

**CHEHALIS BASIN PARTNERSHIP**  
**Chehalis Tribe "Lucky Eagle" Casino**  
**Rochester, Washington**  
**June 24, 2011**  
**9:30 a.m.**  
**Meeting Summary**

**MEMBERS, ALTERNATES & GUESTS PRESENT**

Bonnie Canaday, Chair, City of Centralia  
 Glen Connelly, Confederated Tribes of the Chehalis Reservation  
 Lee Napier, Grays Harbor County  
 Kahle Jennings, City of Centralia  
 Miranda Plumb, US Fish & Wildlife Service (USFWS)  
 Julie Balmelli-Powe, Lewis County Farm Bureau  
 Janel Spaulding, Chehalis Basin Partnership  
 Jim Hill, Citizen, Lewis County  
 Lyle Hojem, Citizen, Lewis County  
 Mark Swartout, Thurston County  
 Bob Amrine, Lewis County Conservation District  
 Herta Fairbanks, City of Chehalis  
 Patrick Wiltzius, City of Chehalis  
 Bruce Treichler, Northwest Steelhead & Salmon Conservation Society  
 Mark White, Confederated Tribes of the Chehalis Basin  
 Pam Peiper, Staff, Office of Representative Herrera Beutler  
 Lara Fowler, Gordon, Thomas, Honeywell

Chuck Turley, Department of Natural Resources (DNR)  
 Karen Valenzuela, Thurston County  
 Terry Willis, Grays Harbor County  
 Christine Hempleman, Department of Ecology (DOE)  
 Bill Schulte, Lewis County  
 Chris Stearns, Thurston Public Utilities District  
 LaJane Schopfer, Mason County  
 Valerie Gow, Puget Sound Meeting Services  
 Don Loft, The Evergreen State College  
 John Penberth, Citizen, Pe El  
  
 John Lucas, Lewis County Farm Bureau  
 Ran Figlar-Barnes, Skokomish Tribe  
 Bob Burkle, Washington Department of Fish & Wildlife (WDFW)  
 Jim Tyner, Onalaska School District  
 Chanele Holbrook-Shaw, Citizen, Thurston County  
  
 Dr. Alan Hamlet, UW Climate Impacts Group

**SUMMARY OF ACTION ITEMS:**

<b>Approval of Meeting Summary</b>	Approved April 22, 2011 minutes by consensus Deferred May 20, 2011 after additional review by several members regarding specific discussions.
<b>Roundtable Comments</b>	Staff to forward electronic copies of the letters regarding CBP membership to Bill Schulte.
<b>CBP Organizational Structure Discussion-Life after Phase 4, Fundraising Options</b>	Janel Spaulding to provide progress report and a spreadsheet of the legislative appropriation at the July meeting. Kahle Jennings offered to assist in preparing a budget document.
<b>General Investigation Study Update</b>	Lee Napier offered to follow up with additional information concerning the amount of actual unobligated funds of either \$400,000 or \$40,000. An ad hoc committee formed comprised of Karen Valenzuela, Terry Willis, Glen Connelly, Jim Hill, and Bill Schulte to address a series of questions posed by Mr. Schulte to enable the Chair to authorize moving forward on the GI Study.
<b>Next Meeting</b>	Members agreed to reschedule the July meeting to July 29.

## **GENERAL PARTNERSHIP BUSINESS**

### **Welcome, Introductions, and Roundtable Comments**

Bonnie Canaday called the June 24, 2011, meeting of the Chehalis Basin Partnership (CBP) to order at 9:35 a.m. A quorum was attained. Everyone present provided self-introductions.

Chair Canaday referred to issues that occurred at the last meeting. She received letters from the three entities that everyone appeared to believe had withdrawn from the Partnership. Those entities represent Grays Harbor County, Thurston County, and the Confederated Tribes of the Chehalis Reservation. All three entities are current members with full voting rights and have not withdrawn membership from the Partnership.

Bill Schulte asked to receive a copy of the three letters electronically.

### **Discuss April 22, 2011 & May 20, 2011 Meeting Summaries**

The April 22, 2011 minutes were approved as presented by consensus.

Chair Canaday pulled the May 20, 2011 minutes because several members indicated they misunderstood the discussion. Karen Valenzuela asked for a correction to the minutes to correct the date of the meeting to reflect May 20, 2011.

