NOTES | July 13 & 14, 2011

Mono Basin Core Working Group Meeting

Prepared by Center for Collaborative Policy

Core Group finalized Aug 23, 2011

Meeting in Brief

The Core Working Group briefed members of the State Water Resources Control Board (SWRCB) on the status and accomplishments of the Mono Basin process: moving toward one recommended model, developing a charter to clarify group outcomes, and initiating a monitoring work group. The SWRCB suggested options for keeping the Board informed, specifically for the Core Group to consider scheduling a board workshop in fall 2011.

LADWP provided an overview of operations on Rush Creek and Parker & Walker Creeks. This spring/summer, the return ditch was able to carry 380 cfs recommended in the Synthesis Report. LADWP will report back to the group in October on some geological technical issues related to the return ditch and potential resolution. Diversion scenarios for Parker & Walker Creeks are a possibility that could be considered as part of the overall package, but the group will wait to pursue any analyses related to this. The Group identified potential solutions to coordinate peak flows on Parker & Walker Creeks with Rush Creek flows. Also, the group discussed possibly changing winter base flows after discussing the results of an icing study. For now, the Core Group will continue to rely on the recommendations in Table 2-7 (Synthesis Report, p. 42) for winter base flows. The Group will evaluate and provide guidance to the Stream Scientists regarding future research priorities once the different options are evaluated as a whole.

The Modeling Work Group presented a refined version of eStream. The Core Working Group agreed on two scenarios for modeling Stream Ecosystem Flows, recommended data presentation methods, and authorized the work group to model Grant Lake storage operations.

Next Meeting: August 18, 2011, 1:00-4:00 p.m. in Lee Vining

Call-in: 800-509-6344. Code: 6049721#

Topics: Direction on how to manage Grant in the models; discuss Scenarios Base with SEF and Grant physical changes; prioritize options from the Mono Basin Feasibility Report Summary; review Meeting Notes (June 28 and July 13-14); review Charter; Monitoring Work Group presentation

Action Items

Timeframe		Action Items
7/1	Schlafmann	Take high resolution photos of high flow conditions of SCE flows in Mono Basin (in particular, riffles and low-lying flats) and share with group
7/15	All	Have legal counsel review eStream licensing agreement and sign. As needed, convene legal team to discuss areas of concern.
7/21	Modeling Work Group	Run existing base scenario; figure out the transition from 11,500 to 20,000 acre-feet at Grant Lake and also how to get to capacity. Determine (from Darren) whether Grant Lake storage numbers were targets or minimums.

		Assess how the model is handling Grant and provide recommendations at the next Core Working Group meeting.
7/28	Bartlett	Revise text on Fisheries Monitoring to incorporate group edits
8/1	Parmenter & Coufal	Attorney input to Charter
8/1	Trush	For Special Conditions for Lee Vining, investigate ramping issues: - whether ramping rates need to be specified under both scenarios (run-off events as well as 5-Siphon Bypass) - ramping the diversion - early emergent fry
8/14	Vorster & E. Tillemans	Determine availability of usable dataset for 1976-1979; if usable, run data.
8/15	Modeling Work Group	Determine: potential to bring back to an 8-year event (Synthesis Report, p. 78); modeling approaches for Parker/Water diversions (under the 98-05 rules)
8/15	Moges & Reis	Define parameters of what to model for SCE operations
8/15	Martin	Work with Operations to provide enforceable language for Special Conditions to Lee Vining Creek (per SWRCB request)
9/1	Schlafmann Parmenter Vorster Trush	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
10/3	Coufal	Report back on seepage and minimal freeboard issues on MGORD (#9)

SWRCB Briefing

The Core Working Group briefed Vice Chair Frances Spivy-Weber, Kathy Mrowka, and Greg Brown of the State Water Resources Control Board (SWRCB) on the status of the Mono Basin process, including accomplishments to date (i.e. Charter, feasibility definition, formation of Modeling and Monitoring sub-groups, resolution of modeling discrepancies, planned structural modifications) and the proposed plan of progression through June 2012.

The SWRCB reiterated the following:

- Agreeing on one modeling program will be influential.
- Proposing solutions for the Feasibility Report Topics deemed "not feasible" (highlighted in red in *Mono Basin Feasibility Report Summary*, LADWP) should remain the top priority for the Core Working Group. The SWRCB encourages the Group to specify numbers and present the Board with enforceable language, rather than qualitative Goals and Objectives. If the group is unable to agree on a solution or alternative, the SWRCB will defer to the Stream Scientists to provide guidance and determine the consequences. The SWRCB strongly encourages the Core Working Group to continue to include the Stream Scientists as the process moves forward. While the SWRCB is prepared to make a decision on any unresolved topics, it strongly prefers that the Group reach consensus. The SWRCB noted that there are mechanisms to assist with this process; one example is the use of a 1707 instream flow dedication to preserve water rights (see discussion of Parker & Walker Creeks for details).

