------------|-------------------------------------|------------------|
| Pre-planning (pre - permitting)   | <input checked="" type="checkbox"/> | Status: complete |
| Pre-design (design reports) (10%) | <input checked="" type="checkbox"/> | Status: ongoing  |
| Schematic design (30%)            | <input checked="" type="checkbox"/> | Status: ongoing  |
| Design development (75%)          | <input type="checkbox"/>            | Status:          |
| Construction documents (95%)      | <input type="checkbox"/>            | Status:          |
| Bid documents (ready for bid)     | <input type="checkbox"/>            | Status:          |

### Permit Status

- |   |                                     |  |
|---|-------------------------------------|--|
| SEPA City of Lynden lead agency         | <input checked="" type="checkbox"/> | Status:                                |
| 401                                     | <input type="checkbox"/>            | Status:                                |
| Dept. of Fish and Wildlife consultation | <input checked="" type="checkbox"/> | Status: WDFW is a proponent of project |
| Storage and/or Secondary Use Permit     | <input type="checkbox"/>            | Status:                                |
| Other: ( _____ )                        | <input type="checkbox"/>            | Status:                                |
| Other:( _____ )                         | <input type="checkbox"/>            | Status:                                |
| Other: ( _____ )                        | <input type="checkbox"/>            | Status:                                |



## Section 2.2

# Capital Budget Grant Request Form

## Watershed Plan Implementation and Flow Achievement

**9. Signatures** (send this sheet electronically and by original signature in surface mail)

I certify that the information above is true and accurate to the best of my knowledge.

I understand that in order to process my application, I am hereby granting staff from the Department of Ecology access to the above site(s) for inspection and monitoring purposes.

If assisted in the preparation of the above application, I understand that all responsibility for the accuracy of the information rests with me.

I also understand that I may rescind this application at any time prior to signing the Agreement with no other obligations or requirements.

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
(Applicant/ Grant Recipient) (Date)

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
(Water Right Holder) (Date)

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
(Land Owner(s) of Existing Place of Use) (Date)

For More Information Contact: Dave Burdick  
**Voice:** (360) 407-6094  
**Email:** [dbur461@ecy.wa.gov](mailto:dbur461@ecy.wa.gov)  
**Web:** <http://www.ecy.wa.gov/watershed/Index.html>

If you need this document in an alternate format, please call the Water Resources Program at 360-407-6600. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.





December 5, 2008

**Item 100**  
**(Volume 3 – Tab 4, tenth Set)**

Document:

WRIA 1 Priority Ranking of 2009-2011 Washington State Department of Ecology Watershed Implementation Grant Requests


Administrative Summary:

The Washington State Department of Ecology requests that local watersheds prioritize grant applications submitted from their watershed for funding through the 2009-2011 Watershed Implementation Grant. The WRIA 1 Joint Board recommends the following priority order for the WRIA 1 sponsored 2009-2011 Watershed Implementation Grant proposals. The operating and capital budget proposals are prioritized separately.

| Project   | Sponsor        | Priority | Grant Request                |
|---|----------------|----------|------------------------------|
| <b>Operational Budget Projects</b>                |                |          |                              |
| Nooksack River Basin Stream Gaging Network        | Lummi Nation   | 1        | \$317,742                    |
| WRIA 1 Instream Flow Negotiation Support          | PUD No. 1      | 2        | \$250,000                    |
| South Fork Nooksack Water Budget                  | Nooksack Tribe | 3        | \$110,000                    |
| DSS Implementation                                | Whatcom County | 4        | \$153,000                    |
| WRIA 1 Water Quality Monitoring                   | Nooksack Tribe | 5        | \$153,000                    |
| <b>Capital Budget Projects</b>                    |                |          |                              |
| Bertrand Flow Augmentation                        | Bertrand WID   | 1        | \$631,238 <del>291,020</del> |
| Water Supply Pipeline to Bertrand Creek Watershed | Bertrand WID   | 2        | \$300,000                    |
| Pepin Creek Re-Alignment                          | City of Lynden | 3        | \$2,480,000                  |

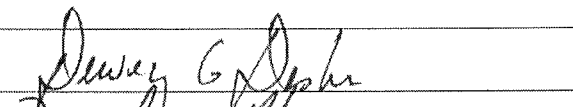
The WRIA 1 Watershed Planning Staff Team (Staff Team) reviewed the proposals and supporting material prior to preparing a Staff Team recommendation. The Staff Team recommendation was distributed to the WRIA 1 Planning Unit for review and comment prior to submitting to the WRIA 1 Joint Board. A Background Document providing additional information on the above projects is attached to this signature page.