## **SPECIAL PROJECTS AND PRESENTATIONS**

### **CBP Organizational Structure Discussion-Life After Phase 4, Fundraising Options**

Ms. Spaulding distributed several handouts. At the May meeting, the Partnership elected not to pursue establishing a separate fundraising arm at this time and focus efforts on other fundraising options. Ms. Spaulding reviewed current funding sources and current operating costs. Two grants are expiring on June 30, 2011. The two grants combined total approximately \$200,000. The Chehalis Tribe donated another \$15,000. She described the total projected operational expenses in 2011 of \$137,500. After June 30, Ms. Napier's time will no longer be funded as well as for Puget Sound Meeting Services for meeting minutes, facility rental, *Drops of Water* publication, and education and outreach materials. Based on the projected legislative appropriation, remaining funds, and the Tribe's donation, it is projected there will be sufficient funds for the Watershed Coordinator position through 2012.

Kahle Jennings asked about specific tasks associated with the grants. Ms. Spaulding advised that the grants totaling \$200,000 includes three tasks of administration support at \$61,311.42, outreach at \$60,000, and project implementation at \$78,688.58.

Discussion followed on some confusion between the grants and the annual budget forecast and current balance. Ms. Spaulding explained that from the original \$200,000, approximately \$120,000 is the current balance.

Terry Willis asked how the current balance of \$120,000 is allocated. Ms. Spaulding said the current balance through March 2011, includes administrative support at \$38,732.70, outreach at \$14,429.52, and project implementation at \$67,383.88 for total of \$120,546.10 remaining from the grant.

Mr. Schulte asked whether the entire balance of \$120,000 could be applied to fund basic operations of the Partnership. Ms. Spaulding said some of the funds under Task 3 (project implementation) includes grant writing to obtain additional funding. That could be considered basic operations. Mr. Schulte suggested deducting the amount not associated with basic operations to reflect the true balance for Partnership operations. He questioned why meeting minutes service was eliminated if the balance actually reflects \$135,000 and cited the need to continue the service because of the contentious nature of many of the meetings and the importance of having professional sets of minutes. Ms. Spaulding said the

minutes were funded from the Phase 4 grant from the Department of Ecology (DOE), which would need to be discussed by the Partnership. It would also require an amendment to the scope of work because the scope does not include minutes. Mr. Schulte asked whether there is administration support under the grant. Ms. Spaulding advised that administrative support is included. Mr. Schulte asked whether Ms. Spaulding will prepare minutes. Ms. Spaulding advised that the Partnership will need to discuss the issue. Meetings will continue to be recorded.

Ms. Spaulding referred to a spreadsheet of potential private foundation donors. Some of the donors require an invitation to apply for funding and most of them require a letter of intent. Many of the foundations fund smaller projects. She asked members to notify her of any other organizations to include and encouraged members to consider the list as a one option to secure funding. Another option is seeking funding support from members.

Ms. Spaulding referred to the current membership list and asked members to provide any updated information. Not counting state agencies, 24 members could potentially donate to the Partnership.

Ms. Spaulding reported a majority of the foundations donate only for projects rather than administrative support.

Another suggestion discussed during the Steering Technical Committee (STC) meeting is using existing standing committees for funding assistance. She suggested each committee could begin working on projects, such as the STC, which is working on water quantity related projects and could assist in preparing grant applications. The Water Quality Committee could pursue grant applications for water quality or assist the Tribe in continued water quality monitoring. The Habitat Work Group currently reviews Salmon Recovery Funding Board (SRFB) proposals. There could be an opportunity for subcommittees to assist in fundraising efforts.

Ms. Spaulding asked members for feedback. Mark Swartout agreed that utilizing subcommittees is an effective use of time and that any requests would be reviewed by the Partnership. In most cases, there is a percentage of grant funds allocated to administrative tasks to oversee administration of contracts.

Mr. Jennings asked members who are involved with the Legislature to keep the Partnership informed of any potential opportunities.

Glen Connelly suggested establishing a fundraising committee comprised of members who have the experience and knowledge in applying for grants. Mr. Schulte agreed committees are important and suggested establishing a budget committee to develop approved practices for budgeting and tracking of expenditures. Mr. Jennings, Mr. Schulte, and Lyle Hojem volunteered to serve on the budget committee. Mark White questioned the purpose of a budget committee. Mr. Jennings replied that the purpose is providing backup for Ms. Spaulding in terms of tracking the budget and providing periodic reports.

Chanele Holbrook-Shaw opposed adding any additional work to the Watershed Coordinator's position. Adding another committee may have too much of an impact.

Chair Canaday explained the need for a budget committee to help track how funds are expended as well as presenting budget information to members. Mr. Jennings said it's incumbent upon members to be engaged, involved, and understand the budget as well as presenting the budget so that it's not entirely the Watershed Coordinator's responsibility.

Mr. White asked for a description of the duties and responsibilities of the budget committee before he could support the proposal. Mr. Jennings offered to develop a description of the budget committee by the next meeting.

Members discussed a description for the fundraising committee.

Mr. Swartout suggested all committees should include fundraising as part of the responsibilities of the committee.

