NOTES | October 3 & 4, 2011

Mono Basin Core Working Group Meeting

Prepared by Center for Collaborative Policy and Approved by Core Group

Key Outcomes

The Core Working Group (Core Group) briefed members of the State Water Resources Control Board (SWRCB) on the status and accomplishments of the Mono Basin process. The SWRCB provided input on progress, recommended tools and processes to help the group develop recommendations and clarified options for temporary flow variances.

LADWP has resolved concerns regarding minimal freeboard and seepage and confirmed that return ditch is able to sustain flows of 380 cfs (Feasibility Report topic #9). LADWP provided an update on a proposed Langemann gate for Lee Vining Creek. Due to recent changes in Lee Vining Creek channel, the Core Group will further analyze instream flow data to determine any new biological effects. LADWP will install a camera to assess potential icing problems given the changes in the channel and conduct an icing study this year.

The Modeling Work Group has yet to reach consensus on whether stream ecosystem flows are in excess of the amount required to maintain Mono Lake levels. Validating the eStream model is the highest priority and will enable the Core Group to have confidence in the data generated prior to moving forward with additional runs. Utilizing linear regressions may help improve eStream and clarify the discrepancy among past and current models regarding the amount of water available for export. The Core Working Group authorized the Modeling Work Group to move forward on identified priorities. The Core Group clarified issues pertaining to the eStream licensing agreement, and members' attorneys will define and limit the terms of disclosure and draft a revised agreement. The verified model will be available for Core Group members to use in December.

Next Meeting: November 15, 2011, 10:00-4:00 p.m. in Bishop

Topics: Formalizing Requests for Changes to SCE Lee Vining Creek Releases

Action Items

Timeframe		Action Items
Red Items Newly Added on Oct. 3-4		
underway	Coufal & Edwards	Draft revised eStream licensing agreement for review by attorneys
11/15	Vorster & Moges (w/input from Drew)	Rough estimate of flow needs in Rush and Lee Vining Creeks in Wet-Normal and wetter year-types, in preparation for possible SCE request. [Next steps: review by Modeling Work Group; review by Core and Mike Schlafmann; group decision on 1 request or 2 separate.
	Ross Taylor	Winter Icing: analyze Lee Vining Creek (unimpaired) by year-type (Chart 4-1, p. 74 of Synthesis Report).
	Taylor	Review and conduct additional analysis of instream flow data on Lee Vining Creek due to recent changes in channel

done	ALL	Review proposed 2012 calendar and inform Gina of any conflicts
	Modeling Group	Track down LAAMP (v. 3.31) and figure out discrepancy between water available per D1631 vs. per Scenarios 1&2
	Modelers	Make progress on priorities outlined at Oct. 3-4 meeting: validation of model; Mono Lake equations; comparison of 2011 eStream results with 2010 feasibility letter and D1631 & 98-05; analysis of 'zero export' impacts; use of eStream with historic data; automated wrapping; code and ruleset for Scenarios 3, 4, 5.
	Moges	Check with Kathy Mrowka re: how to move forward in situations where SR recommendations are out of compliance with the Order (e.g. side channel maintenance)
	Trush	Identify output or metrics that Stream Scientists would like to see in modeling output presentations
8/14	Vorster	Determine availability of usable dataset for 1976-1979; if usable, run data.
9/1	Bartlett	**Lee Vining Flows** Follow up with M. Schlafmann re: high resolution photos of high flow conditions of SCE flows in Mono Basin (in particular, riffles and low-lying flats) to share with group; discuss at 9/29 meeting
9/21	Tillemans	Get data on 1995-2001 (when Grant Lake did not go below spill for six consecutive years) to determine impact on dam and dam safety
9/21	Tillemans	Include in data presentation graphs an analysis of compliance for peak flow (as done for storage over 29 year period)
9/21	Tanaka	Add Stream Scientist recommendations to data presentation graphs for comparison to alternatives (via note or additional line on graph, etc.)
Done?	Tillemans	Ensure that Upper Owens constraints are included in the model. Highlight any needed areas of discussion.
9/29 Meeting	Schlafmann Parmenter Vorster Trush	**Lee Vining Flows:** Determine that SCE 40cfs flows on Lee Vining contributes significantly to hitting flows for 1-week period on Lee Vining diversion table (possibilities are to develop a spreadsheet) before asking SCE to change operations formally
9/29	Modeling Work Group	**Lee Vining Flows**: Address with Modeling Work Group: potential to bring back to an 8-year flood event if Saddlebag releases 40cfs on Lee Vining (Synthesis Report, p. 78); modeling approaches for Parker/Water diversions (under the 98-05 rules)
9/29	Martin	Review last year's data regarding possibility of lowering Grant Lake level (absent temperature considerations)

