NOTES | August 23, 2011

Mono Basin Core Working Group Meeting

Prepared by Center for Collaborative Policy

Core Working Group approved 10/3/2011

Meeting in Brief

The Modeling Work Group presented three alternative management options under an expanded outlet (750cfs) at Grant Lake. LADWP presented a preliminary analysis and cost estimate for three options for Grant Lake infrastructure that have the greatest potential to handle peak flows during wetter year-types. Based on these presentations, the Core Working Group authorized the Modeling Work Group to run four scenarios: base case plus three structural alternatives for Grant Lake (weir, siphon, and pipe) and to simultaneously start to focus on Mono Lake level and export. The Modeling Work Group will also experiment with designing a new rule set for the expanded outlet.

The Monitoring Work Group has started to review elements from the Feasibility Chart and is developing a proposal for an ongoing monitoring program for limnology and water fowl. The Core Working Group explored establishing a Stream Flow Work Group to address several outstanding issues related to the streams. The Core Working Group discussed a winter flow variance and options for avoiding spill.

Next Meeting: September 29, 2011, 10:00-4:00, in Bishop

Action Items

Timeframe		Action Items
underway	All	Have legal counsel review eStream licensing agreement and sign. As needed, convene legal team to discuss areas of concern.
8/14	Vorster	Determine availability of usable dataset for 1976-1979; if usable, run data.
8/31	Moges Tillemans Karimi	Review drawings and inform the Modeling Work Group at its Sept. 1 and Sept. 7 meetings about the head needed in GLR for each outlet alternative
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
9/1	Martin and Bartlett	Finalize Lee Vining special conditions text (fisheries monitoring)
9/1	Bartlett	Check with Mike Schlafmann re: role of USFS in the process and whether USFS could sign the Final Agreement.
9/1	Bartlett	Revise Charter and send to group for review. Goal is to have next version to present at the October 3 SWRCB meeting.
9/10	Martin	Draft a statement of purpose for the Streams Work Group
9/15	Parmenter	Check in with Dan Golden re: determination of SCE capacity for release

9/15	Bartlett	Post presentations for internal review: Bruk's and Dave's presentations on facilities, 8/23 diagrams, Ali's presentation
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.)
9/21	Tillemans	Ensure that Upper Owens constraints are included in the model. Highlight any needed areas of discussion.
9/22	Modeling Work Group	Investigate inflows (including timing) needed by SCE
9/22	Modeling Work Group	Run the four scenarios outlined at 8/23 meeting: base case as well as three structural alternatives. Start to focus on Mono Lake level and export as well.
9/22	Modeling Work Group	Create new rule set to model for Scenario #2?
9/26	Bartlett	Revise draft Charter and send to Kathy Mrowka for review. Request input from Kathy regarding hearings vs. workshops
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)
10/3	Coufal	Report back on seepage and minimal freeboard issues on MGORD (#9)
10/4—discuss at Core Working Group	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
done	Moges & Reis	Define parameters of what to model for SCE operations

Revisiting Scenario 1 Base Case: Achieving Stream Ecosystem Flows with Existing Facilities

At the 18 August 2011 Core Working Group (Core Group) meeting, the Modeling Work Group presented base case scenario for achieving Stream Ecosystem Flows (SEF) with existing facilities. The Group discussed this presentation and identified some additional areas of inquiry for the Modeling Work Group:

1. What flows would SCE have to deliver (and when) in order to achieve the recommended stream flows?

2. What is the timing and magnitude of the flows for reaching the Upper Owens River?

3. What level of exports can pass through the tunnel as well as in the Crowley Basin?

While the Core will include discussions of climate change in its final report to the SWRCB, it recognizes that climate change scenarios present a degree of uncertainty to the predictability of the models. The Core Group recognizes that future studies, ongoing monitoring, and adaptive management will be necessary to incorporate evolving knowledge regarding climate change impacts.

Next Steps

- Eric Tillemans will review data to ensure that Upper Owens River constraints are in the model, and will highlight areas for discussion.

- The Modeling Work Group will consider SCE inflows to determine the necessary level and timing of flows.