Lee Napier reviewed how Grays Harbor County processes billings for the Partnership. Mr. Schulte commented that other boards he's affiliated with approve all expense vouchers. Mr. White pointed out that the Partnership is not a board but an advisory group and that the Partnership is wasting time on administrative matters. Ms. Napier said she's repeatedly heard frustrations from members on how the budget is reported. There have been several attempts to provide the information but the format has not satisfied all members. Mr. Jennings offered to assist in preparing budget information. Ms. Willis suggested providing a copy of the spreadsheet that's a component of the progress report to members. Ms. Napier offered to provide a copy of the progress report at the next month's meeting to determine if it meets the Partnership's needs. At that point, the Partnership can determine if a separate budget committee is necessary. Mr. Jennings noted that the progress report is focused on tasks and part of the issue is the difference in the budget for tasks than for an organization. Mr. Schulte described the type of budget document he would like the Partnership to receive.

Chris Stearns commented on the importance of meeting budget deadlines with the Governor and the Legislature in seeking funding support.

John Penberth commented on the importance of sending letters to the Legislature seeking funding support. Entities do not have the funds to contribute to the Partnership. He suggested that if the basin is important to the state, it should be funded; otherwise, the Partnership should disband rather than fragmenting into different groups.

Ms. Spaulding affirmed that at the July meeting, she will present the progress report and the spreadsheet for the legislative appropriations.

#### **General Investigation Study Update**

Ms. Napier provided an update on the General Investigation (GI) Study. She referred to a document previously emailed to members. Grays Harbor County is the local sponsor. The request is for advice on the GI Study and information on the next step of the project involving the model and the scope of work. Modeling is a fundamental piece of work for identifying project sites. The GI Study leads to projects. The study produces a plan and includes candidate project sites. To reach that point, the process needs to include an application of a baseline. The hydraulic and hydrologic (H&H) model is of the lower basin and intended to provide a reasonable level of information necessary for developing 10% to 30% designs for potential candidate site work. The process typically includes a rating curve, flow to depth relationship, and average velocity profile for a wide range of flows. For complex and risky projects, additional surveying and modeling will likely be necessary to validate the proposal. Currently, the federal sponsor, which is the U.S. Army Corps of Engineers, has unobligated funds available to pursue the scope of work.

Under the state appropriation for catastrophic flood relief, funding is also available to work on a lower basin model. It has been conveyed that the state money could augment any data gaps that might result in the Corps H&H scope of work.

The next step of the GI process includes developing baseline hydraulic and hydrologic conditions. The Corps developed a statement of work that models the lower basin. The conditions are modeled from Porter to Montesano. Presently, the basin lacks a model that can predict the depth of full downstream effects of ecosystem restoration or flood damage reduction projects. That gap continues the uncertainty about the benefits and the impacts of major projects.

Ms. Napier asked members for input on whether the project should be pursued.

Mr. Schulte asked about the source of funding. Ms. Napier said the funding is from an appropriation to the Army Corps of Engineers for ecosystem restoration. Mr. Schulte asked if the appropriation was supposed to be for the updated GI P&P that isn't being used for the old GI Study. Ms. Napier explained that in federal fiscal years 2009 and 2010, there was an earmark in the Presidential budget. At that time, the earmark was believed to be for ecosystem restoration. There was interest in including flood damage reduction throughout the basin. That earmark was approved by title only. When approved by title only, it means a specific amount of funds is allocated for the project, which is the GI Study for the Chehalis basin. Typically, the level of detail comes under report language. In an earlier conversation with Keith Phillips from the Governor's Office, he was asked to look into the matter and provide input. A report was recently received indicating that the report language is the mechanism that spells out the details on how to spend the earmark beyond "x" dollars for a pilot project. There is no report prescribed in law on how the money would be used by the Corps. The Corps can spend the funds based on what the Corps is authorized to pursue. The Corps authorized authority is the GI Study for the purpose of ecosystem restoration.

Mr. Schulte asked whether the request is to use Chehalis Basin Partnership matching funds for the project. Ms. Napier said the request is to review the scope of work. Mr. Schulte asked if the scope of work includes matching funds. Ms. Napier said the matching funds are already credited. The Corps wants authorization to pursue the scope of work. Mr. Schulte commented that the Corps wants to use the Partnership's credited matching funds. Ms. Napier affirmed that's correct. Mr. Schulte indicated the use of credited matching funds requires the Partnership's approval. The Governor was asked to assume the role of local sponsor for the project and it appears that coordination with the Governor's Office has occurred.