- While the Group should strive to reach agreement on 95-98% of the issues, reaching agreement is not necessary on 100%. The Board can help decide on the last 2-5%. The Group may prefer to address elements one at a time and share results with the SWRCB as it proceeds. Several forums are available to the Core Working Group to educate and inform the SWRCB of its progress:

    - *Hearings* are the most formal and result in the Board making a binding decision.

    - *Workshops* provide an informal way to exchange information with the Board and are not decision-making forums. They provide an opportunity to keep current Board members informed of progress and educate new members about the issues.

    - *Information Items* are very casual question & answer sessions. As two new members will soon be joining the SWRCB Board, the Group may want to consider holding an *information item* once new members have been in office for a month.

  The SWRCB encourages the Core Working Group to contact the Board if unsure of the best forum for a given scenario. The recently-released *Citizen's Guide for Working with the California Water Boards* offers additional suggestions on effective ways to engage with the SWRCB.

- Given necessary procedural timelines in CEQA processes, the SWRCB must have a change petition pending in order to make a decision on any proposed revised flow scenarios. If the Core Working Group wants to re-set baselines for the process, it must submit a temporary change order or 'change petition'. This change order can then serve as the new CEQA baseline.

- Given recent internal and cultural changes, the Board has a renewed focus on achieving results efficiently and relies on collaborative groups in the process.

- Clarifying the terms 'minimum' and 'target' in the Agreements Document as SWRCB staff indicated would prove helpful.

Stream Scientists Role

Bill Trush, on behalf of the Stream Scientists, framed some clarifying statements regarding the role of the Stream Scientists in relation to the Core Working Group. The Stream Scientists have drafted text regarding their role for inclusion in the Charter, which the Core Group will review at the next meeting. Stream Scientist concerns include:

- How can the group manage the SS recommendations so they are operational? Do the SS recommendations carry equal weight as Core Group recommendations?

- Is there sufficient attention to how flow recommendations will address Mono Lake level?

- How can the SS have more of a role in the Monitoring Work Group?

The SWRCB clarified that the Board will look to the Stream Scientists to interpret any Core Working Group proposed changes to the Stream Ecosystem Flows.

The Core Working Group clarified that its priority is to make the SR recommendations operational and that a daily water balance model such as eStream can provide a closer look at day-to-day operations. If the Core group identifies alternate recommendations for the SWRCB, the Core would develop these recommendations in consultation with the Stream Scientists. If the Stream Scientists do not agree, the Stream Scientists may submit its own analysis to the SWRCB.

Next Steps

The Core Working Group will provide its next update to the SWRCB in late fall or early winter. Greg Brown will continue to be the Group's primary point of contact with the Board. The Core Working Group might also want to schedule a fall workshop with the Board to educate them about this effort two new members join sometime this year.

LADWP Operations: Rush Creek and Parker & Walker Creeks

Rush Creek

At present, all water is flowing to Mono Lake and no water is being exported. Flows in all year types, except high peaks, might be feasible contingent on the effects on Grant Lake storage requirements. Mono Gate One is capable of releasing water to MGORD at flows of 380 cfs. Underground seepage in MGORD continues to present operational challenges, despite LADWP rehabilitation efforts. Key issues include:

- geomorphic and riparian implications
- flows
- fisheries
- infrastructure changes
- temperature
- floodplain "sponge"
- down cuts in bottom lands
- side channel openings

Parker & Walker Creeks

As with Rush Creek, flow adjustments to Parker and Walker are done manually. The floater/container gate system is a limitation; LADWP would have to install a Langemann gate system to withdraw specific amounts of water. LADWP is internally evaluating safety issues including dam and seismic considerations. While no facilities upgrades are planned, certain changes are likely, given the aging infrastructure (70+ years). Grant Lake is the only reservoir in LADWP's Mono Basin system that LADWP spills. Unlike other LADWP reservoirs (i.e. Tinnemaha) whose storage is restricted due to seismic concerns, Grant Lake can be operated at full storage. Key issues are:

- temperatures – providing cold water
- need to be used for Rush Creek flows
- loss of water rights on Parker & Walker

The 1707 petition process is a potential tool to alleviate concerns over the possible loss of water rights in cases where the rights-holder voluntarily bypasses flow. By dedicating water to a beneficial use through an Instream Flow Dedication, rights-holders maintain their right to the water and are granted flexibility

in accomplishing multiple water goals. In the absence of a 1707 petition, rights-holders not using the water to which they are entitled run the risk of losing their water right. A 1707 petition coupled with the bypass requirement preserves the water right and offers flexibility.