SWRCB Briefing

The Core Working Group (Core Group) briefed Kathy Mrowka, Greg Brown, and Barbara Evoy of the State Water Resources Control Board (SWRCB) on the status of the Mono Basin process, including accomplishments and key topics to date: Charter; licensing; modeling; monitoring; potential facilities changes for Grant Lake Reservoir, Lee Vining Creek, and Parker and Walker Creeks; side channel maintenance; 2011-2012 winter variance; and interim operations.

The SWRCB reiterated the following:

- The SWRCB maintains its commitment to helping the Core Group move forward as fast as possible and continues to work to make the amended licensing process more streamlined and efficient. Reducing areas of disagreement among Core Group members will result in faster delivery of amended licenses. If the Core Group is able to present the SWRCB with agreed-upon items to approve, amended licenses could be issued within a period as short as six months. If there are numerous areas of disagreement, the Board would need to hold a *Workshop*, which could delay the process an additional 4-5 months. Areas of significant disagreement would require a *Hearing*. As the Board is currently scheduling Hearings two years' out, this would delay the licensing process by at least a couple of years.

- The amended licenses will be the sole authoritative documents to govern future Mono Basin operations and provide guidance to future management staff. Given the difficulty of modifying long-term Orders, the SWRCB encourages the Core Group to include elements of adaptive management into its recommendations. While the Core Group may propose ranges (i.e. Grant Lake levels will be within a certain range for a determined number of days), recommendations should be as explicit as possible. The Core Group should strive for a practical, implementable program that enables the SWRCB to measure compliance. In specifying dates, the Core Group should allow time for CEQA/NEPA review and for processes (i.e. construction) that are beyond the Core Group's control. One option is to present a streamflow operational protocol with different elements, including alternate dates.

- The Core Group should review any studies required in previous Orders to determine whether they still provide necessary data for daily operations. If the data is no longer meaningful, the SWRCB encourages the Core Group to propose changes to the existing requirements.

- When proposing management scenarios that rely on cooperation with parties outside of the Core Group, the Core Group should include recommendations to address anticipated changes in status (i.e. licensing renewals) that could impact future management. The SWRCB acknowledges that management during the interim period would pose a challenge.

- Agreeing on the use of one modeling program to evaluate Stream Ecosystem Flow is critical.

- Orienting new members of the SWRCB (yet to be appointed) will be important. One option is through an informational item, which takes two months to schedule. If the Core Group requests feedback or a decision from the Board, that process will take longer.

- A water right owner may make time-sensitive changes to an existing temporary variance, if all parties are amenable to an Amendment. The SWRCB requires documentation (by letter or email) that parties are in agreement; this is much faster than a change-petition process. While there is no limit to the number of temporary variances that a party can request, variances cannot last for more than six months. The only party that can petition is the owner of the water right. The owner may be able to petition under a Temporary Urgency Petition as well as a research permit.

The Core Group will provide its next update to the SWRCB in early March. In the meantime, the SWRCB will advise the Core Group on how to address situations where Synthesis Report recommendations are out of compliance with an existing Order.

