BAKER RIVER PROJECT RELICENSE

Economics/Operations Working Group

November 13, 2002

9:00 AM --- 12:30 PM

PSE Office
1700 E. College Way, Mt. Vernon, WA

FINAL MEETING NOTES

The Economics Working Group Mission Statement:

"To ensure that alternative project proposals, operations and emergency plans for the Baker River Project and its components provide for:

1. *Public health and safety; and*
2. *Thorough analysis and evaluation of the economic costs and benefits (including non-market and economic impacts.)"*

Team Leader: Lloyd Pernela (PSE), 425-462-3507; lloyd.pernela@pse.com

Note: Please let the team leader know if you are unable to attend a meeting. If something comes up at the last minute, please call Lyn prior to the meeting. Lyn's cell phone is 425-890-3613.

PRESENT

Lloyd Pernela, Bob Barnes (PSE); Jon Vanderheyden (USFS); Bob Helton (citizen); Stan Walsh (Skagit Systems Cooperative); Ken Brettmann (U.S. Corps of Army Engineers); Dave Brookings (Skagit County Public Works Department); Steve Jennison (DNR); Gary Sprague by phone (WA Dept. Fish & Wildlife); Mark Killgore (Louis Berger Group); Bruce Freet (Environmental Agreement); Mary Jean Bullock, note-taker and Lyn Wiltse, facilitator (PDSA Consulting Inc.)

INTRODUCTIONS

We welcomed Dave Brookings of the Skagit County Public Works Administrator.

DATES OF FUTURE MEETING DATES/LOCATION

January 8th, 2003, from 9:00 AM to 1:30 PM *with working lunch by PSE*, at PSE Office, 1700 East College Way, Mount Vernon.

February 12th, from 9:00 AM to 1:30 PM *with working lunch by PSE* at USFS Mt. Baker Ranger District, 810 State Route 20, Sedro Woolley, WA 98284.
Conference call-in = 1-866-280-6429 with a participant code = 144995.

NEW ACTION ITEMS

- Lloyd: Update and distribute Economics Group contact list.
- Bob: Create comparative hydrology graph (contrasting the three candidate years) and post all hydrology graphs on the web.
- Bob: Check to see if there is a correlation between degree of annual wetness of years to reservoir levels.
- Bob: Run flow duration curves for each candidate years.
- Dave: Present update on Avon floodway at our January or February meeting (combine with presentation by Pat Massey on updated flood plain maps)
- Bob will give the hydrology charts and data to the team leaders and also post the graphs on the web.
- ALL: Consider how to approach flood control assumptions.

AGENDA

November 13, at PSE Office, 1700 E. College Way, Mount Vernon
9:00 to 12:00

1. Introductions
2. Review/revise minutes and agenda
3. Action Items
   Economics baseline report, etc.
   Discussion of baseline hydrology years (feedback from Working Groups)
4. Discussion of approach to analyzing flood control and development of options
5. HYDROPS update
6. PMEs: Review issues list and begin to brainstorm possible PMEs
7. Prepare agenda for December 11th meeting
8. Evaluate meeting

REPORT ON OLD ACTION ITEMS

- ALL: For hydrologic baselines: review hydrologic years in the low, medium and high clusters with resource folks (working groups) to determine which particular year(s) within a cluster helps them resolve the differing interests associated with high/medium/low years.
- Bob: For baseline, distributed copies of hydrologic graphs for candidate years in clusters to share with members of all Working Groups.
- Ken distributed the US Senate and House Committee Resolutions (May, 1977) referencing House Document 95-149, which outlines the authorized flood control.
- Don: Provided Lloyd with a copy of draft economic baseline report (August, 2001). It will be updated in the next couple of months.
- Ken: Checked with the Corps folks in Portland (The Power Branch) to see if they are re-evaluating compensation issues. The re-evaluation of the rule curve is under the control of the Seattle District, so Ken will be our contact for this.
- Lloyd: Sent out revised list of all issues (originals) to be resolved by Economics Working Group.
- Lloyd: Posted Ken's presentation on Web.

BASELINE HYDROLOGY TEAMLET
Bob reported that the candidate years being proposed are:

Low: 1952 (exceeded 91.4% of the time)
Med: 1962 (exceeded 50% of the time)
High: 1968 (exceeded 10.34% of the time)

Each year in a cluster is economically neutral.

He pointed out that for the low flow years, 9,600 cfs was never exceeded on a daily basis. For median and high years there are several daily occurrences above the 10K cfs threshold Bob asked for feedback from the group re: using these three years in the HYDROPS model for running various scenarios. We may also need to come up with some standard economic assumptions for the model.

We agreed to run these years by the resource Working Groups. Bob will give the charts and data to the team leaders and also post the graphs on the web.

