

## **WTS 4 Appendix 3**

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*Comments of Cowlitz Tribe & WDFW on WTS 4*



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Subject: Comments on Swift Bypass Synthesis Report

Dear Frank, Diana and the Aquatic Resources Group:

This letter provides comments from the Cowlitz Indian Tribe regarding the recently released Swift Bypass Synthesis Report. Major points concern areas of the report where substantial inconsistencies or questions were identified. Minor points provide suggestions for improving the next iteration of the report.

**Major Points:**

- There is a fundamental problem with the analysis and presentation of water delivery options (Sec 2.4.4.6). Each of the six options is evaluated with respect to lost power generation, coupled with an analysis of lost reservoir elevation/storage for each of the four flow scenarios. However, these two categories of losses are not additive as suggested by the report. For example, if, as suggested on p.30, all water added to the bypass reach is above and beyond that used under current operations, then there will be no loss in power generation, but reservoir levels will be affected as described. Alternatively, if the water for the bypass reach is extracted from the current level of operational flows, then the loss to power production is as described, while reservoir levels remain unchanged. Of course it is possible to have some combination of the two, but the report does not describe this fundamental trade-off and effectively exaggerates system losses in power and storage.
- If all water provided to the reach is above and beyond current operations, then delivery options #2 and #3 would lead to an *increase* in total power production. For example, for options #2 and #3, running an extra 50 cfs through Swift #1 would provide an additional 11,133 mwh/yr from Swift #1 while leaving the power production of Swift #2 unaffected.
- It is not clear how the 90% efficiency for an additional, smaller turbine is calculated under options #5 and #6. If, as the footnote suggests, efficiency is a function of head then the small turbine should be even more efficient because while the head above the

penstock is unchanged, the turbine could be placed lower in elevation, thereby increasing head (i.e., the bypass reach is lower in elevation than the power canal).

- On p.37, the statement that “spawning WUA would not be multiplied, since it is based on one specific habitat type that is comparatively rare in the reach” seems very questionable and statistically/scientifically unsound. If this assumption is to be carried forth into the final WUA analysis, it will need to be thoroughly justified.

#### **Minor Points:**

- As J. Sampson suggested in her comments, the Indicators of Hydrologic Alteration (IHA) should be explained and the data should be interpreted as part of the study. Providing the raw data in a poorly labeled Appendix discourages the reader from paying attention to the data, while many would argue that IHA – properly analyzed - provides a very valuable framework for assessing hydrologic alteration.
- As noted at the 10/4 ARG meeting, Table 2.4-1 is mislabeled as millimeters rather than inches of precipitation.
- A geographically closer (and available) temperature proxy is available for Longview, WA from the Western Regional Climate Center at the following URL:  
<http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?walvie>
- The potential effects of water delivery options #2, #3 and #6 on the stability of the embankments in the power canal should be analyzed in greater detail. For example, the level of current water-level fluctuations could be described as a reference, and solutions to this seemingly tractable problem could be presented.
- One of the key criteria for water delivery options to the bypass reach is reliability. Each of the options should be evaluated according to the risk of flow disruption. For example, option #4 appears the least sensitive to mechanical breakdowns or operational changes.

Thank you for the opportunity to comment on this important study.

Sincerely,

Janne Kaje

Technical advisor to the Cowlitz Tribe

January 11, 2002

Dear Frank and Diana;

SUBJECT: Comments on Version #2 of the Swift Bypass Synthesis Report

Washington Department of Fish and Wildlife (WDFW) provided comments on version one of the Swift Bypass Synthesis Report during the September 20, 2001 Aquatics Resource Group (ARG) meeting and again on October 26, 2001 in a phone conversation directly to the consultant author of the report. We were disappointed when we received the revised report in December 2001, and our information requests were not mentioned, and new, unsubstantiated concerns were identified in the revised report.

The report identified and evaluated several options for providing flow into the bypassed portion of the river channel. Our original comments questioned the effect of bypass flows on reservoir levels in Swift Reservoir as a result of water delivery options that use the Swift One Tailrace as a water source. We also requested quantified information regarding effect on water levels in the power canal to help evaluate those same options.

The analysis of changes in Swift Reservoir level did not consider the influence of seasonal operation on reservoir levels and assumed that all flows in the bypass would impact reservoir levels, regardless of season, water source, or operational status of the project. It is incorrect to assume that water delivery options which use Swift One Tailrace as a water source would impact Swift Reservoir levels under any operating condition that includes generation at Swift One.

The report summarizes the effect on reservoir levels from flow in the Swift Bypass in a manner that precludes an objective evaluation of the water delivery options. During the ARG meeting, and on the phone, WDFW asked that the results of the evaluation of the effect on reservoir levels be reported separately for each delivery option because the water delivery options have different effects on reservoir levels. The 9/20/01 meeting notes reflect an understanding from PacifiCorp that not all options for providing bypass flows that were evaluated in the report have the same effect on reservoir levels. The second version of the report did not correct or mention this problem.

The first version of the report also identified a concern for bank stability in the Power Canal due to changing water levels in the canal. That concern would only apply to water delivery options that use the Power Canal as a water source. For those options, the report predicts that the water level in the canal would drop when Swift One is not operating and rise when Swift One goes back on-line. In our comments, WDFW asked for quantitative information reporting the effect on water levels in the power canal that would result from those water delivery options. Potential changes in water level within the power canal would be controlled by the project's seasonal and daily operation schedule.

Quantification of the effect on water level in the canal would require an evaluation of how long, how often, and when that Swift One does not operate, compared with the calculated quantities necessary to continue meeting in-stream flow needs and the volume of the Power Canal. WDFW asked for this information to quantify the extent of this bank stability concern and eventually to identify and evaluate the impact of potential operational changes that would preclude water level fluctuations in the power canal. The revised report did not respond to that information request. Instead we learned the utility collects seepage data and piezometer data but did not to provide that information to help substantiate their concern.

In addition to concerns for canal bank stability, a new concern for canal bottom stability was included in the second revised report. The report suggests that a “vacuum effect” would be created when using a siphon to move water out of the canal. The report went on to predict canal bottom and embankment failure due to this “vacuum effect” because the interior lining of the canal is sand, silt, and gravel. Please provide additional information, including an engineering design of the siphon with projected velocity profiles in the siphon vicinity to facilitate an unbiased evaluation of this concern for canal stability from a “vacuum effect”.

We respectfully request that this and other reports be revised, as necessary, to specifically respond to requests for clarification, and to exclude, or substantiate any subjective concerns, even if they are identified as “operational information”. These measures will help achieve the first Steering Committee Consensus Goal: To develop relevant, reliable and scientifically credible information that can provide the basis for sound and effective relicensing decisions.”

Sincerely

Curt Leigh  
Washington Department of Fish and Wildlife