Grant Lake Infrastructure: Preliminary Assessment of Options

Last year, the parties met and developed a matrix of ten or so options for structural modifications to the dam at Grant Lake. From this matrix, LADWP conducted a preliminary analysis and cost estimate for three options that DWP thought had the greatest potential to handle peak flows (550 – 750 cfs) for wetter year-types (Wet-Normal, Wet, Extreme Wet):

Option	Basis	Preliminary Findings	Constraints	Cost Estimate
Spillway notch with adjustable weir: increase storage of Grant Reservoir w/ added moveable weir	15-foot-wide notch excavated in current spillway (not dam) and an adjustable weir installed at crest	Only works in Extreme-Wet years, when excavation would be minimal (10 ft, as opposed to up to 35 ft in other year-types).	Financial Operational	$10 million
Buried siphon(s): install one or more siphons to take water over/under spillway	Buried siphon along east side of spillway under current service road (more work to put siphon under spillway)	Works in Wet-Normal, Wet, and Extreme Wet years. With 380cfs in MGORD, not needed for Normal years – thus can meet all year-types. 78" pipe, 1850' length	Financial Water height: periodic inspection of valves needed due to constant flow for 5-7 days. Difficult to prime	$15 million
Buried pipe under spillway: 40 feet below spillway	Pipe installed underneath current spillway through tunneling	Works in all types of runoff years 78" pipe, 1850' length. MGORD at 380 cfs - pipe handles all other runoff	Financial	$25 - $30 million

This analysis, which was conducted prior to the eStream model, is preliminary. Scenarios are conservative and based on the lowest historic elevations (i.e. worst-case scenarios) for each year-type. LADWP acknowledges that there is much room for improvement and that eStream can provide the detail needed to arrive at more precise design specifications and solutions (i.e. use of a smaller pipe, raised intake, increased slope). Modeling could help determine when to release the flow based on elevation. According to LADWP, these three options are the only ones that merit preliminary planning consideration, and cost is a consideration for all three. Options that install a pipe through (not along) the dam are not feasible because they would compromise the structure of the dam.

Modeling Scenario 2: Expanded Outlet (750cfs)

The Modeling Work Group presented three alternative management options under an expanded outlet (750cfs) at Grant Lake: Minimum, Hybrid, and Charlie's Rules (maintaining a starting Grant Lake storage of 20,000 – 25,000 af throughout the year and aiming for 20,000 af or more during the summer months). Modeling operated under the same parameters as Scenario 1 in terms of modeling period (April 1, 1980, to 2008), Grant Lake starting storage (27,000 af) and maximum capacity (47,171 af), and Mono Lake starting elevation (6,410 ft). Scenario 2 modeling differed by (1) allowing exports all the time (Scenario 1 included periods where export was prohibited), and (2) setting the capacity of the Return Ditch and of the Grant Lake Withdrawal Structure at 750 cfs (as opposed to 380cfs). Under Scenario 2, meeting SEF peak flows was set as the priority, followed by storage in Grant Lake. Scenario 2 is the first scenario to run with a larger outlet, instead of trying to spill.

All three alternatives meet Rush Creek Peak flows. Both the Minimum and Charlie have no spill overage (as compared to 33,496 af spill under the Hybrid alternative). Under the Hybrid rule set, exports are allowed to occur, but restrictions result in times when export does not occur when Grant Lake levels are high. Due to issues with spill overage and storage under 20,000 af, the Hybrid rules do not work well for the Expanded Outlet model.

	Scenario 1 Base Case (380cfs) No export Jun15 - Jul15		**Scenario 2** Expanded Outlet (750cfs) No export restrictions		
STORAGE **(over 29 year period)**	**Hybrid**	**Reis**	**Minimum**	**Hybrid**	**Charlie**
Total Days Below 11,500 af	0 0%	0 0%	807 8%	0 0%	0 0%
Total Days Below 20,000 af (Jul 1- Sep 30)	1135 43%	0 0%	1996 75%	1136 43%	301 12%
Total Days Below Spill (in WN, W, EW years: Jun 15-Jul15)	 25%	105 1%	 N/A	 N/A	 N/A
Total Days Below Synthesis Report Min. Storage Levels	1334 13%	105 1%	2595 25%	1136 11%	307 3%

The Modeling Work Group will run additional alternatives for Scenario 2 to present to the Core Group; see following table for details. Equations for specific requirements for the different outlets will depend on

the starting Grant Lake elevation, the head needed for the outlet to work, and the intake on the pipe or siphon. Providing the Core Group with equations to use for eStream will be necessary.

Prioritizing trade-offs for each rule set will be key, and the Core Group will have to consult with the Stream Scientists to determine which priority takes precedent: meeting peak flows (SEFs) or maintaining Grant Lake storage levels to meet temperature requirements for the fishery. There may be flexibility to have different storage thresholds in different year-types. For example in a wetter year, while a Grant Lake level below 20,000 af would be out of compliance, it may not have a significant impact on temperature or result in biological effects.