WRIA 1 Watershed Management Project Joint Board:

Merle Jefferson, Lummi Nation  12/6/08  
Date

Stephan Jilk, PUD #1 \_\_\_\_\_  
Date

Bob Kelly, Jr., Nooksack Tribe \_\_\_\_\_  
Date

Pete Kremen, Whatcom County  12/3/08  
Date

Dan Pike, City of Bellingham  12/3/08  
Date

THIS DOCUMENT MAY BE SIGNED IN COUNTERPARTS

December 5, 2008

**Item 100**  
**(Volume 3 – Tab 4, tenth Set)**

Document:

WRIA 1 Priority Ranking of 2009-2011 Washington State Department of Ecology Watershed Implementation Grant Requests

Administrative Summary:

The Washington State Department of Ecology requests that local watersheds prioritize grant applications submitted from their watershed for funding through the 2009-2011 Watershed Implementation Grant. The WRIA 1 Joint Board recommends the following priority order for the WRIA 1 sponsored 2009-2011 Watershed Implementation Grant proposals. The operating and capital budget proposals are prioritized separately.

| Project   | Sponsor        | Priority | Grant Request            |
|---|----------------|----------|--------------------------|
| <b>Operational Budget Projects</b>                |                |          |                          |
| Nooksack River Basin Stream Gaging Network        | Lummi Nation   | 1        | \$317,742                |
| WRIA 1 Instream Flow Negotiation Support          | PUD No. 1      | 2        | \$250,000                |
| South Fork Nooksack Water Budget                  | Nooksack Tribe | 3        | \$110,000                |
| DSS Implementation                                | Whatcom County | 4        | \$153,000                |
| WRIA 1 Water Quality Monitoring                   | Nooksack Tribe | 5        | \$153,000                |
| <b>Capital Budget Projects</b>                    |                |          |                          |
| Bertrand Flow Augmentation                        | Bertrand WID   | 1        | \$631,238 <i>291,070</i> |
| Water Supply Pipeline to Bertrand Creek Watershed | Bertrand WID   | 2        | \$300,000                |
| Pepin Creek Re-Alignment                          | City of Lynden | 3        | \$2,480,000              |

The WRIA 1 Watershed Planning Staff Team (Staff Team) reviewed the proposals and supporting material prior to preparing a Staff Team recommendation. The Staff Team recommendation was distributed to the WRIA 1 Planning Unit for review and comment prior to submitting to the WRIA 1 Joint Board. A Background Document providing additional information on the above projects is attached to this signature page.

WRIA 1 Watershed Management Project Joint Board:

Merle Jefferson, Lummi Nation \_\_\_\_\_

\_\_\_\_\_ Date

Stephan Jilk, PUD #1 \_\_\_\_\_

\_\_\_\_\_ Date

Bob Kelly, Jr., Nooksack Tribe *[Signature]* \_\_\_\_\_

*12/1/08*  
\_\_\_\_\_ Date

Pete Kremen, Whatcom County \_\_\_\_\_

\_\_\_\_\_ Date

Dan Pike, City of Bellingham \_\_\_\_\_

\_\_\_\_\_ Date

THIS DOCUMENT MAY BE SIGNED IN COUNTERPARTS

December 5, 2008

**Item 100**  
**(Volume 3 – Tab 4, tenth Set)**

Document:

WRIA 1 Priority Ranking of 2009-2011 Washington State Department of Ecology Watershed Implementation Grant Requests

Administrative Summary:

The Washington State Department of Ecology requests that local watersheds prioritize grant applications submitted from their watershed for funding through the 2009-2011 Watershed Implementation Grant. The WRIA 1 Joint Board recommends the following priority order for the WRIA 1 sponsored 2009-2011 Watershed Implementation Grant proposals. The operating and capital budget proposals are prioritized separately.