Ms. Napier said another question was whether the state would take over as local sponsor of the basin-wide GI Study. If the state assumed the role of local sponsor, everybody agreed it would have two purposes. The Partnership sent a letter as well as the Flood Authority to the Governor's Office spelling that out. Additionally, it was understood that there were federal dollars available if the state assumed local sponsor and that a local in-kind credit was available. GI projects require a 50/50 match of federal and local dollars. When the request was made there was an incentive as there was some in-kind credit. There was a concern if the federal funds and the credit were expended, the state would no longer be interested in becoming the local sponsor, as there would be no fiscal incentive. Ms. Napier said she asked the question of Mr. Phillips who affirmed that was the situation. However, in considering current conditions, there are no other federal dollars appropriated beyond what has been obligated for the project. The issue is now a moot point and the state is not interested in penalizing the Partnership in its decision on whether it will assume the role of local sponsor.

Mr. Swartout asked whether the funds must be spent by September 2011. Ms. Napier replied that the scope of work was reviewed by the state, which took some time, as there were several amendments to the scope of work by the Corps of Engineers. The Corps of Engineers process involves executing an approved scope of work within 30 days or the project must be re-scoped. Another aspect of the timing issue is that the money is not obligated. The Corps indicated that the funds must be obligated to a contract or forfeited. That issue was reviewed with Mr. Phillips and he pursued the question with Senator Murray's office and the government office in Washington, D.C. Mr. Phillips asked whether there is a risk of losing non-obligated funds for the GI Study if not obligated within a specific timeframe. Mr. Phillips indicated that if funds are not obligated prior to work beginning on the next federal budget, which is August or September, then the funds will be forfeited and reallocated for another purpose.

Miranda Plumb affirmed that if the funds are not obligated in the same fiscal year, the funds are returned to the federal treasury.

Mr. Stearns asked whether any contact has occurred with Representative Jaime Herrera Beutler's office. Pam Peiper replied that Representative Herrera Beutler is working on the issue. However, the funds have been reappropriated twice and if not contracted, the funds cannot be reappropriated.

Ms. Willis added that the Partnership doesn't have until September 30 to make a decision, a decision is necessary within the next 30 days.

Julie Balmelli-Powe asked whether the funds earmarked by Senator Murray of \$1 million are the \$500,000 for the Twin Cities GI Study and \$500,000 for the basin-wide GI Study. Ms. Napier said the funds are earmarked money. Ms. Balmelli-Powe asked if the intent of the funding was to examine flooding solutions for the basin. Ms. Napier said there was discussion concerning the intent but it was reported as "x" dollars for a specific project. The project must be authorized, which was the GI Study. The report language provides more detail. However, the intent was never described or adopted by law. Ms. Balmelli-Powe said during a recent Flood Authority meeting, Bill Goss from the Corps indicated the funds had already been expended. Ms. Napier said based on her understanding, there are funds appropriated for some projects. Some of the funds expended include the work of the Corps, Tetra Tech, USGS, University of Washington, and the H&H model.

Mr. Schulte said he asked for an accounting of how the funds were expended and received an accounting that doesn't match what was conveyed during the Flood Authority meeting. It was conveyed that there is between \$12,000 and \$40,000 remaining. None of the figures match and his concern is obligating or approving the project until the Corps provides an accurate accounting of the funds. Ms. Napier said she was informed the unobligated balance is \$471,000 and that the Corps wants to obligate the funds for the H&H study. She offered to research the issue further.

Several members commented on the apparent confusion in terms of the remaining unobligated funds. Ms. Willis provided additional clarification. A balance of \$471,000 is for the hydraulic modeling and cannot be expended until there is an agreement signed with Grays Harbor County. She's unsure why Mr. Goss referred to an unobligated amount of \$40,000. There was much information conveyed during the Flood Authority meeting during a limited amount of time. Recent conversations with Mr. Phillips included an assurance the funds were available and could be used for the H&H Study.

Ms. Holbrook-Shaw suggested moving forward with the county pursuing a contract to avoid the loss of the funds. Ms. Willis affirmed that if the funds are not obligated the funds will be lost. The project has been discussed for some time. The project will provide important and credible information. The Governor's Office is supportive of the project with the understanding that the additional funds appropriated by the Legislature this year would augment any additional sophisticated hydraulic studies that might be needed beyond this project. She encouraged the Partnership to provide advice on moving the project forward.

Jim Hill spoke in favor of the project and asked for consensus to move forward.

Mr. Jennings reviewed some language from the scope of work modeling overview, which states that presently the basin lacks models that can predict full downstream effect of ecosystem restoration or flood damage reduction projects. H &H models are well-suited to estimate ecosystem impacts. Ideally, the model that connects Grays Harbor to the headwaters of the Chehalis will be developed to identify restoration opportunities and to better assess the benefits and impacts of resulting ecosystem restoration projects.