DISCUSSION OF APPROACH TO ANALYZING FLOOD CONTROL AND DEVELOPMENT OF PROJECT OPTIONS
Dave Brookings of Skagit County PUBLIC Works presented the county's interest in maintaining/ optimizing flood control for Skagit Valley over the term of the next license period. They will complete the Skagit Valley flood study in 2004 at a cost of $8-million. Estimated constructions costs are $250-million with county matching at 35%. These studies assume the continued existence of the current Baker Project Flood control storage. He passed out an August 7, 2001 resolution by the three Skagit County Commissioners that requests no net loss of flood control storage. He also presented the County's testimony on the Baker Relicensing Initial Consultation Document asking for study of additional flood control measures.

Ken Brettmann explained that the U.S. Army Corps of Engineers would maintain the existing flood control levels at 74,000 Acre Feet, (as a floor), leaving open the potential of additional flood storage up to 26,000 Acre Feet. A study to this effect may be justified as part of this relicensing effort.
The focus has been on volume, but there is also the issue of timing. For now, we will assume the timing would also remain the same (making 74,000 Acre Feet available by November 15) with any changes in timing shifting to earlier in the year. (E.g. October). Ken handed out a letter from the COE to the economics group asking the economics group to formalize the existing flood control storage and timing and use this as a basis for further analysis. He also distributed a new draft of Article 32 dealing with flood control in the current license.

Another part of the Army Corps of Engineer's interest is based on minimizing costs to the federal government.

Mark Killgore presented a review of House Document 95-149 (May 7, 1977) which was the basis for the Congressional resolutions in 1977 and the August 2001 Baseline Economics and Skagit River Draft Hydrology Investigations. In 1977 the 100-year flood peak on the Skagit of 237,000 cfs. This was reduced to 222,000 cfs in the 2001 studies. Control analysis in 2001 has no flood control at Lower

Baker, Diablo or Gorge Dams. Control procedure has outflow from Ross and Upper Baker equal to inflow until 8 hours before Skagit River at Concrete is forecast to reach 90,000 cfs. Outflows then are restricted to 5,000 cfs at Upper Baker and at Ross.

The current 74,000 AF was based on 58,000 AF of incremental storage beyond the 16,000 AF of lost valley storage producing a maximum benefit-cost ratio of 2.6 in the 1977 study. The 1977 incremental benefit from Upper Baker flood control for the Skagit was over $1,004,000. The cost of lost energy and capacity in 1977 was estimated as $434,000 based on replacement energy and capacity estimates for new facilities. As of the year 2001, PSE is compensated about $280,000 per year in equivalent power. In 2001 the net incremental benefits of Upper Baker would be $16,000,000, assuming a comparable ratio of Upper Baker flood control benefits to overall flood control benefits from the combination of Upper Baker, Ross and levee system as was determined in 1977. If these costs and benefits specifically attributable to Upper Baker could be borne out by more detailed study, the benefit cost ratio could be over 60:1 using the current level of compensation as a basis for cost. Some key storage and elevation parameters for flood control in Upper Baker include:

126,950 AF elevations: 694 fmsl to 724 fmsl physical limits.
100,000 AF elevations: 701.9 fmsl to 724 fmsl by statute
74,000 AF elevations: 707.8 fmsl to 724 fmsl Memorandum of understanding, 7,000 MWh.

Several questions remain today as to what are the benefits of Upper Baker flood control. Additionally there is interest in how the Corps methodology for flood control assessment and economics might have changed.

Bob Barnes presented a DRAFT working paper "Baker River "No Project" or partial Decommissioning Alternative and Flood Control." Bob pointed out that for single purpose projects "No Project" typically looked at the no-dam scenario where inundated lands would rejuvenate back to former uses. However, Baker Project has evolved into a multi-purpose project.

At the last Economics WG meeting the COE indicated that over the last twenty years Upper Baker has saved over $90,000,000 in flood damage reduction. The average annual cost to the Federal Government is $276,000. Skagit County observed that Upper Baker is the least cost option for flood control available to the county, who is planning on a $275,000,000 flood control project.

The climatic future of the North Cascades indicates a scenario with potential of flooding increasing.

A "non project" may be more operational in nature than physical. That without PSE, an entity like the COE would operate the project to fulfil their flood control mandate and that entity may elect to generate power (it should be noted that the assumed takeover of the Baker Project by the COE is speculative and would require a future act of Congress to implement). Operational priorities for the project would become flood control, fish passage, water conservation/flow augmentation, recreation and power production.

In subsequent discussions, Dave Brookings indicated that current flood studies on the Lower Skagit cost about $8 million and the county bears half the cost. Projects built as a result would likely have a 65% federal – 35% local cost sharing arrangement. The current flood studies should be complete

in 2004 and recommendations could be incorporated in to the 2006 Water Resources Development Act. Groundbreaking for any new flood control measures could occur in 2008 or 2009. A key element is the 5-mile long Avon floodway.

