

**COLORADO RIVER BASIN SALINITY CONTROL ADVISORY COUNCIL**  
Minutes of Meeting  
**October 25, 2022**

**South Lake Tahoe, CA and Virtual**

Advisory Council Beginning Time: Wednesday, October 25, 2022, 8:30 a.m. (PDT)

**Designated Federal Officer  
Presiding:**

**Aung K. Hla  
Chairman Bill Hasencamp**

**I. Welcome, Introductions** **Hasencamp**

Chairman Bill Hasencamp called the Advisory Council Meeting to order at 8:30 a.m. and welcomed those participating in the meeting both in person and virtually. He asked if there were any in attendance who had not introduced themselves the previous day at the Forum meeting. New in attendance in the room were Aaron Wilkerson with BLM and Kurt Broderdorp with the USFWS and virtually were Erin Jordan, an Advisory Council Member from Arizona, and Paula Cutillo with BLM. A complete list of all who participated in the Advisory Council meeting is included as Appendix A.

**II. Opening Comments** **Aung**

Aung Hla welcomed everyone to the meeting and expressed his gratitude that many were able to meet in person for the first time in the past two years. There were no alternates filling in for Council Members at this meeting.

**III. Review and Approval of Draft Agenda** **Hasencamp**

There were no proposed changes to the draft agenda (see Appendix B).

**IV. Draft Minutes of 2022 Spring Council Meeting** **Hasencamp**

There were no proposed changes to the draft minutes of the 2022 Spring Council meeting. Upon motion both the draft agenda and minutes of the previous meeting were approved.

**V. Charter Renewal** **Aung**

Aung reported that the Advisory Council's charter had been approved before it expired. The charter is effective for two years.

**VI. Items from the Forum** **David Robbins**

David Robbins reported that the Colorado River Basin Salinity Control Forum was recommending two items for consideration by the Council: 1) a proposed joint letter regarding the expenditure of cost-share dollars from the Lower Colorado River Basin Development Fund, and 2) recommended Program funding levels for FY 2024.

## VII. Federal Agency Reports on 2022 Accomplishments

Chairman Hasencamp then turned to the 2022 accomplishments reports from each of the federal agencies.

### A. USGS

Tom Marston

Tom Marston reported for the USGS. A copy of his presentation is included as Appendix C. He showed an organizational chart of USGS. He indicated that David Applegate has been confirmed as USGS' Director. He indicated that he would continue to serve as USGS' salinity coordinator and that Ken Leib who has also participated with the program will diminish his role and Cory Williams will take his place. Marston indicated that USGS' role is to provide science support for the Program, and he discussed how the USGS performs this role with different areas of focus. He discussed current efforts underway by USGS. Marston reviewed the 20 Stream Gage Network which is at the heart of USGS' science support of the Program. He discussed the quality of data being gathered at each gage dividing the gages to Class A, Class B and Class C based on the quality of the data.

Marston reported on the long-term trends study in the Upper Colorado River Basin. Analysis shows that there have been declining trends in salt load which preceded the initiation of the salinity control efforts. The results of this analysis were published about two years ago. The second part of the study effort is to look at the various attributes out on the landscape and see if they are correlative with the observed trends. That work is progressing. He also reported that the sister study in the Lower Colorado River Basin is finding that there is not a similar long-term reducing trend in salinity in the tributaries in the Lower Colorado Rive Basin but rather there appears to be a cyclical pattern which is attributable to climatic drivers.

Marston also provided a report on USGS' efforts relative to the SPATIally Referenced Regression on Watershed Attributes (SPARROW) update. He indicated that SPARROW has received greater use by USGS as they are working on the integrated watershed efforts. The model creates regression equations for the various processes found on the landscape and relates them to gage data. It can be incorporated where there is limited data and used at various scales. Marston provided a little history on the development of the UCRB SPARROW model and its present update to be a dynamic model. The draft of this model should be reported out soon. There had been a SIR proposal to see if this model could be integrated with the Upper Colorado Integrated Water Availability Assessment (UCOL IWAAs). The IWAAs efforts have now picked up this effort and it will be fully funded by USGS.

Marston recognized the Program's interest in their Pah Tempe Hot Springs studies. He provided some background on the hydrogeology and past study efforts. The spring discharges at an average rate of 11 cfs at about 104 degrees Fahrenheit and 9,500 mg/L with a total annual discharge of about 100,000 tons. Marston walked the group through previous study findings relative to the future ability to capture brine as it rises in a splay in Hurricane Fault before it discharges to the Virgin River. There was a discussion of the group on what impacts a project might have on fish species downstream in the

Virgin River. A general understanding was reported that reducing the discharge of thermal waters would improve the fisheries. Marston reported on pump tests which were conducted in early 2022. The first test was conducted on just the open corroded portions of the well, the second test was conducted on just the lower portions of the well (there was essentially no difference found) and the third, longer test was conducted on the full well. Surprisingly, during the study, the most direct effect was found on the observation well which is farthest from the pumped well, indicating that there is a sub-fracture system which shows that the pumped well is directly connected with the Pah Tempe Spring system. During the pump test there was not found any mixing of thermal waters with the Virgin River. Due to a question, Marston reported that an earlier study had questioned the connectivity between Pah Tempe and the Lower Virgin River system but more recent studies have found that there is fairly full connectivity, though delayed, through the groundwater system, with lost Virgin River flows resurfacing, with Pah Tempe salts, at Littlefield Springs.