Ms. Napier described some of the work by Tetra Tech and offered to provide information. The University of Washington's contract is for approximately \$53,000 for work across the basin. Tetra Tech's contract was in 2008. In fiscal year 2010, USGS began working. The contract with University of Washington began in 2011.

Mr. Connelly shared that he was contacted by the university about the collection of hydraulic and hydrologic modeling information completed within the basin to consolidate all data. Ms. Napier confirmed that she will obtain more information.

Mr. Stearns commented that the basin is the most tectonically active area of the country.

Mr. Hill suggested concluding the funding discussion and move forward to approve the project.

Mr. Balmelli-Powe asked for additional clarification about the study before moving forward. She was told that the hydrology study would not provide information pertaining to flooding issues. She asked if the Flood Authority's study is also needed for flooding issues. Ms. Napier said the proposed scope of work is not intended to cover the Flood Authority's work or the GI Study. Mr. Schulte asked if the study has been coordinated with the Flood Authority's \$400,000 study on H&H. Ms. Napier said technically, the perspective has been that if the Corps completes the work there is the possibility of using the state earmark. The technical experts are advising that it's possible. However, there is no formal letter from the Corps expressing willingness to coordinate and accept the results of both studies. Ms. Napier advised that she has spoken to Mr. Goss, the Project Manager, about the Flood Authority's project. Mr. Goss indicated he's aware of the Flood Authority's work and that it could augment the work of the Corps. She believes the state is interested in ensuring that there is that possibility, which is one of the reasons for sending the scope of work to the federal government. She has been told it's possible to augment the work of the Corps with the state dollars.

Ms. Willis said Patricia Olson sent a letter to Mr. Phillips and conveyed a similar message about the Corps recognizing that it will have to complete a more detailed study once appropriate sites are identified in order to bring designs to a higher level. The Corps has experience in analysis on other Corps restoration and mitigation modeling projects. Mr. Phillips sent the correspondence to demonstrate that there has been similar activity where the project begins at one level and augmented to increase results to a higher level. Mr. Phillips is comfortable with that idea.

Chair Canaday asked for a consensus to move the project forward. Mr. Schulte objected for several reasons. He asked for a letter from the Governor, Corps, and the Flood Authority requesting completion of the project and assurance that there is no overlap and that both studies can be utilized. He objected because it's unknown how much of the \$1 million is remaining and whether there are sufficient funds to move forward, and how much of the Partnership's credit will be applied. He also objected because when there is a reference to the designee or local sponsor, there is no mention of the Chehalis Basin Partnership. Additionally, there is no information on the version of FEMA flood maps that will be used.

Ms. Willis pointed out that during previous meetings motions have been made on issues. The issue is very important for the basin. The basin currently has a hydraulic study for the upper basin. The Partnership is working on basin-wide solutions and there is funding available to the Partnership. The Governor's Office is encouraging the Partnership not to lose those funds. If the Partnership continues to delay action, Mr. Phillips was very specific about the lack of time to move forward. She encouraged members to continue moving forward with the discussion to arrive at a decision. Several members took the time to meet with Mr. Phillips and address his questions. She requested consideration for voting on the action.

Mr. Schulte objected as the Partnership operates on a consensus basis. Chair Canaday agreed that if one person disagrees, the project cannot move forward. However, she's supportive of moving forward with the project.

Mr. Hill objected to the objection. The objection is obstructionist and terribly selfish of Mr. Schulte as it's about him and not the group.

Mr. Connelly requested a review for the basis of Mr. Schulte's objection. Mr. Schulte reviewed his concerns:

- \$1 million was earmarked. How was it spent and what is remaining?
- If CBP credits are needed - how much and how much is remaining?
- Ensure it is coordinated with the Governor's Office, Corps of Engineers, and the Flood Authority so everyone agrees to complete the study and when completed there is no overlap and that the study can be used by all parties.
- The designee should be the CBP (page 10 in the contract).
- Determine the version of Flood FEMA maps.

Ms. Napier described how CBP credits were generated. The credits were acquired beginning in 2004 during the development of the Watershed Management Plan and other assessments. Ms. Willis added that the CBP authorized Grays Harbor County to begin documenting the credits to apply them to the GI Study.

Mr. Stearns asked whether Mr. Schulte would support moving forward based on having the information provided. Mr. Schulte responded that the Partnership has been engaged in contentious issues and there is a lack of trust. He can no longer trust that the issues will be addressed. He wants the questions answered first before removing his objection.

Mr. White recommended that Ms. Willis, as the Grays Harbor County Commission, should ignore the advice of the Partnership, and move forward with the contract. Ms. Willis said the Partnership is an advisory group and Grays Harbor County does have the ability to consider that the majority of the group wants to move forward. As the study focuses on the lower basin, it's also of importance to the county. She said she likely could move forward based on the majority opinion of the body. Mr. Schulte objected.

