Chehalis River Basin Flood Authority
Special Teleconference Meeting*
January 19, 2012 10:30 a.m.

*Note: the regularly scheduled special and business meetings for January 19th were postponed due to very severe weather conditions; a shortened telephone conference on limited subjects with no action to be taken was scheduled instead, and the public invited to participate.

Board Members logged in: Jim Cook, City of Aberdeen; Ron Averill, Lewis County; Vickie Raines, City of Montesano; Edna Fund, City of Centralia; Julie Balmelli-Powe, City of Chehalis; Terry Willis, Grays Harbor County; Karen Valenzuela, Thurston County; Mark Swartout, Town of Bucoda

Others logged in: Lara Fowler; John Donahue; Larry Karpack; Paul Schlenger; Greg Hueckel; Bob Montgomery; David Plotz; Kimberley Pinchiera; Glenn Carter; Bart Gernhart; Chris Hempleman; Bianca Fortis; Travis Nelson; Jim Kramer; Hal Beecher; Pat Anderson

1. Call to order
Ms. Fowler welcomed everyone and stated that there is a tentative meeting scheduled for January 26 at the Timberland Library in Olympia from 8:30 to 12:30 to make up for today's modified meeting.

2. Introductions
Everyone who was logged in introduced themselves.

3. Fisheries Impact Study – Anchor QEA
Mr. Paul Schlenger, Anchor QEA, stated he would briefly go over the scope and the review process regarding the fisheries impact study.

He stated the scope of the fisheries study was to determine the potential impacts on the main stem of the Chehalis for spring Chinook, winter steelhead and coho. Anchor originally had a nine-month window to complete the scope; the timeframe was extended to enable Anchor to get more data during the low flow period. Mr. Schlenger emphasized the importance of understanding that the decisions about new data to collect were based on the expectation of having only a nine-month window for completing the entire analysis.

Mr. Schlenger recapped the process to date. He stated the review of the study began with the released draft report to the Flood Authority on November 17, 2011. Presentations of the draft report were made to the Quinault Indian Nation/Northwest Indian Fish Commission and the Confederated Tribes of the Chehalis. Anchor also convened a question and answer session and a data transfer workshop with round table discussions on December 12, 2011. Comments were due on January 2 but that deadline was extended to January 9, 2012. To date seven organizations have commented: WDFW, DOE, DOT, Confederated Tribes of the Chehalis Reservation, City of Chehalis, the Wild Game Fish Conservancy International, and Lewis County PUD. Anchor compiled their comments on a spreadsheet. He noted that there was one error the table in which the PUD was listed as Flood Authority.

Ms. Fowler stated the Quinault Indian Nation also submitted comments; however, these comments are not yet incorporated into the spreadsheet as the comments were received just prior to the meeting

materials being distributed. All the comments were circulated to the Flood Authority distribution list along with the meeting materials.

Commissioner Averill stated he did not understand the Quinault's letter saying they had not had a chance to participate. Commissioner Averill attended the workshops at which the Quinault was represented.

Commissioner Willis asked what will be done with the comments.

Mr. Schlenger stated the comments will be incorporated into the study. They are being reviewed now and there will be revisions to the study based on input. In answer to another question, he stated he did not allow enough time in the budget to answer comments and that is being discussed with Ms. Fowler. There is no resolution yet; Anchor is out of budget and additional funding would be helpful.

Mr. Schlenger then provided a brief overview of the comments on the study in general, then Mr. Montgomery reported on comments received on the appendices.

He noted one theme in the comments addressed the need for a more detailed study necessary before a dam could be permitted; such studies would include more species, more data collection and a larger analysis area. Anchor will provide comments on those issues.

Anchor included a fish passage survival rate in its findings; Mr. Schlenger noted that there were comments stating the rate was too high. Anchor's study had two scenarios: one with fish passage with the target rate for survival, and another with no fish passage. Those two ranges provide the best and worst from the fish population. The 3%, 10% and 30% rates fall in between. Anchor will clarify why it used target rates and proceed from there.