Progress on Feasibility Report Topics

The numbers following each topic are reference numbers in the *Mono Basin Feasibility Report summary table* (the "Bob Marley" chart). This table lists all the Synthesis Report recommendations with a number for easy reference.

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

The 371 cfs capacity of the outlet pipe is no longer a limitation, as MGORD has proven to work at 380 cfs. . LADWP has mapped areas of low clearance and is reinforcing them with the assistance of geotechnical staff. Remaining concerns are (1) minimal freeboard (distance between the embankment and the water levels) and (2) seepage in three areas along the channel. LADWP will report back to the group in October on its progress in resolving these concerns. At that time, the group can discuss contingency plans for emergency and other scenarios that would impact the flow into Lower Rush Creek. If resolution of these concerns allows for structural improvements, LADWP anticipates replacing the valve with a system that can be operated remotely. This measure would make the Synthesis Report recommendation of 380 cfs release feasible.

Parker & Walker Diversion Curtailment (#16)

The Synthesis Report recommends curtailing diversions on Parker & Walker Creeks in all years. This recommendation is based on temperature considerations for fish, as both creeks are important cold-water sources to Lower Rush Creek. There may be other ways to meet required temperature needs, such as changing skimming rates and times, diverting in different year types, or selecting hydrographs to address both the biological and physical factors (e.g. for Walker Creek, the recommendations are concerned about the impact of low flow on temperatures and fish habitat and the impacts of high flows on rocks and geomorphology). The Stream Scientists can run additional diversion scenarios and model the temperature regime based on these withdrawals (i.e. creating a thermograph based on the hydrographs) but will need input from the group as to the timing, duration, and amounts of proposed diversions. There may be an opportunity to divert small amounts or identify different diversion rates for different water year types.

Related considerations:

- Factors important to the bottomlands are habitat abundance and habitat productivity (i.e. temperature). A range of flows can provide good habitat. If there is no significant temperature effect, a small diversion ("skim") will likely maintain flow within the range of high habitat abundance. The Synthesis Report recommendations for Parker & Walker were limited due to operational restrictions that made it difficult for LADWP to adjust the flow on a frequent (i.e. hourly, daily) basis.

- The installation of a Langemann gate in both Parker and Walker would allow LADWP to (1) program the gate to withdraw a specific amount of water and (2) utilize one creek (i.e. Parker) for temperature controls.

- Participating State Board staff recommend considering a 1707 petition to preserve water rights on all of the creeks where LADWP has bypass flows on its releases. A 1707 petition allows the water rights holder to dedicate water for instream use while preserving the water right.

Next Steps

While open to considering potential diversion types off of Parker & Walker, the Core Group will not move forward with this right now. Once the group has prioritized and evaluated different options, the Core Working Group will make a formal request for the Stream Scientists to conduct additional analyses to support the problem solving process.

Parker & Walker Peak Flow Coordination (#17)

The Synthesis Report recommends timing peak releases for Rush Creek with peaks from Walker & Parker to maximize peak magnitude at Lower Rush Creek. According to the Stream Scientists (SS), coordination of peak flows on the creeks during a 7-day period would make it possible to increase flow from 380 cfs (current rate in MGORD) to 400 cfs, a rate critical to mobility and retention of channel morphology. Diversions could be curtailed during this period to augment the peaks. According to the SS, coordination of peak releases on Parker and Walker could compensate for upstream constraints by Southern California Edison (SCE). The SS recognize that some of the Synthesis Report recommendations cannot occur without augmentation on 380cfs; they were unable to run analysis on these due to constraints of the current operational model on the creeks.

According to LADWP, variability in the natural timing of peak flows on each creek prohibits the storage of peak flow (in Grant) for later release. Timing different – and unpredictable – flow scenarios presents significant logistical complications; managing operations for a peak when the exact timing is unknown is difficult. While there may be a way to predict the peaks through snow pillows and forecasts of warming periods (as is done on Lee Vining Creek), LADWP said that it cannot justify the resources necessary to this level of management within the greater context of Aqueduct operations. According to LADWP, having a larger outlet would impact other stakeholders (in particular, recreational operators on the Lake) and not necessarily provide opportunities to make the needed changes. One participant suggested that expanded input could afford increased flexibility for recreation.