ASSUMPTIONS AROUND FLOOD CONTROL

The Solution Team has asked us to come up with a statement re: assumptions around flood control to share across Working Groups. Lloyd suggested we use Marian Valentine's opening statement in her letter of November 13, 2002: "to formalize the existing flood control as a basis of further work".

Stan felt this would be pre-mature as it might preclude proper evaluation of environmental considerations.

We agreed that Upper Baker would continue to be used for flood control over the term of the new license. We also agreed that the existing baseline condition is the current flood control authorization of 74,000 AF.

Jon suggested we consider a statement assuming the level of flood control to be the existing 74,000 AF plus or minus 20%. This translates into running PME options through the HYDROPS model at the existing level, then again at plus 20% and finally at minus 20%. Another option is to consider that flood control would remain at 74,000 AF and only consider plus or minus 20% if a PME called for that evaluation. Given that the FERC license specifies up to 100,000 AF of flood control, it may be reasonable to consider alternative ranges from 60,000 AF to 120,000 AF.

Ken and Dave expressed concern about a statement coming out of this group that might infer a decrease in existing levels of flood control. Lloyd suggested the "political reality" would not allow us to drop below the existing 74,000 AF.

We also need to take into consideration instream flows and timing. It was also brought up that Lower Baker may be a viable option for augmentation of flows where it is not seen (by COE and PSE) as viable for flood control as built.

It was generally agreed that the issue of including a flood control regime into the three baseline scenarios was a policy call and would be reported to the Solutions Team.

HYDROPS UPDATE

Jon Vanderheyden reported that Stetson Engineering is still in the process of reviewing the HYDROPS model. They have had technical difficulties getting access to the model and are currently visiting Powel in Victoria. We will get their evaluation at our December meeting.

REVIEW ISSUE LIST AND BEGIN TO BRAINSTORM POSSIBLE PMEs

Mark Killgore handed out a "Draft of Economic Considerations in Evaluating Costs of PME Measures." He compiled this list to assist preparation of the preliminary Draft Environmental Assessment. He looks forward to our feedback at our December meeting. In reviewing team members were also asked to take into consideration the initial lists of issues and interests put forth by this group distributed by Lloyd at our last meeting. Bruce cautioned us that many of the items on that list contained issues that are being

addressed by other Working Groups. One of the first things we will do next month is narrow this list by pointing out which issues are being covered elsewhere.

HANDOUTS (BOLDED HANDOUTS WILL BE POSTED ON THE WEBSITE)

- **Working paper: Baker River "No Project" or Partial Decommissioning Alternative**
- **Daily Discharge in CFS (Comparison of Low Flow Years)**
- **Combined Annual Average from 1944 to 1997 (Annual Benefits ($))**
- **U.S. Senate Committee Resolution of the Committee on Environment and Public Works**
- **Letter from the Mentor Law Group, July 18, 2002 re: Skagit County comments on Initial Consultation Document, the Baker River Relicensing**
- **August 14, 2001 letter from Skagit County Public Works Department re: Skagit County Interest Statement.**
- **Nov. 13, 2002 COE letter from Marian Valentine (USACE) re: request to Economics Working Group that the assumption of existing flood control be the basis for further work.**
- **Review of Flood Control Documents for Upper Baker, (PowerPoint Presentation) November 13, 2002**
- **Draft Economic Considerations in Evaluating Costs of Protection, Mitigation and Enhancement Measures by Mark Kilgore (The Louis Berger Group)**
- **Economics/Operations Working Group Issues and Interests (generated previously)**

PARKING LOT

- Forest Service Watershed Analysis
- New Baker EAP Inundation maps are available at end October 2002
- Consider who will be the number cruncher for this team: PSE? Other?
- GANNT chart with due dates, etc.
- Presentations:
  - Wild and scenic river 101
  - Fisheries/Hydraulics 102
- Presentation on updated FEMA flood plain maps and Avon floodway by Pat Massey? (February/March 2003)

EVALUATION OF THE MEETING

Well-Dones:

- Good open discussion re: flood control

Need to Improve:

- Ran over
- Needed more time
- Started late
- Need to establish phone protocol

What's Hot?

- Flood control

TENTATIVE AGENDA FOR NEXT MEETING

January 8th, at PSE Office, 1700 E. College Way, Mount Vernon
9:00 to 1:30 p.m.

1. Introductions
2. Flood Control assumptions
3. PMEs
    a. Narrow issue list (remove issues being addressed by other working groups)
    b. Economic consideration
    c. Role of this Working Group in assisting with PDEA
4. Review/revise minutes and agenda
5. Action Items
6. HYDROPS update
7. Set agenda for February 12th meeting at USFS
8. Evaluate Meeting