Scenarios (head accounted for)	**Description**	
1 – base case	no change to existing facilities	
2 – expanded outlet	Refine Charlie's Rules	Mono Lake Levels *Inform Export*
	New rule set for outlet	
	spillway notch with weir	
	siphon	
	pipeline	

Next Steps

- LADWP engineers (Bruk, Eric, Ali) will review drawings and inform the Modeling Work Group at its Sept. 1 & Sept. 7 meetings about the head needed in GLR for each outlet alternative.
- The Modeling Work Group will run the scenarios outlined by the Core Group: base case plus three structural alternatives (weir, siphon, and pipe). It will simultaneously start to focus on Mono Lake level and export. It will also experiment with designing a new rule set for the theoretical expanded outlet. In the future, the Group will want the flexibility to start with different Mono Lake levels as well.
- LADWP will start preliminary planning drawings to provide insight to the Modeling Work Group. Drawings will incorporate the head requirements of the different Grant Lake levels.
- The Core Group may ask the Modeling Group to look at SCE inflows necessary to achieve SEFs with existing facilities

Monitoring Work Group Update

This Monitoring Work Group work will help the Core Group formalize the adaptive management program. A monitoring program measures whether management is working or if management actions are being completed. A critical goal of a monitoring program is to identify triggers for adaptive management. Some monitoring elements may require multiple years before triggering or requiring adaptive management actions.

In the past weeks, the Monitoring Group has discussed and identified next steps for four of the monitoring elements from the Feasibility Chart: Grant Lake Monitoring; Sediment Bypass on Parker & Walker (#31); Side Channel Maintenance (#33); Rush Creek Road Gage (#26). As it moves forward, the group will address termination criteria as well.

LADWP's fiscal year is July 1-June 30. As LADWP does its budget planning in the fall for the following fiscal year, the monitoring program must be planned within that timeframe. Monitoring meetings will likely continue every six months once in the fall and spring, once monitoring implementation occurs.

Next Steps

- Review the Status of Restoration Compliance (SORC) Report at Sept. 8 meeting
- Develop a monitoring program document and statement of purpose as an internal working document initially, to be presented to the Core Group once in draft form
- Continue review of monitoring elements from the Feasibility Chart. Discuss with the Stream Scientists (1) Riffle Crest Elevations and Thalweg Monitoring (#30), and (2) gains/losses and groundwater dynamics as related to peaks (Rush Creek Road Gage, #26).
- Meet with Brian White, Bob Jellison, and Debbie House to develop a new proposal for an ongoing monitoring program for limnology and water fowl.

Stream Flow Work Group Proposal

LADWP presented an updated version of the *Mono Basin Feasibility Report summary table* ("Bob Marley" chart) reorganized by topic area: Grant Lake operations, Rush Creek, Walker & Parker Creeks, Lee Vining Creek, Monitoring, and Miscellaneous. LADWP proposed the idea of establishing a Stream Flow Work Group (comprised of some Core Group members and the Stream Scientists) to resolve topics and develop recommendations for the Core Group. LADWP would like the Stream Flow Work Group to address SEFs, 5 Siphons, temperature, bench, Walker & Parker Creeks, and Lee Vining Creek. Consistent with the facilitated process to date, the Core Group must define any questions to be addressed by a Work Group.

In the absence of shared data regarding the impacts of recommended stream flows on Mono Lake levels and export, LADWP and MLC have different assumptions about these potential impacts, i.e. how it affects lake levels and exports. The Core Group will wait to evaluate SEF changes until the Modeling Work Group has developed scenarios that generate Mono Lake level and export levels so the Core Group has shared understanding about the implications of the SEFs. In the mean time, the Core Group will continue to explore options and solutions that make the stream flow recommendations feasible.

While at some point in the future the Core Group may wish to establish a separate Stream Flow Work Group to address several of the outstanding issues related to the streams, for now the Core Group will continue to decide on these issues as a group.

Next Steps

- Dave would draft a Statement of Purpose for the proposed Stream Flow Work Group.

- Gina will schedule a conference call for the Stream Flow discussions to address outstanding issues with the Stream Scientists so they are prepared to answer Core Group questions at the subsequent Core Group meeting.

- Other Work Groups include a **Legal Work Group** to address licensing and an **Engineering Work Group**. The Engineering Work Group will be considered at a future date.

Winter Flow Variance and Avoiding Spill

Winter flow considerations include ensuring that winter spills are not detrimental to the fishery and that flows are low enough for the Stream Scientists to conduct studies. The high amount of water this year presents challenges to both. Ensuring that Grant Lake can absorb any flow increase that results from SCE operations (in particular, SCE's emptying of Rush Meadows in October) is an important factor in determining spill. If LADWP is keeping Lee Vining Creek at winter base flows, keeping both Grant Reservoir and Rush Creek low, and trying to avoid spill, one of the only places left for the water is the Los Angeles Aqueduct; an existing irrigation ditch is not a practical option as it has not been maintained for over a decade.