| Project   | Sponsor        | Priority | Grant Request                |
|---|----------------|----------|------------------------------|
| <b>Operational Budget Projects</b>                |                |          |                              |
| Nooksack River Basin Stream Gaging Network        | Lummi Nation   | 1        | \$317,742                    |
| WRIA 1 Instream Flow Negotiation Support          | PUD No. 1      | 2        | \$250,000                    |
| South Fork Nooksack Water Budget                  | Nooksack Tribe | 3        | \$110,000                    |
| DSS Implementation                                | Whatcom County | 4        | \$153,000                    |
| WRIA 1 Water Quality Monitoring                   | Nooksack Tribe | 5        | \$153,000                    |
| <b>Capital Budget Projects</b>                    |                |          |                              |
| Bertrand Flow Augmentation                        | Bertrand WID   | 1        | <del>\$631,238</del> 291,070 |
| Water Supply Pipeline to Bertrand Creek Watershed | Bertrand WID   | 2        | \$300,000                    |
| Pepin Creek Re-Alignment                          | City of Lynden | 3        | \$2,480,000                  |

The WRIA 1 Watershed Planning Staff Team (Staff Team) reviewed the proposals and supporting material prior to preparing a Staff Team recommendation. The Staff Team recommendation was distributed to the WRIA 1 Planning Unit for review and comment prior to submitting to the WRIA 1 Joint Board. A Background Document providing additional information on the above projects is attached to this signature page.

WRIA 1 Watershed Management Project Joint Board:

Merle Jefferson, Lummi Nation \_\_\_\_\_ Date \_\_\_\_\_  
Stephan Jilk, PUD #1 Stephan Jilk \_\_\_\_\_ Date 12-2-08  
Bob Kelly, Jr., Nooksack Tribe \_\_\_\_\_ Date \_\_\_\_\_  
Pete Kremen, Whatcom County \_\_\_\_\_ Date \_\_\_\_\_  
Dan Pike, City of Bellingham \_\_\_\_\_ Date \_\_\_\_\_

THIS DOCUMENT MAY BE SIGNED IN COUNTERPARTS

**WRIA 1 Watershed Management Project  
Background Document for WRIA 1 Joint Board Signature Item 100**

**Washington Department of Ecology 2009-2011 Watershed Implementation Grants (Operating and Capital Budget Requests)**

A summary table of grant requests received from WRIA 1 project sponsors that includes the WRIA 1 Watershed Planning Staff Team's recommendation for funding prioritization is provided below. The Staff Team used the Washington Department of Ecology criteria included in the application packets and considered the extent to which the proposals implement projects identified in the WRIA 1 Watershed Management Plan and/or WRIA 1 Detailed Implementation Plan to develop their recommendation for WRIA 1 Joint Board approval. The final WRIA 1 Joint Board priority ranking will be sent to the Washington State Department of Ecology (Ecology) with the applications by the December 5, 2008 deadline. Ecology will consider the local priorities as part of their funding process.

| Proposal  | Fund        | Sponsor        | Budget                 |                  | Does it advance or implement actions identified in a WRIA 1 Project Document |                                     | WRIA 1 Staff Team Recommendation (Nov 14, 2008) |
|---|-------------|----------------|------------------------|------------------|--|-------------------------------------|---|
|   |             |                | Ecy Req                | Other            | WRIA 1 Watershed Management Plan   | WRIA 1 Detailed Implementation Plan |   |
| Nooksack River Basin Stream Gaging Network        | Operational | Lummi Nation   | \$317,742              |                  | Advances LTMP  | Implements LTMP                     | 1   |
| WRIA 1 Instream Flow Negotiation Support          | Operational | PUD No. 1      | \$250,000              |                  | Implements ISF   | Implements ISF                      | 2   |
| South Fork Nooksack Water Budget                  | Operational | Nooksack Tribe | \$110,000              |                  | Advances ISF   | Advances ISF                        | 3   |
| DSS Implementation                                | Operational | Whatcom County | \$153,000              |                  | Implements technical element   | Implements technical element        | 4   |
| WRIA 1 Water Quality Monitoring                   | Operational | Nooksack Tribe | \$153,000              |                  | Advances LTMP  | Implements-LTMP                     | 5   |
| Bertrand Flow Augmentation                        | Capital     | Bertrand WID   | \$631,238 <sup>1</sup> | \$14,000         | Advances- ISF Pilot Action   | Possibly Implements ISF             | 1   |
| Water Supply Pipeline to Bertrand Creek Watershed | Capital     | Bertrand WID   | \$300,000              | \$11,400 + other | Not identified   | Possibly Implements ISF             | 2   |
| Pepin Creek Re-Alignment                          | Capital     | City of Lynden | \$2,480,000            | \$500,000 (20%)  | Indirectly advances Drainage Based Mgmt                                      | Not identified                      | 3   |

<sup>1</sup> Project sponsors have indicated the budget estimated is under revision with the new estimate for engineering around \$200,000. This would reduce the project budget estimated by approximately \$300,000.

