

Mystic Lake Hydroelectric Project
Whitewater Working Group
Meeting Summary
Microtel Inn, Bozeman, MT
June 11, 2009

Meeting Attendees:

PPL Montana – Jon Jourdonnais
PPL Montana – Lance Elias
PPL Montana – Frank Pickett
PPL Montana – Roscoe Kronfuss
USFS – Darin Watschke
USFS – Jeff Gildehaus
American Whitewater – Kevin Colburn

Helen Mackay – Lazy EL Ranch
MFWP – Ken Frazer
MFWP – Jeremiah Wood
MDEQ – Andy Welch
American Lands – Jeff Frost
American Lands – Nancy Johnson
GEI Consultants – Ginger Gillin

Participants via conference line:

PPL Montana – Brent Mabbott
Beartooth Paddlers – Ron Ladders
American Lands – Bruce Bugbee

The meeting began at 10 AM with self-introductions. Nancy reviewed the agenda.

REVIEW OF 2008 STUDY RESULTS FROM FLOW RELEASES

Frank Pickett presented results of studies conducted in 2008 by PPLM to identify key operational and flow variables potentially affecting resources during whitewater flow releases. PPLM released water from West Rosebud Lake on three occasions during August 2008 to study potential effects of the releases. PPLM also developed a rating curve for the staff gage at the Pine Grove Bridge to allow estimation of stream flow at that location based on a gage height reading.

Based on results of the August 5, 2008 flow test, PPLM concluded that a 5-hour release of approximately 500 cfs from West Rosebud Dam would be necessary to provide more than 2 hours of flow measuring 2.0 (approx. 475 cfs) on the Pine Grove staff gage, the target flow for whitewater enhancement. These results provide key parameters used to develop the draft release protocol.

Measurements of water temperature during the 2008 flow tests indicated that releases cooled maximum water temperatures by 1 – 2° F.

PPLM together with MFWP also observed whether fish stranding was occurring on West Rosebud Creek as West Rosebud Lake was being refilled following the releases. The maximum rate of decline in water surface elevation of the stream was 0.1 feet/hour following the test on August 5. This was measured at Pine Grove where water fluctuations are attenuated by Emerald Lake. Fluctuations will be greater in the section between West Rosebud Lake and Emerald Lake. The low gradient sections had a slow decline as well. Brent Mabbott examined the stream for stranded fish but did not find any. Brent noted that having Emerald Lake downstream of West Rosebud Lake helps to attenuate changes in streamflow and water surface elevation.

Fisheries biologists have concluded that a minimum flow of 200 cfs is needed in West Rosebud

Creek during rainbow trout spawning season to prevent dewatering of redds. This minimum flow of 200 cfs below West Rosebud Lake will be maintained following the releases.

DISCUSSION OF DRAFT PROTOCOL FOR WHITEWATER FLOW ENHANCEMENTS

The group reviewed the proposed draft protocol for whitewater enhancements (see last page of meeting minutes). PPLM is proposing to test this protocol during the summer of 2009.

There was discussion of the phrase “descending limb of the hydrograph” and whether it is based on stream flow or inflow into Mystic Lake. The group concluded that in order to be the descending limb, Mystic Lake must be full (in those years when the lake fills) and the peak discharge must have occurred.

Helen Mackay questioned a possible impact to the fishery, and asked how far downstream potential effects had been studied. Jeremiah Wood MFWP noted that if minimum stream flow stays above 200 cfs, then stream side channels stay connected to the main channel and flow fluctuations in the channels are not excessive.

Most of the field examination of potential effects was completed in braided sections of West Rosebud Creek extending to one mile below the Pine Grove Bridge. Downstream of this reach, the stream is more entrenched, and the risk of fish stranding should be less. MFWP is comfortable with the protocol because a minimum flow of 200 cfs is to be maintained in the stream, and minimum and maximum water surface elevations are specified for West Rosebud Lake.

Jeff Gildehaus USFS noted that the upper elevation for operation of West Rosebud Lake during the period when the lake is being filled (6397.6 feet) is within one foot of inundating the West Rosebud Road. If West Rosebud Lake were to go above this maximum pool elevation, the road would begin to flood, so it will be important to stay below the maximum level set by the protocol.

Helen Mackey noted observing a declining fishery over the past 40 years, and asked whether a focus on whitewater boating is of value to everyone. PPLM noted that whitewater flow enhancements will be a fairly rare event, typically a few weekends a year.

Brent Mabbott reported interviewing fishermen during the flow tests in 2008, and they did not notice a change in water levels. Helen Mackey mentioned that they had customers at the Lazy EL who paid to go fishing last year during the whitewater tests, and that the change in flows was detrimental to their fishing. Helen stated that if they (Lazy EL) are aware that the releases are going to occur, they can direct their weekend customers to other locations, times or activities during the releases. Their primary concern is the health of the fishery. Helen asked whether the whitewater plan will be revisited if fish populations decline as a result of the releases. PPLM explained they will be monitoring fish populations every three years, and that it is difficult to attribute a change in fish populations to one specific cause.