Another set of comments was made that impacts of the dam were underestimated. Anchor was given a percentage of spawning, which was 91%, and that was the starting point of impacts on upstream spawning. Some refinement to the model is necessary, especially regarding Steelhead. Anchor will be using data collected in summer 2011 to characterize habitat conditions in the upper watershed and estimate future changes.

Anchor is still refining the Shiraz model and examining how fish might redistribute if there is an impediment.

Mr. Montgomery, Anchor QEA, gave of a summary of the comments received on the appendices.

Appendix A: Frequent use of hydrology data from the 2007 flood resulted in peak flow uncertainty. WEST Consultants prepared a memo and the conclusion of that memo was that the peak flow used by USGS was not unreasonably high. Anchor did use the 2007 USGS study for peak flow; it did not model the 2007 event all the way through the river system. FEMA did that but it was not presented because the hydrograph at the Doty gate overestimates the volume of water. Perhaps there should have been a disclaimer about the uncertainty of the amount of flow in the upper river during that event.

Regarding operations, in-stream flow and temperature, Anchor used hydro-power operations. They did not optimize or determine how much flow should be released as to achieve the most benefit to fish.

That was premature because the process is very involved and they could not get to the point of suggesting in-stream flow that would be acceptable. That comment will be addressed.

Appendix B: Geomorphology and sediment transport was grouped into methodology and impact. For methodology: how did we select reaches? How did we do large woody debris selection? Those are based on grouping characteristics.

There was a comment on the impacts to the reach which asked to elaborate on sediment impact and fish for dam operations as this has the greatest geomorphology impact. It was asked that there is linkage between those two items.

Appendix C: There was a major concern for water quality regarding reservoir models and the downstream model temperature prediction. Regarding water quality the State found some input error. For the temperature model, the temperature was over-predicted in the Chehalis River. Anchor received additional data from DOE that covers the calibration period that was not available before. Anchor over-estimated the temperature that carries downstream and is re-adjusting the water quality model.

There is no data for tributary inflows. Anchor used an average of what has occurred in the past. 2010 data indicates a cool year and Anchor will compare the temperature in 2010 to the historic data which will bring the temperature down by several degrees.

There was a comment about not having a complete water quality model in the reservoir. Anchor did not intend to do that, but did look at a range of sediment –oxygen demand levels. That will be looked at again.

There was a comment that the groundwater inflows are not represented. Anchor thinks the Chehalis River has good representation of the temperatures. There is not a lot of data and that could be a limitation in the model.

Mr. Swartout asked if the amount of sediment and woody debris due to landslides would reduce the storage by the amount of debris.

Ms. Hempleman stated there is a difference in elevations but it did not mention impacts. Mr. Montgomery stated he has not finished the modeling yet.

Mr. Swartout asked if there are assumptions on sediment-oxygen demand for large woody debris in a reservoir.

Mr. Montgomery stated he will revise the analysis to include sediment-oxygen demand. He asked that Mr. Swartout formally submit his comments and questions.

Commissioner Willis stated this is a very large study and she asked if there was enough time given to review and submit comments and if there were complaints about not having enough time to respond.

Mr. Schlenger stated that he had not heard a lot of concern expressed. Ms. Hempleman stated there was enough time; it was adequate and she appreciated Anchor working with DOE to give them another week.

Mr. Nelson stated the time was adequate for WDFW.

Mr. Schlenger continued with Appendix D – fish habitat modeling
There was a comment that the scope of the study was too limited, especially the limited number of species evaluated. The process used to identify the number of species at the time of scoping was that Anchor could not evaluate all the species that could be impacted. Through discussions with the Flood Authority and another biologist in the basin, three species were selected for inclusion in the analysis. The species were identified before the scope was completed.

Another comment was that more stake holder consultation would have been appreciated during the development of the study design. As far as who did participate, we got under scope late in the summer and we needed to hit the low flow period; time was of the essence. We worked with WDFW and DOE and thought of those agencies as the natural agencies to work with – they oversee inflow studies in the State. They are the guiding founders. Their participation was input to the study plan and they participated in site selection. The Chehalis Tribe was aware of the steps taken but we did not formally consult with them for input; we understand they would have liked to have participated more.