**WRIA 1 Watershed Management Project  
Background Document for WRIA 1 Joint Board Signature Item 100**

**WRIA 1 Project Proposal Descriptions for  
Washington Department of Ecology 2009-2011 Watershed Implementation Grants**

The following descriptions were extracted from the proposals submitted for funding consideration, and are listed according to the WRIA 1 Watershed Planning Staff Team's recommended priority ranking.

**Operating Budget Requests**

**1. Project/Sponsor: Nooksack River Basin Stream Gaging Network/Lummi Nation**

*Project Description:* The Lummi Nation will use all of the awarded grant funds to support a Joint Funding Agreement with the U.S. Geological Survey (USGS) for the USGS to operate and maintain eight existing USGS stream flow measuring stations in the Nooksack River watershed over the July 1, 2009 through June 30, 2011 period and to operate and maintain eleven stream temperature probes over the same period including publishing the results.

*Project Objectives:* The overall objective of this project is to collect fundamental, reliable information on the spatial and temporal distribution of surface water quantity and quality in WRIA 1 so that the limited water resource can be effectively managed and the goals of the WRIA 1 Watershed Management Project ([www.wria1project.wsu.edu](http://www.wria1project.wsu.edu)) can be achieved. These goals include knowledge-based decision-making.

**2. Project/Sponsor: WRIA 1 Instream Flow Negotiation Support/PUD No. 1**

*Project Description:* The WRIA 1 Watershed Management Project (Project) produced a guidance document titled the Instream Flow Selection and Adoption Plan (Instream Flow SAP) to guide specific discussions about instream flows in WRIA 1. The Instream Flow SAP initiated the implementation of two instream flow pilot negotiations, one on the Middle Fork of the Nooksack River and the other on Bertrand Creek, a Nooksack tributary (Instream Flow Pilot Negotiations).

The proposal will continue ongoing implementation of the Instream Flow Pilot Negotiations, one of the highest priority actions listed in the WRIA 1 Instream SAP for the WRIA 1 Watershed. Additionally, where flow is a limiting factor due, in part, to cumulative water withdrawals for out-of-stream use, implementation of the Instream Flow SAP is a recommended action.

*Project Objectives:* The expected result will be negotiated instream flows for settlement of tribal reserved rights and will provide recommendations to Ecology for possible amendment to the existing instream flow rule amendment (Chapter 173-501 WAC) for WRIA 1. With completion of the proposed project most of the highest priority Management Areas (sub-basin) will have negotiated instream flows.

**3. Project/Sponsor: South Fork Nooksack Water Budget/Nooksack Indian Tribe**

*Project Description:* develop water budget for South Fork Nooksack River. Use existing hydrologic data and Utah State University assembled general water budget in combination with data collected on groundwater discharge, precipitation, snow pack and weather conditions to estimate the components of the annual water budget.

*Project Objectives:* Refine South Fork water budget to support interpretation of the factors contributing to deficit flows. Examine the reason(s) for consistent deficit stream flows in the South Fork in relation to the minimum instream flows established under Ecology's IRPP (Ch 173-501 WAC). Results will be used to develop management strategies and projects to increase instream flows, particularly during summer months. Establish instream flow regulations that are representative of current hydrologic conditions and protective of endangered spring Chinook resident in the South Fork Nooksack River. Support ongoing WRIA 1 instream flow negotiations by providing better understanding of processes and factors influencing flow conditions.

**WRIA 1 Watershed Management Project  
Background Document for WRIA 1 Joint Board Signature Item 100**

**4. Project/Sponsor: DSS Implementation**

*Project Description:* A fundamental element of the WRIA 1 Watershed Management Project has been to construct a Decision Support System (DSS) that provides a sound scientific basis to water resource decision-making processes in the basin. The DSS, constructed by Utah State University for the WRIA 1 Watershed Management Project, is a technical tool for decision-makers' use in evaluating the impact of various management actions on water quality, water quantity, instream flow, and fish habitat. There must be some certainty of the quality of the results generated by the DSS in order for the DSS to be applied to on-the-ground land use decisions. This proposal retains a technical specialist to run a wide range of scenarios for the purpose of optimizing the DSS models, based on the scenario results prepare recommendations, if any, for optimizing the DSS as a tool for decision-making purposes, and communicate/explain the results to policy makers and the public. This proposal is not intended to substitute for peer review of the DSS and underlying models.