Chair Canaday said the issue is associated with deadline. If the Partnership doesn't move forward, the funding will be lost, which is troubling.

Karen Valenzuela asked Mr. Schulte to consider moving forward using his list of questions as conditions that should be met as the process moves forward. She agreed they are good questions and there are likely answers. However, because of the lack of time, the Partnership should not let those questions prevent moving forward. The Flood Authority is not even in the position to determine if there is a conflict. She said as a Flood Authority member that whatever is pursued should complement the project rather than contradicting it. The Flood Authority is not able at this time, for lack of definition, to write a letter assuring that there is no conflict.

Mr. Schulte suggested establishing a temporary subcommittee to address his questions and then convey authority to the Chair to grant approval to Grays Harbor County.

Mr. Swartout reviewed the consensus voting process from the Partnership's operating procedures.

Chair Canaday asked for volunteers to serve on an ad hoc committee to resolve the issue within a week. Ms. Valenzuela, Ms. Willis, Mr. Connelly, Mr. Hill, and Mr. Schulte volunteered to participate. Ms. Willis asked Mr. Schulte to confirm that the questions are the last questions that need to be addressed in terms of moving forward. Mr. Schulte confirmed the questions are the last to address before conveying his support to move forward.

#### **Presentation: Climate Change and Changing Hydrologic Extremes**

Ms. Spaulding introduced Dr. Alan Hamlet, University of Washington, Climate Impacts Group. Dr. Hamlet's presentation covered climates changes and changing hydrologic extremes.

Dr. Hamlet reported all the data are publicly available along with extensive data resources on the Chehalis basin. He acknowledged team members who worked on the project. The project is related to the Washington State Assessment that was completed in 2009 by the Climate Impacts Group.

Climate is just one factor of many things to contend with, such as population increase, development decisions, and ecosystem changes. Climate affects many of those things in certain ways. The climate change problem can be characterized by considering the myth of stationarity - climate risks are stationary in time. Historically, long-term planning in the United States assumes that climate risks are stationary in time and that there are long historical records that can be used to characterize what those risks are in the historic record. If systems are designed so that they are robust to these risks that are documented than the design systems are likely to be robust in the future. This paradigm works well if, in fact, climate is stationary. However, when discarding the assumption that risks are stationary then historic records are likely not the best representation of the risks and the systems that have been designed based on those historical records may or may not be robust. If the 100-year flood is based on long historical records, that is one type of planning information that is used. However, if the 100-year flood is changing then the planning may not be as effective. That requires replacing the historical record with other kinds of information.

Global climate is changing very rapidly in a dramatic way. Dr. Hamlet displayed photos of the Muir glacier in Alaska taken in August 13, 1941 and August 31, 2004, which demonstrates the dramatic transformation caused by climate change. The question is how this change is affecting local concerns in the Chehalis basin and in the Pacific Northwest.

Focusing on hydraulic extremes is important as most human and natural systems function in an average year. When extremes occur, problems are generated, such as floods, drought, or extreme rain events. Many people are far more interested in how those extremes will change rather than how the averages will change. Some of the kinds of impacts associated with hydrologic extremes are flooding, drought, wildfire, low flow and temperature impacts to fish, dam safety, dilution flows from industrial pollutants, stormwater management, and effects to sediment transport and effects from mudslides.

There is much information on flood risks related to 20<sup>th</sup> century records going back to 1915, and there has been work recently on extreme precipitation events that have caused flooding, particularly in Western Washington.

Dr. Hamlet shared results from papers completed in 2007 examining flood risks across the western United States and a more recent study by the Corps on the effects of atmospheric rivers on flooding in Western Washington. The 2007 study examined the effects of warming and changing precipitation statistics on flood risks across the western U.S. There have been strong temperature increases across the West in the 20<sup>th</sup> century with changes focused strongly between January through March, which is during a time when there is significant flooding in many areas of the western U.S. The Chehalis River is not that sensitive to temperature. In the Chehalis, there is not that much change in flood risk due to warming. The issue is the amount of precipitation. Prior to 1975, there were only two deviations from the mean. After 1975, there are frequently two to three deviations from the mean. There was a step change in the climate in the mid-1970s that resulted in those changes. That information is important for flooding. It expresses itself as increases in flood risk across the West and within the Northwest. The change is occurring to the western U.S. as whole and not just to the Chehalis basin. It is occurring to many other basins in western Washington.

Atmospheric rivers can be characterized as a hurricane with a pipe, which entails a warm water source that delivers water that is then channeled into a long stream until it hits the coast and the coastal mountains. Many have historically characterized these events as "pineapple express" events. The event that occurred on November 7, 2006, broke records across Western Washington. The question is whether the changes in precipitation statistics experienced since the mid-1970s are related to the changes in

atmospheric rivers and is global warming and natural climate variability responsible for increasing the intensity of the events. Studies currently underway are trying to answers those questions.