The current winter flow variance ends October 31, and there is discussion of a new flow variance request for the winter. Greg Brown has expressed openness to a winter flow variance but is unsure about additional export for the purposes of minimizing spill.

Next Steps

- Consider the possibility of small increase in flow (primarily on Rush rather than on Lee Vining Creek) after the studies are done

- Explore potential for groundwater recharge

- Bruk contact Vince to find out about SCE planned operations

- Await response from Greg Brown re: Temporary Urgency Change (TUC) for export

- Monitoring Group follow-up on these issues after September 8 meeting (at noon)

Charter

Version 6: 8/18/2011

The purpose of the Charter is to provide clarity on the group's expectations and transparency regarding the operating rules. The most recent version of the Charter incorporates attorney review as well as clarifying edits proposed by Core members. The latest edits are underlined in the document. Highlights appear below; see draft Charter (Version 6: 8/18/2011) for comprehensive edits.

- **Goal** (p. 1) - The Group agreed to re-state the Goal as follows:

  "The goal of the facilitated process is to resolve LADWP's feasibility issues with the recommendations of the Synthesis Report. A Core Working Group will identify and consider outstanding issues, and craft recommended terms for amended licenses. The Core Working Group will attempt to reach resolution by consensus, within the

guidance of State Water Resources Control Board Decision 1631 and Water Right Orders 98-05 and 98-07. The Core Working Group will address feasibility concerns by exchanging information, developing additional analytical tools, considering alternative approaches, and drafting proposed regulatory language.

The desired product of this effort is a mutual Final Agreement that describes the terms and conditions for operation of LADWP Mono Basin facilities, with an associated monitoring program. The desired outcome is a State Water Resources Control Board order issuing an amended license which is based upon the facilitated process agreement.

Final Agreement means a comprehensive agreement that addresses all disputed and undisputed issues associated with LADWP's application to the SWRCB for an amended diversion license. As part of the Final Agreement, the Group will present an outline of alternate proposals for any issues that remain in dispute. Upon agreement, all Core Working Group organizational representatives and their counsel will sign the Final Agreement. Each organization will determine its own signatory and sign on behalf of the organization."

- **Roles and Responsibilities** (p. 1) – The Core Working Group is comprised of the settlement parties and the USFS. Gina will check with Mike Schlafmann regarding the role of USFS in the process and whether USFS could sign the Final Agreement.

- **State-Appointed Stream Scientists** (p. 2) – Core Working Group members are advised to review this section, as it has undergone extensive revision.

- **Decision-Making Guidelines** (p. 6) – If one primary representative or an organizational member disagrees with others, the organizational member will be given an opportunity to "stand aside" and let the group reach consensus. The Meeting Summaries will reflect any abstentions as well as the reasons why. Any representatives or members who stand aside will sign the Final Agreement.

- **Lack of Consensus** (p. 7) – In the event that Group members do not reach agreement on every issue, the Group will provide the SWRCB with a summary of each party's perspective and proposed alternative. This summary will be part of the Final Agreement submitted to the SWRCB by June 1, 2012. Group members will provide additional detail on any of the alternatives upon SWRCB request.

Next Steps

- Gina will speak with USFS regarding its membership in the process and with California Trout about any remaining concerns that Mark is still reviewing.

- Gina will revise the Charter and send to the Group for review, with the goal of having the next version ready to present at the SWRCB meeting in early October. Changes to date will be accepted and the underlined sections removed. Any new edits will be underlined and share with the Group.

Document Review

The Core Group made final clarifying edits to the June 28th and July 13-14th Meeting Summaries and authorized Gina to send the revised versions to the SWRCB and Lahontan Water Board for posting.

2012 Timeframe

February – Multi-day group retreat to prepare Final Agreement draft *(tentative)*

June 1 – Facilitated process concludes; Final Agreement (incl. attorney review) submitted to SWRCB

Sept 1 – LADWP submittal on feasibility of Synthesis Report

Later – All parties submit comments

Attendance

IN PERSON

Meeting Participants
Gene Coufal, Los Angeles Department of Water and Power (LADWP)
Lisa Cutting, Mono Lake Committee (MLC)
Mark Drew, California Trout
Ali Karimi, LADWP
Dave Martin, LADWP
Geoff McQuilkin, MLC
Bruk Moges, LADWP
Steve Parmenter, DFG
Paul Pau, LADWP
Eric Tillemans, LADWP

BY PHONE
Ross Taylor, Ross Taylor & Associates
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STAFF
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Note-taker Hannah Murray (CCP)