Related to that, Mr. Schlenger stated the Tribe noted concern that they wished there had been more emphasis on high velocity refuge during high flows. That work was done by a sub-consultant and Mr. Montgomery stated that Anchor will provide more information and documentation.

Appendix E: Fish habitat modeling in the upper watershed.
There was only one visit and comments were minor.

Appendix F: Fish population
There were many comments on this appendix. There were concerns about fish passage survival rate and the overall lack of impact that the model produced. Anchor will address those.

Mr. Schlenger noted that fish spawning locations were incorrect or inappropriately addressed. Anchor used the data from WDFW and assigned their spawner observations to various reaches. Anchor will work with them to check the percentages in each reach and also provide inputs as appropriate if there was a mistake. Some comments were suggesting that habitat capacity be revised to say that if fish are spawning in area there is no habitat in that reach. Anchor will explore that more; there is no further update on that yet.

The model input of existing habitat availability in the upper watershed is acknowledged as a placeholder. There have been estimates made from elsewhere in the lower reaches. Anchor recognized there was an information gap and we need to get that information; we did get the data for the upper watershed at the end of last summer and the results are available and will be incorporated into the Shiraz model.

Also, the model input over-emphasized the problem caused by high temperatures. The way the models were set up for water temperatures is that high water temperatures are a limited factor on adult salmon migrating upstream. That was actually one of the parts of the model used that was consistent with others and also used in peer review; there has been a relationship between maximum temperatures and the number of spawners that move into the next life stage. Anchor will look at changes to the approach

and maybe use an average temperature rather than a maximum. Mr. Schlenger is concerned that the change to the approach could make it less defensible because it would move us away from a peer reviewed relationship applied elsewhere and entail a relationship where there is not sufficient data.

Mr. Hal Beecher stated he did not see the problem with peer review but with blocking it out in such large blocks of time and applying a temperature over a large block of time. He thought that if averaging was used or smaller increments of time that it would increase the data's validity.

Mr. Schlenger stated that was helpful follow-up. He has taken maximum temperatures over the spawning period and that is consistent with the approach. He can break it out by smaller portions of spawning periods and use higher temperatures but smaller increments. He will proceed with that and will be in touch with Mr. Beecher.

That completed the summary of the comments and Mr. Schlenger described the next steps.

He stated work is under way to address comments and document responses which will be time consuming. Anchor is discussing with the Flood Authority ways to explore a budget increase to help with that. Pending feedback from today's discussion Mr. Schlenger hopes to have follow-up discussions and settle on completion of the fish study. He asked for questions.

Commissioner Willis asked what the timeframe is for the next product. Mr. Schlenger stated he has not determined an estimate as to when to deliver the final report and appendices. One thing he is encountering is that the fish population model needs to be revised and revisions need to be made to contributing models, such as water quality. Sequential re-analysis will take 2 weeks for water quality revisions to be made. The Shiraz model will take it from there. At this point a target date has not been identified; he is looking at early March for a general time frame.

Commissioner Willis stated she is concerned about the questions Anchor did address and changes made to the model/report and which ones were not addressed. They need to be addressed and identified whether changes are made or not. With lack of government support, how do we take the fisheries study and put something into it that makes sense should we start that process again. We don't want to go too far with it if it has to be mothballed and yet at some point we can still pick it up again.

Mr. Schlenger stated he is not the right person to reply to that. As to which comments are addressed or not addressed, we are planning to make it clear whether the comment led to changes in the study; in terms of where to take the study or end it we will take it to the final report for our scope of work and then it is a broader Flood Authority question.

Ms. Fowler stated at the last meeting Mr. Swartout asked the same question: now what? There will be follow-up with Jim Kramer and there will be a broader discussion with the Flood Authority, possibly in March. Commissioner Willis stated we want to prepare ourselves for whether this goes on or needs to be put down to be picked up later.

Ms. Fowler stated the follow-up discussion on the budget will be next week.

Commissioner Willis stated she and Mr. Karpack had discussed the Satsop River and she hoped to include that.

Mr. Montgomery stated Mr. Karpack and WEST has done overlapping work and it links to his work.

Mr. Karpack stated he has not done a review of any of the fish study. The work done under his contract references work being done by WEST for the Corps and it includes hydrology and development of the hydrology. There is overlap but there is not yet coordination between the two.

