EXHIBIT V – ADDITIONAL INFORMATION

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END OF EXHIBIT V
Tumwater Dam

Headwater - Tailwater Rating Curves (Left Bank)
01. Application Information

* Application Type:
  Standard

* Are you applying for a long-term HPA for agricultural irrigation or stock watering purposes under RCW 77.55.021 (9)(c)?
  No

02. Project Identification

* Project Name (A name for your project that you create. Examples: Smith’s Dock or Seabrook Lane Development)
  Tumwater Fishway Foundation Maintenance

* NonSimplified Project Type(s) (check all that apply):
  Other

* Others:
  Maintenance of existing fishway

03. Applicant

* Business Name (if applicable)
  Public Utility District No. 1 of Chelan County

* First Name
  Edrie

* Last Name
  Risdon

* Address 1
  327 N. Wenatchee Ave

* City
  Wenatchee

* State/Province
  WA

* Zip Code (12345 or 12345-1234)
  98801

* Country
  United States

* Primary Phone No (555-555-5555 Ext.)
  509-661-4115

* Mobile Phone No (555-555-5555)
03. Applicant

509-393-1693

* Email
edrie.risdon@chelanpud.org

04. Applicant Account Type

* Please select one applicant account type
Government – County

05. Authorized Agent or Contact

* Business Name (if applicable)
Chelan County PUD

* First Name
Edrie

* Last Name
Risdon

* Address 1
PO Box 1231

* City
Wenatchee

* State/Province
WA

* Zip Code (12345 or 12345-1234)
98807-1231

* Country
United States

* Primary Phone No (555-5555-5555 Ext.)
509-661-4115

* Mobile Phone No (555-5555-5555)
509-3931693

* Email
permitting@chelanpud.org

06. Property Owner(s)

* Check here if Property Owner is the same as Applicant
Yes

* Business Name (if applicable)
Public Utility District No. 1 of Chelan County

* First Name
Edrie

* Last Name
Risdon

* Address 1
327 N. Wenatchee Ave

* City
<table>
<thead>
<tr>
<th>06. Property Owner(s)</th>
<th>Wenatchee</th>
</tr>
</thead>
<tbody>
<tr>
<td>* State/Province</td>
<td>WA</td>
</tr>
<tr>
<td>* Zip Code (12345 or 12345-1234)</td>
<td>98801</td>
</tr>
<tr>
<td>* Country</td>
<td>United States</td>
</tr>
<tr>
<td>* Primary Phone No (555-555-5555 Ext.)</td>
<td>509-661-4115</td>
</tr>
<tr>
<td>* Mobile Phone No (555-555-5555)</td>
<td>509-393-1693</td>
</tr>
<tr>
<td>* Email</td>
<td><a href="mailto:edrie.risdon@chelanpud.org">edrie.risdon@chelanpud.org</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>07. Project Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Location</td>
</tr>
<tr>
<td>Site Name: Tumwater Dam</td>
</tr>
<tr>
<td>Work Start Date: March 2, 2020 Work End Date: April 1, 2020</td>
</tr>
<tr>
<td>Address: 13855 US Highway 2, Leavenworth, Chelan, WA 98826, United States</td>
</tr>
<tr>
<td>Latitude: 47.616800 Longitude: -120.722705</td>
</tr>
<tr>
<td>Township: 25 N Range: 17 E Section: 33 Quarter Section:</td>
</tr>
<tr>
<td>WRIA: 45 Stream Number: 0030 Stream Name: Wenatchee River (rb)</td>
</tr>
<tr>
<td>Parcel No: 25-17-33-440-000 100 Year Flood: No</td>
</tr>
<tr>
<td>Drive Direction: From Wenatchee, head west on Highway 2 toward Leavenworth. Tumwater Dam is located about 4 miles west of Leavenworth on the left side of the road.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>08. Project Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Will you be operating equipment in water?</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>* Summarize the overall project.</td>
</tr>
<tr>
<td>The objective of the Tumwater Fishway Foundation Maintenance (TFFM) Project is to protect the Tumwater Fishway on the left (northerly) abutment of Tumwater Dam located on the Wenatchee River near Leavenworth, WA. The project will restore the exposed and undermined tremie concrete foundation slab supporting the lower fishway structure and adjacent retaining wall. The tremie concrete slab also provides scour protection for the underlying erodible subgrade; therefore, maintenance is considered essential for preserving the stability of the structures above.</td>
</tr>
<tr>
<td>* Describe how you plan to construct each project element. Include specific construction methods and equipment to be used. Identify where each element will occur in relation to the nearest waterbody. Indicate which activities are within the 100-year flood plain.</td>
</tr>
</tbody>
</table>
08. Project Description
The proposed maintenance project would divert Wenatchee River flows to the right (southerly) side of the spillway during construction. This would provide a zone of relatively calm water in the vicinity of the work area. It is anticipated that temporary flashboards with steel stanchions, gravel-filled super sacks or similar means would be used for this purpose. The temporary diversion would be located on the crest of the Dam and would likely be on the order of 24 inches high.
Following installation of the temporary diversion, a detailed dive inspection would be conducted to further characterize the nature and extent of the voids located below the tremie slab. This inspection would support refinement of the construction approach for work area isolation, subgrade preparation, installation of temporary formwork and grout placement.
Silt curtains, booms, and/or other containment measures would be installed around the work area for isolation. Water quality monitoring would occur upstream and downstream to detect any changes to background conditions. Subgrade preparation is anticipated to include the removal of debris and loose materials from within the voids to allow the grout to bear upon undisturbed subgrade.
The temporary formwork would consist of sandbags, wood and/or metal plate fabrications placed securely along the edges of the tremie slab and subgrade below to contain grout during placement. As an alternative, permanent grout-filled bags placed along the perimeter of the slab could be used for this purpose. A conceptual plan view of the formwork arrangement is shown in the drawings.
The grout would be placed using a variety of methods to control the rate of placement, to prevent the loss of grout to the River, and to allow moderate pressurization to fully fill the voids and develop adequate support beneath the tremie slab. The specific means and methods for grout placement will ultimately be determined by the construction contractor in accordance with the project specifications. It is anticipated to include a combination of flowable grout with accelerators or retarders to control the rate of set, anti-washout admixtures, the use of grout bags, and the use of tremie pipes and vents with line pumps. Once the grout has set, the temporary formwork would be stripped to allow inspection of the grouted area and confirmation that the voids have been filled. Following successful completion of the grouting, the formwork, silt curtains and diversion structures would be removed.
The total void area is estimated to be approximately 360 square feet in plan, indicating that roughly 50 percent of the exposed tremie slab in this area is undermined. The geometry of the void beneath the slab is not well-defined, but an approximate volume of 35 cubic yards is assumed.