Progress on Feasibility Report Topics

Mono Gate One Return Ditch (MGORD) capacity (#9)

LADWP has resolved concerns regarding minimal freeboard and seepage and confirmed that MGORD can sustain flows of 380cfs. While this means that Feasibility Report Topic #9 will become feasible, maintenance will be a constant challenge. Keeping the banks clear of vegetation (to maintain conveyance capacity) will be difficult due to the lack of roads on one side, and the few seepage areas will remain a problem. Another challenge is gopher holes. These limitations will need to be incorporated into the maintenance and operations plan.

Lee Vining Creek Facilities Changes & Interim Management Plan (#13)

LADWP engineering staff reviewed potential changes to Lee Vining Creek facilities. The best option is to use a Langemann gate to regulate diversion into the conduit. The exact costs are unknown but likely to be about$500,000, and installation may not occur for up to four years, due to the time needed for the purchasing process, manufacturing, and delivery. Installation would take 3-4 months and need to occur during the period of time after peak flows and before winter. Pending Board review, LADWP anticipates installation could occur from July through October 2015.

Ramping in Lee Vining Creek when coming back online after an emergency shutdown

Due to biological concerns related to fish, the Core Group had explored ramping rates to govern how to bring the conduit back online after emergency gate closure. SWRCB had requested enforceable language regarding ramping rates. The Core Group proposed revised language to the document *Special Conditions for Lee Vining Creek Operations*, which Dave Martin will incorporate into the next draft of the document. After considering numerous hypothetical scenarios (i.e. tropical storms, infrequent high autumn flows), the group agreed that no ramping is necessary on Lee Vining after an emergency shutdown.

Icing Study / Lee Vining Winter Baseflows (#27)

Before deciding whether to reduce winter flows from 16 to 12 cfs, the Core Group will analyze Lee Vining Creek (unimpaired) by year-type. Due to recent changes in the channel (the large pool that drove the Synthesis Report recommendation no longer exists), the Core Group will further analyze instream flow data to determine any new biological effects. The dynamic nature of Lee Vining Creek raises questions for predicting future management. LADWP will install a camera in Lee Vining Creek to assess potential icing problems given the changes in the channel and will conduct an icing study this year regardless of flows in the creek. In the future, the group may want to consider ice effects on Rush Creek as well.

Modeling

eStream Result Comparisons: Effect of Stream Ecosystem Flows on Mono Lake Levels and Exports

Stacy Tanaka of Watercourse presented results on the Modeling Work Group's analysis of the effect of SEF on Mono Lake levels and exports. The analysis set a starting Mono Lake level of 6,391 feet for

Scenarios 1 (Hybrid ruleset, capacity of 380 cfs) and 2 (Charlie's Rules, capacity of 750 cfs). In assessing Annual Average Export, the model considered the driest and wettest periods and averaged the annual totals. The analysis reviewed Mono Lake levels on a monthly basis and averaged the monthly totals. The model also compared Grant Lake storage under each scenario.

While the Modeling Work Group has yet to reach consensus on whether SEF are impacting Mono Lake levels, several interesting findings emerged:

- When the model was run without the mandated peak flow requirement, exports remained unchanged for a 29-year average
- Export was lower when the model limited peaks to 380cfs (as compared to when the SEF peak was released). In one year, releasing the peak yielded higher exports because it kept Mono Lake at 6,391 feet.
- When exports were prohibited (1996), Mono Lake levels were able to rise to 6,391 feet in a period of 4 years, which indicates that Mono Lake is very sensitive to the 10,000 acre-foot difference. This suggests that there may be an opportunity to manage Mono Lake levels in a way to reduce the frequency of reaching an 'exports prohibited' situation.
- There are unexplained differences in the results from eStream (current model) vs. FeasibilityLetter runs (one year ago) vs. LAAMP . modeling results from 20 years ago. The Core Group needs clarity on which model is capable of providing the most accurate results. Understanding the differences between the LAAMP and the eStream equations will help the Core Group understand the different results.
- Other potential lines of inquiry include testing each item in the feasibility analysis on its own, and evaluating whether the benches/peaks are affecting lake level and exports.