*Project Objectives:* Knowing the confidence level in the DSS results is imperative to stakeholder groups collaborating on water resource management. Expert opinion on the appropriate use of model results will go a long way in understanding the appropriate use of the DSS. Looking at newly proposed management alternatives will involve fine-tuning the models to optimize results. This proposal will allow us to make those changes and produce results that all the stakeholders can have confidence in. In addition to confidence in the modeling, the outputs from different scenarios will be made available to the public through the new WRIA 1 Watershed Management Project web page.

**5. Project/Sponsor: WRIA 1 Water Quality Monitoring**

*Project Description:* Water quality data will be collected to assess compliance with water quality standards, and causes or contributions to any detected violations. Data proposed for collection was identified in the WRIA 1 Detailed Implementation Plan to be used in watershed assessment and adaptive management.

*Project Objectives:* With a better understanding of water quality violations, management measures to improve degraded water quality can be identified and implemented. Monitoring data will be submitted to Ecology for consideration in the water quality assessment for the 303(d) candidate listing. Project data will be used locally to design and implement projects with the goal of improving water quality. Other land use and planning activities will be informed by water quality conditions identified with data collected as proposed.

**Capital Budget Requests**

**1. Project/Sponsor: Bertrand Flow Augmentation/Bertrand WID**

*Project Description:* The objective of this project is to increase summer instream flows in an important salmonid spawning reach of Bertrand Creek. The project would augment Bertrand Creek low summer flows with 1-2 cfs of groundwater pumped from wells. Water will be pumped from proven aquifer, aerated and transported via a new stream channel to the upper Bertrand Creek to double summer stream flows. The project has been identified by the Bertrand Watershed Improvement District (a formal coalition of agricultural landowners) and the Bertrand Instream Flow Technical Group as an early on the ground action toward resolving long standing conflicts over agriculture water use water use and salmon recovery in the Bertrand Basin. Bertrand Creek is a large, trans-boundary lowland tributary of the Nooksack River supporting spawning populations of ESA listed Puget Sound steelhead as well as fall chinook, coho, chum and sockeye salmon, and resident and sea-run cutthroat trout. Bertrand Creek likely provides habitat for juvenile life stages of ESA listed Nooksack early chinook and Puget Sound Bull trout as well as critical habitat for Nooksack Dace and the Salish sucker, both Canadian Species at Risk.

**WRIA 1 Watershed Management Project  
Background Document for WRIA 1 Joint Board Signature Item 100**

**2. Project/Sponsor: Water Supply Pipeline to Bertrand Creek Watershed/Bertrand WID**

**Project Description:** The Bertrand Watershed Improvement District (WID) was created to assist in increasing and sustaining the beneficial use of the land and water resources within the Bertrand Creek Watershed. The WID prepared a Comprehensive Irrigation District Management Plan (CIDMP). The CIDMP was intended to identify current uses of the watershed and projects that may assist in maintaining them. The two major uses identified in the CIDMP were aquatic habitat and irrigation for agricultural operations. An additional use not identified in the CIDMP is that for the consumptive use by human inhabitants.

The CIDMP also reported that fish species spawning in Bertrand Creek and/or its tributaries since the 1940's include Chinook, coho, chum, sockeye, and steelhead. Juvenile fish trap data collected by the Nooksack Indian Tribe in 2001-03 indicate the presence of juvenile coho, steelhead, and cutthroat trout, as well as non-game species including stickleback and sculpin in the Bertrand Creek watershed.

The land within the Bertrand Creek Watershed is predominantly used for agriculture, as it is a staple of the Whatcom County economy. The number of irrigated acres in the WID is estimated to be 7,418 acres. Crops grown in the watershed range from cash crops such as berries and seed potatoes to crops such as corn and grass which are used as feed on the numerous dairy farms present within the basin.

An additional need for water that exists in Whatcom County is for consumptive use by humans. Specifically, in the vicinity of the Bertrand Creek Watershed, the City of Lynden is in need of additional water rights to fulfill the use of its existing population. Also, within the vicinity of the watershed there are multiple small water purveyors whose sources currently do not meet the quality requirements of the Washington State Department of Health. Chemicals such as nitrate and EDB are being found at levels in exceedence of the State minimum contamination level.