* Requested Project Start Date: 
03/02/2020

* Requested Project End Date: 
04/01/2020

09. Waterbodies (other than wetlands): Impacts and Mitigation

* Describe how the project is designed to avoid and minimize adverse impacts to the aquatic environment.
Adverse impacts to the aquatic environment are avoided through the use of silt curtains, booms, or other appropriate containment measures. The forms around the work area will contain the grout, which is designed for this use - the grout will contain anti-washout admixtures, which increases the viscosity of the grout and prevents mixing/washing away if it does contact water.

* Will your project impact a waterbody or the area around a waterbody?
Yes

* Describe how your project will impact a waterbody or the area around a waterbody.
The temporary formworks around the tremie concrete foundation, voids beneath the foundation to be filled with grout, and the flow diverters at the crest of the dam are within the Wenatchee River. The work area will be accessed from the existing fish ladder and the existing viewing platform at the Tumwater fishladder/fishway.

* Describe impact(s) that cannot be avoided through project design and implementation. For each location, please include the following: General location description where the impact(s) will occur (e.g. stream bank, beach front, 2-foot strip from bank, portion of gravel bar, etc.) Provide length, quantities, and/or area of impact.
The impacts will occur within the existing concrete footprint of the Tumwater fishway. The formwork will have a temporary impact, and the grout beneath the foundation is permanent.
### 09. Waterbodies (other than wetlands): Impacts and Mitigation

* Have you prepared a mitigation plan to compensate for the project’s adverse impacts to non-wetland waterbodies?
  - No

* Have you prepared a mitigation plan to compensate for the project’s adverse impacts to non-wetland waterbodies?
  - Since no adverse impacts to fish or fish habitat are anticipated, a mitigation plan was not developed.

* Describe the source and nature of any fill material, amount (in cubic yards) you will use, and how and where it will be placed into the waterbody.
  - The fill material will be the grout mixture placed beneath the concrete foundation. It will be placed using tremie pipes and vents with line pumps. The quantity is approximately 35 cubic yards.

* For all excavating or dredging activities, describe the method for excavating or dredging type and amount of material you will remove, and where the material will be disposed.
  - No excavation or dredging is proposed.

### 10. SEPA Compliance

* Compliance with the State Environmental Policy Act (SEPA).
  - For more information about SEPA, go to "http://www.ecy.wa.gov/programs/sea/sepa/e-review.html"
  - SEPA review is complete. I will upload, mail, or deliver a copy of the SEPA determination letter as part of this application.