4. H & H Modeling - WSE

Mr. Karpack gave an overview of his work. December 31, 2011 was the target date for completion of the hydraulic model from Pe Ell to Aberdeen. Although that was the intended date, in the development of work plan, it was recognized that the Corps was going to work on pieces of that model and it did not make sense to build it twice. WSE's work relies on WEST completing their work for the Corps and that was to be done at the end of December, 2011. That work has been delayed somewhat; there have been some difficulties in the survey data collection and the Corps has a significant review process for the hydrology which is necessary for the hydraulic work WEST is doing. The Corps has asked for their scoping to include WEST doing the calibrating to high and low flows. There is a struggle to develop one model to cover both. It is not yet completed; WEST has a model structure built but is still in the calibration process. They hope to finish up in the very near future – possibly next week.

Mr. Karpack continued to say there was a two-week time period for his review of that model and specifically relevant to the study WSE is doing. That would have been the lower reach model that WEST is building for the Corps' technical review and response. Starting now we would apply the models to upstream with a target date of February 22, 2012 with preliminary results from those analyses. For the broad overview we are two weeks behind the schedule but we are hoping we can recapture that time in moving forward with the analysis.

There were two documents circulated with the meeting materials and one was re-circulated with an expanded scope. Beginning with the Executive Committee this month was the issue of how to deal with the scope and potential additions and modifications to meet the goal of the contract. Mr. Karpack met with the Project Committee to discuss these things and a change came out of that meeting. There are two issues: the hydrologic analysis that WEST has completed, and what to do with it in regard to tributary modeling.

The first issue: hydrologic analysis has to do with high level technical issues and the differences with frequencies analysis and hydrology frequencies used by FEMA. There is more detail in the memo. The question is: has WEST done analysis that is currently in review and are they fact-checking. The intent was to use that hydrology. That hydrology uses expected probability adjustments that results in slightly higher flows – the 100 year flow is slightly higher. It is not used by FEMA in flood insurance studies. It is usually within a 10% difference in flows. Do we recreate a second set of hydrology with unadjusted flows, which will cost about $7,000? The Project Committee does not think the differences are significant enough to warrant that cost and it will not lead to a FEMA flood insurance study anyway.

The second document is a placeholder task for additional evaluations on tributaries. We have identified three primary locations:

1) Near Bucoda there is a bridge constriction and a levee that backs up water. A scope for additional data collection of the Skookumchuck would allow us to investigate that issue.

2) There is a model of the Newaukum River that extends further upstream than the model integrated into the Twin Cities model. That model goes to river mile 4 but we have a model built for the Corps up to river mile 10. Mr. Karpack suggested integrating that difference into the Twin Cities model for flooding representation.

3) The Satsop River. In 2001 a study was done including survey data collection and in conversation with Commissioner Willis there is a future project that would benefit from hydraulic modeling. The river channel has been very active in the last 10 years and there has been significant sediment. We expect hydraulic modeling between Hwy 12 and the Chehalis River for the purpose of collecting survey data and cross sections and integrate the new data into the current model. That will indicate how much the reach has changed since the last model and how worthwhile it might be to do an updated Satsop model.

The memo is broken into 5 tasks because the survey is a separate task. Ultimately the total budget is about $45,000 for those tasks; the placeholder is for $60,000 for tributary modeling; funding for this work is already included in the WSE contract, but this would more fully define these workplan elements.

Ms. Fowler quickly summarized the discussion: Mr. Karpack provided an update on the WEST/Corps model; he discussed the hydrologic modeling and correction factor, and the preliminary recommendation by the Project Committee not to pursue extra work; and finally, he discussed how to do additional survey work on the Skookumchuck, Newaukum and Satsop as defined work tasks in what has otherwise been a placeholder for work in the tributaries in the H&H modeling budget.

Ms. Fowler asked if there were questions.

Commissioner Willis stated the cover sheet mentions the Black River as one of the tributaries. She wanted to point out that during the Project Committee meeting they did not come up with anything on the Black that they could identify – maybe the appropriate people were not in the room.