Mono Lake Regression Equations

Mike Deas of Watercourse presented the Mono Lake Regression Equations that are used to calculate monthly Mono Lake levels. Mike presented the development of the multiple linear regressions from 1989 to the present, highlighting limitations and modifications through the years. While these equations are a statistical model (rather than a water balance model such as eStream), the results in both are similar, and the statistical approach appears to effectively represent monthly Mono Lake elevations. Utilizing linear regressions may help improve eStream and clarify the discrepancy among past and current models regarding the amount of water available for export. Additional refinement and validation of the model must be completed, as well as determining whether adjustments in storage change with evaporation can reduce uncertainty and improve relationships. Mike anticipates that this should be complete by December 1.

Priorities for the Modeling Work Group

The Core Group outlined tasks for the Modeling Work Group, in order of priority:

High Priority

- Validating the model (eStream) is the highest priority and will enable the Core Group to have confidence in the data generated prior to moving forward with additional runs. The Core Group agrees that modification and refinements to the model are necessary, in particular:
    - Running the Mono Lake equations to account for (1) evaporation and (2) reducing uncertainty. The Modelers could conduct runs using extremes of the equations to evaluate whether this would result in significant differences to the Mono Lake level.
    - Comparing 2011 eStream results to previous data to assure that 2011 eStream is the most accurate tool. Previous modeling results to consider are (1) 2010 feasibility letter and (2) projections from 20 years ago (under D1631 and Order 98-05). Core Group members would like to see rules for optimizing operations in different year-types and understand the problems with each (e.g. clarity on how often the model failed to meet the criteria under each scenario).
    - Analysis of 'zero export' and the attendant quick rise in Mono Lake level
    - Use eStream with historic data since exports were curtailed (miscellaneous gains and losses and error term). Running eStream with historic data to see how closely it can reproduce actual flows is another way to verify the model.

Moderate Priority

- Automated wrapping
- Code for Scenarios 3, 4, and 5
- Rule set for weir, siphon, and pipe (3, 4, ,5). The Core Group agreed to wait to run these calculations until the model has been validated.

The Modelers have nearly completed analysis of the capacity to achieve SEFs under the priority scenarios: Scenario 1 (existing facilities and infrastructure) and Scenario 2 (with a theoretical expanded outlet). Other possible tasks include (1) modeling inflow from Southern California Edison and determining a specific amount to request, and (2) determining whether SEFs or Mono Lake levels are limiting exports. Questions and future areas of inquiry for the Modeling Work Group to consider include:

- How can the model be used to add flexibility to Operations? (i.e. exporting in dry years)
- How would guidance to avoid spills in Grant Lake Reservoir affect export?
- Compliance: review within one year at compliance, good days, etc.
- Operational analysis and compliance (rules for optimizing in different year-types)

Next Steps

- Additional information regarding the discrepancy between water available for export under different models will be available by October 20.

- Refinement and validation of the Mono Lake levels will be complete by December 1.
- The eStream tool will be ready for Core Group members to conduct runs by December.
- The Modeling Work Group is in the process of correcting the double-counting of SEFs that occurred under Scenario 1. This correction will be incorporated into the runs on the weir / notch / siphon alternatives so that spill is calculated once (rather than twice).
- Bill Trush will think of some elements that he thinks the Modeling Work Group should include as part of its presentations and analyses. For example, it might be helpful to graph the number of "good days" associated with a particular scenario alternative or to compare exports with percentage of SEFs.

Licensing

The Core Group clarified issues pertaining to the eStream licensing agreement. Legal counsel Nancee Murray (DFG) and Richard Roos-Collins (California Trout) attended in person and Bruce Dodge (MLC) and David Edwards (LADWP) participated by phone. The eStream model by Watercourse is proprietary software of LADWP. It is available for all Core Group members to use within the scope of this facilitated process, subject to the terms of disclosure summarized below and to be refined by the attorneys. The Core Group agreed to remove the clause on civil damages. It also agreed that relevant language from the Charter may be incorporated into the Agreement. As the Agreement does not reference the Charter, editing the Charter to reference the license or reflect the revised terms of engagement is unnecessary.