Dr. Hamlet reviewed the 20<sup>th</sup> century climate projections for the Pacific Northwest from the Climate Impacts Group. The graph documents the changes in temperature and precipitation on an annual basis. He reviewed several scenarios and how they are impacted. Over the next several decades, the differences between the two scenarios reflect very little difference, which suggests that what will occur is already in the pipeline for the next decades and will not have a significant impact. That suggests that adaptation in the next several decades may be the only choice available. By the middle of the 21 century the new fifth percentile for annual temperature is above the 95th percentile from the historic record. If the scenarios are close to accurate, there will be no difficulties in recognizing the differences in temperature, as it will be obvious. In terms of projecting impacts in moving forward, there is much uncertainty in the variations from decade to decade and from year to year. Systematic changes from global changes are relatively small. What will likely occur are warmer conditions coupled with things that look like natural variability of wetter in some decades and drier in other decades, but all warmer.

The Gold Climate models that were used to project also suggest changes in seasonality precipitation. It reflects that conditions are likely to be wetter in the winter, spring, and fall and drier in the summer and that pattern intensifies through the 21<sup>st</sup> century. This is important especially to the Chehalis, because the basin floods in the early to mid winter and precipitation is projected to increase during that time of year.

Dr. Hamlet presented results from a simulation using a physically based hydrologic model called the Variable Infiltration Capacity Model. The model effectively simulates snow and snow pack that was an important factor in some of the recent flooding. The project was funded by DOE under House Bill 2860, which was focused primarily on the Columbia basin, which also included a number of coastal drainages such as the Chehalis. The \$500,000 study took three years. All the data are available on the website at [www.hydro.washington.edu/2860/](http://www.hydro.washington.edu/2860/). A summary report describes the methods and the data resources that are available. There is a tremendous amount of data across the region and over two portions of the Chehalis at Grand Mound and at Porter. There are also GIS layers, evaporation, solar radiation, precipitation, and temperature from 1916, and 77 climate change scenarios.

Dr. Hamlet shared the results of the hydrologic extremes in future decades of 20, 50, and 100-year events, and 10 climate model simulations. The average results reveal a modest increase in flooding in the Chehalis because of the increase in precipitation, which intensifies toward the end of the 21<sup>st</sup> century. By the 2080s, all scenarios are showing increasing flood risks and a 20% increase in the 100-year event under natural conditions. There are also extensive changes in low flows. In the Pacific Northwest, the climate model suggests that there will be drier summers, which will intensify through the 21st century. With warmer conditions there is increasing evaporative demand. Based on the 270 sites in the Pacific Northwest, most sites are showing some increase in flooding. For the Chehalis, it reflects a 10% to 15% increase by the 2040s. The least sensitive basins are the cold ones that flood in the springtime because of snow pack. The scenarios are relatively conservative estimates of what will happen to flood risk across the region. Currently, studies are underway using the latest regional scale climate models to understand in more detail what the storms will look like that will affect the Pacific Northwest. The tools are valuable in that they provide information resembling real time weather forecasts for the 2050s.

Dr. Hamlet shared that the preliminary results of the studies have not been peer reviewed but do reflect a much larger flood risk in the Chehalis. Flooding in low-lying rain basins like the Chehalis is most strongly affected by increasing storm risk in the winter with minor impact from temperature.

*Ms. Willis left the meeting.*

Mr. Stearns asked about rain on snow events and how it impacts the results of this study. Dr. Hamlet said that for the largest floods on record snow pack had little impact with the entire basing contributing. In future climate change scenarios, snow may not be present to impact flooding.

Mr. Stearns asked if the studies consider the impacts from the loss of forests and increased impervious surfaces. Dr. Hamlet said the model assumes a natural watershed.

Ms. Balmelli-Powe asked what contributed to the change in the 1970s. She mentioned the axis of the earth and the wobbling effect. Dr. Hamlet said the jury is still out whether this is related to any meaningful way to pole climate change. Tree ring records across the West were examined and there are two similar periods in 1580 and in 1780 that have the same expanded variance and the cohesiveness of the West. It has happened in the past apparently. That however, does not preclude the fact that global climate change may also be introducing the effects. It is broadly consistent with what the scenarios suggest might be happening. The limitation is that the global climate models don't necessarily reproduce everything that happens in the historic record in a regional setting. For temperature, there is the ability to attribute what has happened regionally to greenhouse forces. However for precipitation it is almost never effective.