Will PPLM track the amount of whitewater boating use that occurs during releases? Nancy indicated that use would be tracked, though precise counts may not be possible. Communication with the paddling groups should be better this year, resulting in a better turn-out than in 2008. However, it will be up to the paddling community to monitor when the flow

releases would occur.

Decision: PPLM will post the draft protocol to the mysticlakeproject website, with a link to USGS gage #06204050 whose real-time readings provide the measurements for implementing the protocol. Under the draft protocol the gage reading observed mid-week (Wednesday) during the descending hydrograph provides the decision point for implementing or not implementing a release for the following weekend. (Note: the draft protocol was posted on 6-22-09.)

PPLM indicated that there is no set number of weekends when flow releases could occur. Based on historic discharge records, up to six weekend releases could have occurred in 1996. PPLM staff estimated that in most years there will be two or three weekends with releases, and that in some years releases would not be possible.

REVIEW OF DRAFT SAFETY SIGN FOR RELEASES

Jeff Frost handed out a draft caution sign that would help address safety concerns related to recreation use near streams when releases occur. The group reviewed the sign and suggested several edits.

Decision: The group agreed that the sign should be made more generic and less reach-specific so that several signs could be installed, possibly installing two different signs – one for the reach between West Rosebud Lake and Emerald Lake, and a different sign for further downstream. The group noted that the stream segment between West Rosebud Lake and Emerald Lake would experience the greatest fluctuation in stream flow during a release, while downstream areas would see less flow fluctuation. PPLM will develop and install the signs.

Helen Mackey expressed other safety concerns about floating the stream reach through their property due to the amount of downed timber and narrow stream gorges. They are concerned about safety and trespass on their lands. Kevin Colburn asked whether public and private lands along West Rosebud Creek are posted, and noted that fences crossing streams can be problematic for paddlers.

Decision: The USFS will post a sign along West Rosebud Creek that marks the edge of National Forest lands so people know they are entering private lands. Fences that cross the stream on private land through the Lazy EL will be flagged for safety.

TIMELINE FOR WHITEWATER PLAN REVIEW AND FILING

Nancy indicated that a draft whitewater plan will be available for agency review by mid-October, with a one-month review period. Following PPLM review of agency comments and plan revision, if needed, there will be a letter from PPLM requesting agency and AW concurrence on the plan. Then PPLM would file the plan with the Federal Energy Regulatory Commission (FERC) by December 15.

SNOWPACK LEVELS AND RUNOFF FORECAST

Lance Elias indicated that the Upper Yellowstone basin is at 100% of normal snow pack. The June/July runoff is currently projected to be 94% of normal and Mystic Lake runoff is expected

to be 90% of normal.

A rough estimate is that Mystic Lake will be full by about July 10. West Rosebud Creek should be at 300 cfs until about July 20 and at 250 cfs by the end of July if the pattern follows last year.

OTHER DISCUSSION ITEMS

PPLM is considering installation of a new gate at West Rosebud Lake in 2010 – 2011. The new gate would make flow control at the dam much easier. At the present time PPLM does not have fine control, as gate manipulation is done with stop logs. Jon Jourdonnais and Lance Elias will work with the Mystic plant staff to let them know when to begin the whitewater releases.

The meeting adjourned at 12:30 PM.

Draft Protocol for West Rosebud Creek
Whitewater Flow Enhancement
(April 1, 2009)

Handed to attendees of the June 11, 2009 Whitewater Coordination meeting

During the descending limb of the West Rosebud Creek spring hydrograph:

- When the Wednesday noon stream flow reported on the USGS Streamflow Gauge West Rosebud Creek near Roscoe MT (#06204050) is greater than 400 cfs, no white water flow enhancement will be provided.
- When the Wednesday noon stream flow reported on the USGS Streamflow Gauge West Rosebud Creek near Roscoe MT (#06204050) is between 286 cfs and 400 cfs, PPLM will endeavor to release 500 cfs for 5 hours from the West Rosebud Lake Dam on the following Saturday and Sunday.
- When the Wednesday noon stream flow reported on the USGS Streamflow Gauge West Rosebud Creek near Roscoe MT (#06204050) is between 250 cfs and 285 cfs, PPLM will endeavor to release 500 cfs for 5 hours from the West Rosebud Lake Dam on the following Saturday only.
- When the Wednesday noon stream flow reported on the USGS Streamflow Gauge West Rosebud Creek near Roscoe MT (#06204050) is less than 250 cfs, no white water flow enhancement will be provided.
- PPLM will endeavor to operate West Rosebud Lake below 6397.6 feet and above 6395.0 feet elevation during whitewater flow enhancement events.
- Minimum flow below West Rosebud Lake, during whitewater flow enhancements, will be maintained at 200 cfs or greater as measured at the USGS Streamflow Gauge West Rosebud Creek at Emerald Lake Campground (#06204070).
- White water releases from West Rosebud Lake Dam will begin at 7:30 AM. Peak flow (near 500 cfs) will reach the Emerald Lake Outlet at approximately 11:00 AM and will continue for approximately 2.5 hours, gradually reducing to pre-enhanced base flow conditions thereafter.