Disclosure

While licensees and LADWP may conduct independent runs of the data, all results must be shared with the entire Core Group prior to disclosure to non-Core Group stakeholders.

- **To SWRCB:** If Core Group members fail to reach agreement by the end of the facilitated process, LADWP and licensees may share model runs with the SWRCB. All model runs being used to develop testimony must be shared with the entire Core Group prior to submission to the SWRCB. If time is limited, sharing may be done by email.
- **To Core Group stakeholder:** The Core Group agreed that allowing all members to disclose data outputs (specifically, water balance model runs) to their respective stakeholders (e.g. Board of Directors, Commission) is important to the success of the facilitated process. Core Group members may share information that is in the public domain – such as the Meeting Notes – and may not speak for another party. The attorneys will refine the terms of communication.
- **To external stakeholders (non-licensees):** The Core Group recognizes that disclosing data outputs to non-licensee stakeholders (e.g. USFS, California State Lands Commission, MLC members) can build public support for the resolution of the facilitated process. All data results must be approved by the entire Core Group prior to disclosure to non-Core Group stakeholders. Review and approval may happen in Core Group meetings or, in the event of a time-sensitive need, via an email report-out to all Core Group members, who must agree on presentation of the outputs.

Examples of acceptable disclosure include:

- Any model run outputs already in the public domain (i.e. published in the Meeting Notes)
- General updates on the process: "California Trout ran eStream and generated certain outputs that were discussed by the group". Updates may not disclose specific numbers or attribute statements to specific parties.
- General insights (but not specific numbers) from Core Group presentations or meetings: "MLC believes that the following SEF has promise"; "The negotiations are advancing well".

Next Steps

- The lawyers will define and limit the terms of disclosure and draft a revised agreement by Friday, October 7.
- Core Group members and their attorneys will discuss policy issues in mid-October by conference call.

Document Review

- The Core Group reviewed the August 18th and August 23rd Meeting Summaries. Gina will incorporate edits and submit to the group at the next meeting for final approval prior to posting to the SWRCB and Lahontan Water Board.
- Based on the resolution of the eStream licensing agreement, there may be questions related to legally consistent language in the Charter. Core Group members are encouraged to contact Gina with any outstanding questions.
- The Core Group reviewed and provided edits to *Special Conditions to Lee Vining Creek Operations* v. 9/29/2011.

Calendar Update and Future Meeting Preparation

- The October 20th Core Group meeting was changed to a Monitoring Work Group meeting to be held in Mammoth Lakes from 9:30am to 1:30pm.
- Gina distributed an updated calendar with proposed 2012 meeting dates. Of note are a multi-day retreat in early February, a meeting with SWRCB in February or early March, and a potential SWRCB Workshop in April.

Attendance

IN PERSON

For SWRCB Briefing
Greg Brown
Barbara Evoy
Kathy Mrowka

Attorneys present for eStream Licensing Discussion
Nancee Murray (DFG)

Richard Roos-Collins (California Trout)
By phone
David Edwards (DWP)
Bruce Dodge (MLC)

Meeting Participants
Gene Coufal, Los Angeles Department of Water and Power (LADWP)
Lisa Cutting, Mono Lake Committee (MLC)
Mike Deas, Watercourse
Mark Drew, California Trout
Bob Hughes, Department of Fish & Game (DFG)
Morgan Lindsay, MLC
Dave Martin, LADWP
Geoff McQuilkin, MLC
Bruk Moges, LADWP
Steve Parmenter, DFG
Richard Satkowski (SWRCB)
Stacy Tanaka, Watercourse
Ross Taylor, Ross Taylor & Associates
Bill Trush, McBain & Trush
Peter Vorster, MLC

BY PHONE
Greg Reis, MLC
Paul Pau, LADWP
Eric Tillemans, LADWP

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