Summary

- An enlarged outlet facility may allow for coordinating peak flow. If that is not possible, coordination of the spill with the peaks will remain a challenge.

- For periods of peak flows, daily outputs will be essential.

Winter Base flows (#27)

In determining winter base flows, the Synthesis Report (SR) recommended a range of flows to emulate natural variability in Lee Vining Creek in an unimpaired condition. The primary concern was how flows could contribute to habitat and connectivity in a creek lacking pools. As the flow moves up Lee Vining

Creek, the pools are too shallow for the fish to move. Concerns about the potential effects of icing resulted in recommended winter flows of 12-16 cfs depending on year-type. As the SR did not include in its research the downstream impacts of a 12 cfs release or how icing affects fish, uncertainty remains regarding optimal winter base flows. The only study addressing the effect of icing on fish was an August 2009 instream flow study conducted in 2008 and 2009, both years with mild winters.

The Core Working Group clarified the year-type as follows:

	Lee Vining Dry & Dry Normal	Other Year Types
Synthesis Report	16cfs	18-20cfs (in winter)
Proposed after Icing Study	Oct 1- Dec. 15 16 cfs minimum Dec. 16-March 31 12 cfs (minimum)	

Next Steps

Due to limited resources, more urgent priorities, and the marginal potential benefits to be identified, further research into this issue is a low priority for Core Working Group members. The recommended flows in Table 2-7 (Synthesis Report, p. 42) will continue to serve as the guide for the group to move forward. In the future, the Core Working Group will need to evaluate and provide guidance to the Stream Scientists regarding research priorities.

Modeling

Modeling will provide the Core Working Group with data on Grant Lake storage (daily during peaks, with levels related to temperature), Mono Lake level, and water export. The Group will rely on this data to determine whether it is possible to reach peak flows. If it is not possible, the data will demonstrate the timing as well as the reasons for the shortfall, and include operational considerations and ecosystem implications. To maintain the correlation of year-types and identify patterns over time, modeling will present the data sequentially by date.

The Modeling Work Group defines different data outputs as:

- *Run:* a single model run (e.g. 1980-2008)
- *Suite*: group of 29 runs, using the same input parameters but changing the start year (i.e. 1980 to 2008, 1981 to 2009,..., 2008 to 2036)
- *Scenario*– a set of input parameters (i.e. enlarged Grant Lake outlet)

The Modeling Work Group has refined the eStream model to address previous limitations. Version 2 of eStream allows for input of SEF peak spill requirements from Grant Lake and limits on Upper Owens River exports. Version 2 also generates *daily* data for the 29-year data set (certain years had presented only *monthly* averages). Inputs to eStream v. 2 can specify upstream creek flows (hydro), downstream

flow, target diversions and exports, and simulation; outputs include daily flows (diversions, flows, exports, and Grant Lake storage including miscellaneous losses, evaporation, and spill) as well as monthly and annual summaries.

Data Presentation Recommendations

Content

- daily data generally; specifically present daily data for Grant during peak flow operations
- annual hydrographs for downstream of Parker & Walker, Grant Lake storage, Grant Lake spill, and Rush Creek SEFs.
- table inflow from SCE to Grant Lake, as well as outflow
- graph of inflows relative to outflows (Grant Lake above, or Rush inflow)
- daily export hydrograph to determine effect on Upper Owens River (0 from April-June); Upper Owens representation by year type.
- more detail for days or periods of year that have larger impacts (i.e. peak flows, exceedences)
- shortfalls (in terms of storage, flow, temperature, timing, frequency, ecological consequences)
- exceedence (non)

Presentation

- starting elevation for Mono Lake level on each graph, assumptions, etc.
- Grant Lake elevation (daily during peak flows)
- target line on the graph
- labeling by year type
- tabular data and numerical summaries behind graphs
- statistics presented with graph – summaries of exceedences in association with the graph
- daily storages for a single model run (p. 17 Tanaka presentation): 1 graph per row with compiled exceedences;

Base Scenario

For consistency, the Modeling Work Group will continue to use the existing Synthesis Report recommendations (the simplified approach to Grant Lake with three storage levels) as the base scenario. Under this scenario, lake levels for Grant Lake are set at 11,500 acre-feet on June 30 and expected to rise to 20,000 acre-feet on July 1. A key limitation to this model is its inability to plan ahead and predict more than a day in advance. After acknowledging this base scenario, the group will move on to scenarios that present realistic options for changes in management (i.e. by selecting incremental lake-level targets). These scenarios will address the availability and feasibility of management alternatives to Grant Lake as well as consider alternatives presented by physical changes to the infrastructure.