### **Presentation: Water Law 101**

Lara Fowler, Gordon, Thomas, Honeywell, described her experience and background in water law. Her main area of expertise is dispute resolution. She provided the historical underpinnings of water law, which originated from England and introduced to the United States as common law. She described the issues associated with water rights during the California Gold Rush in the mid-1800s, which eventually led to the basic tenets of prior appropriation of "first in time, first in right." If the water is not used, it's lost, which was codified by the state for a five-year period. Previously, water had to be diverted and it had to be put to a beneficial use originally defined as industrial, municipal, and something consumptive and removed from the stream.

In 1917, Washington State codified water law and the principles of prior appropriation and established that water is a state public resource. A person with a water right has the permission to use it, which comes with certain rights and responsibilities. The legislation formalizes the state as the administrator of water rights now under DOE. In 1945, the state passed a code codifying groundwater as a state asset. In 1969, water for instream purposes was recognized as a beneficial use. In the 1970s, the state began to look at the integration of planning and water use. In 1990 and 1991, the Growth Management Act was passed which required counties to combine land use and water planning. In 1998, the Watershed Planning Act was passed.

There are many hot topics today, one of which includes climate change, which has a major impact. The state's current water law is cumbersome for dealing with climate change. Additionally, new uses have been introduced. Some are not new, such as tribal water rights. The US Supreme Court in 1906 in the *Winters v. United States* case ruled that if the US government has set aside a reservation for federal purposes there is water for that reservation. There are a number of tribes today that have negotiated and some have sued for their water rights. Some tribes are beginning to consider quantifying their federal rights. The priority date of those federal rights would be time immemorial (predating everyone) or from the date of the reservation. Currently, it is a huge unknown.

Instream flow rules for the Chehalis basin were established in 1976 for many of the small streams, which prevents further water withdrawals from the streams particularly during summer months.

There are many questions arising between surface and groundwater connections. There are issues with exempt wells across the state and the western U.S. New sources of supply include reclaimed water, which is highly treated sewage water. In Orange County, reclaimed water has become its main source of water supply.

Rainwater is also of interest. The state adopted a policy two years ago where de minimis amounts are authorized. However, use above a certain level requires a permit.

Another big issue is the management of existing supply in relation to climate change. There are many questions concerning metering and measurement and who is using the water and how it's used. There are also many questions about water banking, leasing, and donations.

Ms. Fowler provided several resources on Washington water law and how it evolved. One resource is located at [www.ecy.wa.gov/pubs/0011012.pdf](http://www.ecy.wa.gov/pubs/0011012.pdf).

### **Monthly Organizational Presentation: Carlisle Lake Project**

Jim Tyner, Onalaska High School, shared information on a hatchery program involving high school students. The Onalaska School District is one of the few districts in the nation to have a fish hatchery. In the last five years, the hatchery has introduced 750,000 fish back into the Chehalis basin through the Newaukum River.

Mr. Tyner displayed photos of the hatchery at the school, which is called the "Fish Center." The program initially began with seven students and this year 30 students participated. Fish trays were first utilized this spring to place 35,000 steelhead in the system. The trays are used to hatch eggs and introduce them. Smolts are obtained from WDFW with over 150,000 raised each year. The fish are placed in Carlisle Lake for three months.

The hatchery has three net pens, which include Coho salmon and rainbow trout. Students participate in classroom studies and learn about the entire cycle of raising fish. Students learn how to clip fish as well.

Five years ago, approximately 30 fish returned each year. In the last several years, approximately 1,800 fish returned. Last year, 2,550 fish returned.

The students participate fully in a 'hands on' environment and learn all facets of hatchery operations.

When the hatchery was first opened, students cleaned up the lake and the parking lot and removed five pickup truck loads of garbage from the lake and surrounding area.

Students also learn about aquatic animals ranging from otter, eagles, ducks, and beaver.

Chair Canaday asked about the possible expansion of the program into other schools. Mr. Tyner said there are no expansion plans at this time other than raising more fish.

Mr. Stearns asked if there are any hatchery goals to improve the sustainability of wild fish runs without hatchery fish. Mr. Tyner said the hatchery is operated through a contract with the state. Bob Burkle added that in the Chehalis basin wild fish are in good shape. The hatchery supplements wild fish.

Ms. Holbrook-Shaw spoke about the positive benefits of the hatchery program. She commended Mr. Tyner's efforts to develop the program and how important it has been for the students. Many of the students on enrolling in fishery programs at college for the first time.

### **Agenda Items for July 22, 2011 Meeting**

Ms. Spaulding reported a meeting location needs to be determined for the July meeting. Mr. Connelly confirmed the meeting location will be at the casino.

Members agreed to change the meeting date to July 29.

## **ADJOURNMENT**

With there being no further business, Chair Canaday adjourned the meeting at 12:18 p.m.

Prepared by Valerie L. Gow, Recording Secretary/President  
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