Mr. Karpack stated he had spoken with Mr. Swartout. The reach of the Black is integrated into the flood plain model of the Chehalis River at Hwy 12. It does not have the same dynamic nature as the Satsop. It is part of the model but there has not been a new task identified on the Black. Commissioner Willis stated the Committee did not ignore the process on the Black. It did identify what a project would look like on the Satsop: removal of riprap that was put in when the freeway was built which is on property owned by WDFW. This project could open up the meander zone of the river itself; that's why we want to finish the modeling so we can get funding. Grays Harbor County could not come up with the matching funds before.

Commissioner Averill stated there are two budget issues to discuss next week. The Flood Authority budgeted $900,000 for the fish study and we had to reallocate another $275,000 in the current budget of $1.3 million and then added another $250,000 for enhancement. That is a lot of money going to Anchor for studies. We have allocated our budget out for the biennium and we have spent or allocated all but $115,000. There is not much more money we can currently use if we work around how to continue certain projects. He asked if Ms. Fowler can have a talk with the governor's office about the possibility of using the Twin Cities project funding. He asked if there was a supplemental budget put in by the governor's office for the next half of the biennium. He has not seen that this time although it was done in the past.

Ms. Fowler stated she would follow up on both questions. Next week we will go through the OFM budget assumptions to see where there are options and/or limitations.

Mr. Swartout stated once Mr. Karpack finishes the model from Pe Ell to Aberdeen it will be critical for the alternative analysis for projects up and down the river. He asked if that would have to be done in another budget cycle.

Mr. Karpack stated yes, this will be a comprehensive model to include tributaries in the Twin Cities model, the Wynoochee and down to Aberdeen. WSE's contract includes looking at flood relief alternatives for upstream storage. The Corps is looking at the Twin Cities project and it might require some dialogue regarding impacts of flood relief at Bucoda. If this has a downstream impact, this model will address that. Also, regarding the Mellen Street and Sickman Ford constrictions, this model will be the tool for evaluating impacts or benefits of those projects.

Mr. Swartout asked if the alternatives in the model are not included in the contract. Mr. Karpack stated that the WSE budget includes evaluation of alternatives to be identified. This could include an evaluation of upstream facility storage and those impacts downstream; WEST is under contract to evaluate the Twin Cities project. Other alternatives need to be selected for modeling.

Mr. Swartout stated a decision needs to be made on what other projects to use Mr. Karpack's model for evaluation. Commissioner Willis stated there was trouble nailing the Corps down while we put in requests that they do some of them. The Corps modeling was supposed to do parts of the Satsop but they elected to do from the Wynoochee to the dam and took the Satsop off. That was part of the conversation - we need placeholders for other tributaries because we don't know what the Corps is doing.

Commissioner Averill stated when we get this data completed, it will be valuable for future projects not yet identified or funded. In addition, Mr. Karpack is using some older LiDAR data and we are getting updated information and once that is available it can be integrated into his data rather easily without a lot of cost.

Mr. Karpack stated that was correct. Regarding the Skookumchuck, Thurston County has collected new LiDAR data but it is not yet available. If it were available today we would integrate it but for now we have to use 2002 LiDAR. In the future, it will not be difficult to swap out the LiDAR – it is not cost-free but it will not be exorbitant.

Ms. Fowler asked if there were broader questions from today or questions about what to cover next week.

Mr. Karpack stated he understood no decisions could be made today but stated survey data collection will take time once the decision is made. He asked if there is any way to get an okay to send out surveyors for the Satsop and the area around Bucoda.

Commissioner Willis stated she is looking forward to the project on the Satsop but wasn't sure the Flood Authority could make that kind of commitment today knowing there is not a funding situation set up for

it. While she supports the project, the Flood Authority is not in a position to have Mr. Karpack go forward today as the special phone call was set up as no action to be taken.

Commissioner Averill stated there will probably be an answer to that next Thursday. Mr. Karpack stated that is enough. He can have sub consultants be prepared to go if we are able to go forward.

Public comments
There were none.

Ms. Fowler stated the meeting next week would be in the morning for about 4 hours. She will send out information and get confirmations regarding a quorum.

The meeting adjourned at 12:25.