The resulting outputs will depict the level of storage possible on a daily basis after meeting the SEFs. The model eStream relies on historical records, including data used by the Stream Scientists, Decision 98-05, previous MLC analyses, and LADWP operations records. Targets will reflect 98-05 guidance of 30-35,000 in dry/normal and normal years, and 40,000 in wet and extreme wet years (on April 1). The Mono Lake level for the base scenario will be set at the target of 6,391 feet.

Other Scenarios for Future Modeling

- Change the starting Mono Lake elevation to the existing level (will change export levels and other variables)

Next Steps

The Modeling Work Group will:

- run the base scenario
- model operational procedures to (1) address the transition from 11,500 to 20,000 acre-feet and (2) reach capacity for Grant Lake
- present a suite of options at the August 18th Core Working Group meeting, with proposals on how to handle Grant in the model considering what is physically feasible.

Future Discussion Items

- Stream Scientist analyses: reducing winter flow on Lee Vining Creek; skimming on Parker & Walker
- Stream Scientist Rush Creek "Bench" flows
- How best to involve the Stream Scientists once the modeling outputs are generated (given distance to meetings, etc.)

Special Conditions for Lee Vining Conduit Operations

(Prepared by Dave Martin, LADWP, 7/5/2011)

Fisheries Monitoring

The final sentence will be modified to "During the monitoring effort, flows will be reduced to 30 to 40 cfs if necessary to ensure that electrofishing conditions are safe."

5 Siphons Bypass

Due to biological concerns related to fish, providing specifics on how to bring the conduit back online (ramp up) after emergency gate closure would be helpful. As discussed previously, Bill Trush will investigate and report back to the Core Working Group. While the decision of when to ramp up can happen at LADWP's discretion, LADWP will provide enforceable language regarding ramping rates, per SWRCB request.

Document Review

May 17 Meeting Notes

The underlined words in the excerpt below refer to edits to the paragraph on Fall Fish Monitoring (p. 5):

> "The Synthesis Report recommends winter flows of 16cfs in dry and normal years and 18-20 cfs in other year types to avoid winter icing, although the preferred flow for winter fish holding habitat is

12 cfs. The instream flow study (August 09) indicated the maximum requirement at 12 cfs for winter fish holding habitat. Data from winter icing studies indicate that due to warmer temperatures, LADWP could reduce flows to 16 cfs from Oct 1 – Dec 15 and 12 cfs from Dec 16 – March 31 similar to the instream flow study."

Calendar Update and Future Meeting Preparation

Upcoming Work Group Meetings

Group	Date & Time	Location
Modeling	August 15th (1:00-4:30) through August 16th (8:00-12:00)	CCP, 815 S Street, Sacramento
Monitoring	August 18 (morning) 9:30-12:30	Cain Ranch

August 18 Core Working Group

1) Provide direction on how to manage Grant in the models
2) Discuss ideas for Scenarios (#19 and #30?)
3) Prioritize options from the Mono Basin Feasibility Report Summary
4) Review Meeting Notes:
    a. June 28
    b. July 13 & 14
5) Review Charter (after final input from LADWP and DFG attorneys)

Attendance

IN PERSON

For SWRCB Briefing
France Spivy-Weber, Board Vice Chair
Kathy Mrowka, Staff (Most of July 13)
Greg Brown, Staff (Most of July 13)

Meeting Participants
Gene Coufal, Los Angeles Department of Water and Power (LADWP)
Steve Parmenter, DFG
Paul Pau, LADWP
Greg Reis, MLC
Stacy Tanaka, Watercourse
Ross Taylor, Ross Taylor & Associates
Bill Trush, McBain & Trush
Lisa Cutting, Mono Lake Committee (MLC)
Mark Drew, California Trout
Bob Hughes, Dept. of Fish and Game (DFG)
Ali Karimi, LADWP
Morgan Lindsay, MLC
Dave Martin, LADWP
Geoff McQuilkin, MLC
Bruk Moges, LADWP

BY PHONE

Darren Mierau, McBain & Trush

STAFF

Facilitator Gina Bartlett, Center for Collaborative Policy (CCP)
Note-taker Hannah Murray (CCP)