A Phase 1 study is nearing completion that will result in providing needed information to the project sponsors and partners for the selection of the most feasible and cost effective alternate. This funding request will fund Phase 2 of the project which will be the engineering/design work on the chosen alternative. Phase 3 of the project will be the actual construction of the pipeline.

**3. Project/Sponsor: Pepin Creek Re-Alignment/City of Lynden**

**Project Description:** The Pepin Creek (Double Ditch) is a small, year round flowing tributary to Fishtrap Creek, with headwaters in Canada. Most of its 3 mile length in the US is conveyed in a parallel road side ditch system which is subject to routine maintenance dredging, lacks complex instream structure and has little riparian cover.

The objective of the Pepin Creek Re-establishment project is to relocate the lower one (1) mile sections of Double Ditch and Benson Road ditches from their current road side ditch locations to a new 150 foot wide by mile long corridor. Currently, Double Ditch Creek and Benson Road ditch do not provide the necessary flows in their respective channels for good habitat. Combining the systems into the common realigned Pepin Creek will provide enhanced stream flows, use, and habitat. A riparian corridor will be reclaimed with densely planted native vegetation and maintained to the "free to grow stage".

The first task of the project is to acquire the property needed for the project. The property targeted for acquisition within the City is the remaining undeveloped residential zoned property in the area and is the only viable route for the channel. The other parcels are within the City's UGA.

The construction phase will create a new meandering channel within the corridor and have complex instream structure and cover. At this time it is anticipated the low-flow channel would meander in an inner channel with the higher flow channel beyond this.



## Memorandum

To: David Burdick

From: Doug Allen

Date: 2 March 2009

Subject: History of Water Management Planning In the Bertrand Creek Watershed As It Relates To the Jackman Ditch Reroute Capital Fund Project – FY 2010-2011

The WRIA 1 Watershed Plan was adopted in June 2005. That same spring WRIA 1 participants began a process to implement a key component of the Watershed Plan, the Instream Flow Action Plan. A core group of primary water managers began meeting with the goals of achieving a negotiated settlement for Federal Treaty Reserved Rights for the Lummi Nation and Nooksack Tribe. Secondly, we hope to set and achieve instream flows in the Nooksack Basin (amend the Nooksack IF Rule WAC 173-501). Bob Anderson from UW's Indian Law Center was hired as a mediator, and two pilot projects were initiated: 1) Bertrand Creek watershed and 2) Middle Fork of the Nooksack River. Ecology's Director, Jay Manning attended one of the early meetings in Spring 2005 and told the group of negotiating parties that he would consider alternative or innovative ways of water management in those pilot watersheds (outside of the constraints of the Water Code if necessary), if water managers could work with the Tribes and Ecology to establish and achieve instream flows.

In June, 2005 the Bertand IF Working Group began meeting to develop an MOU that would allow the Bertrand WID to work with irrigators to manage irrigation activities in the basin, and identify strategies and projects that would augment flows in Bertrand Creek to satisfy Tribal and Ecology interests. Since that time the negotiations have been broadened to include the entire Nooksack River Watershed, still including Bertrand WID, tribes and Ecology (and others) as primary negotiating parties.

In November, 2005, Jay met with participants from the WRIA 1 (Nooksack) and WRIA 32 (Walla Walla) Planning Units to encourage innovative approaches to water management, and identify implementation actions and pathways to perpetuate the settlements developed by the negotiating parties. Actions recommended at the meeting were to request a proviso from the legislature to allow the WID and other parties to develop an MOU, to establish a system to contract with irrigators for their water use, and to allow the WID drill a test well that could be used for non-consumptive flow augmentation.

In summer 2008, the Bertrand and Middle Fork negotiations were merged into one process, focusing on the entire Nooksack River and its tributaries. Treaty rights are still being negotiated, but good progress has been made in the past year. In the meantime the Bertrand WID is moving forward to implement flow augmentation from the well. The fundamental elements of the negotiations have remained consistent throughout - meet flows and local entities can have more say in managing water. Accordingly, BFO and the NWRO have given the Bertand WID latitude in drilling and testing this well. As long as the tribes are still amenable, and the Bertrand WID can offer reasonable assurance that funding for continued operation of the well is secure, I don't consider water code issues with the irrigators a primary test for eligibility or ranking for this proposed project. Please contact me if you have questions.

Cc:

Tom Culhane

Dave Nazy

Al Josephy

Bob Barwin

Paul Lariviere

Jonathan Kohr

Terra Hegy