Marston then reported on USGS' efforts to develop a tool to be used in the Program to identify potential new salinity areas and identify data gaps and needs. Marston also discussed an on-going study to measure the impact of monsoonal events on salt loading. The past two years have provided good data for review and analysis.

There was a recognition of Ken Lieb's thoughtful scientific contributions to the group.

#### B. BLM

Paula Cutillo/Aaron Wilkerson

Paula Cutillo provided a presentation on BLM's efforts to the group (see Appendix D). Cutillo indicated that she would provide an overview of BLM's efforts in 2022 and future plans and then Aaron Wilkerson would provide a discussion of how salinity control is accomplished in Arizona. Cutillo discussed the magnitude of the lands managed by BLM and the economic impacts. She discussed their efforts to deal with the present megadrought. She then discussed BLM's efforts specific to the Colorado River System, including mitigating erosion, restoring degraded aquatic systems and data gathering to support these efforts.

Cutillo discussed BLM's salinity control organization including the flow of dollars from the Washington office where Cutillo works to the state offices for salinity control implementation. She discussed the role of the National Operations Center (NOC) to provide technical support for implementation of the program. The salinity coordinator position at the NOC had been vacant since September. Implementation of the salinity control is accomplished through the Aquatic Resources Program. Cutillo reviewed the funding process for implementation of salinity control activities through the creation of a Planning Target Allocations and Annual Work Plan (depending on funding) process. BLM's salinity efforts have averaged \$1.7M per year since 2015. Present funding levels are at \$2M. Cutillo then gave examples of projects which have been implemented and gave an accounting of projects by states and by activities. She then reported on projects and funding for FY2023 with about 75% of funds going to on-the-ground salinity control.

Aaron Wilkerson then addressed the group. He is BLM's Salinity Program Lead in Arizona. His presentation is also included in Appendix D. He discussed FY2022 implementation in Arizona and then discussed planned 2023 efforts. In FY2022 BLM's

Arizona state office expended at total of \$310,000 of salinity funds on salinity control efforts. These dollars were coupled with other dollars. Wilkerson discussed the three projects implemented in 2022 in Arizona (Gyp Pockets Erosion Control Project, Flat Top Dam Salinity Control Through Tamarisk Removal, and Salinity Control Structures Repair and Maintenance), the nature of each project and the projected tons of salt controlled. As part of his presentation Wilkerson discussed their development of partnerships including with the Arizona Association of Conservation Districts (AACD). He discussed their adding a salinity emphasis to the five-year Arizona Resources and Rangeland Management Program. He also discussed the significant additional funding which has been achieved by entering into partnerships.

### C. NRCS

Anders Fillerup

Anders Fillerup provided NRCS' report (see Appendix E). Fillerup provided some background on the development of the USDA salinity control program which focusses on improved irrigation systems to reduce deep percolation. Fillerup indicated that the most recent Farm Bill now allows NRCS to work with Water Management Entities.

Fillerup reviewed NRCS' organizational chart as it applies to salinity control efforts. He then reported on expenditure of dollars for salinity in the various USDA programs over the years as well as the cumulative number of acres (more than 350,000 acres) which have been treated. Fillerup discussed each project area and the number of tons controlled. Responding to a question relative to maintaining the achieved salinity control, Fillerup indicated that they do not have regulatory control but rather rely on the desire of the producers to maintain their improved system. He further explained that producers have the option of seeking funding for upgrades or replacement after the end of the project's design life. The Grand Valley Salinity Control Area has now been closed as a salinity project area, but that only means that it no longer receives targeted salinity EQIP funds, but producers can still receive regular state-wide EQIP dollars. There was a discussion that the Work Group or the Forum should potentially look at how dollars might be provided in the future to maintain or preserve the salinity control which has been achieved. Fillerup indicated that it would be helpful to the producers if they had knowledge on how they might be treated in the future. Forum members discussed the advantages of incentivizing producers to maintain their systems as well as the need to track the continued effectiveness of what has been implemented in the past. There had been a study about 15 years ago in the Uinta Basin which determined that on-farm systems were being maintained, but that does not mean that the full efficiencies are still being achieved nor does it mean that the results of the study in the Uinta Basin is applicable to other salinity project areas. There was a discussion about the potential value of maintaining salinity control with projects in high salt loading areas versus new projects in lower salt loading areas.

Fillerup then reviewed the implementation of salinity EQIP contracts in FY2022 by state and by project areas. He noted that there has been an increase in the number of cancelled or deferred projects. Much of the driver is related to the economics of the projects, potentially associated with the cost docket amounts lagging behind the increases in actual costs. In Colorado alone in FY2022, \$1.9M in projects were cancelled. Fillerup also reviewed NRCS' 3-Year Funding Plan. This document is prepared each year by the three State Conservationists and submitted to National Headquarters as their funding request.

D. EPA

Peter Monahan

Peter Monahan reported for EPA (see Appendix F). Monahan recognized that the prior week marked the 50<sup>th</sup> anniversary of the Clear Water Act. He then reviewed the EPA organizational chart. He noted that after this meeting he will retire, and Peter Ismert will take over the salinity coordinator duties. He reported on the Clean Water Act Integrated Reporting efforts and the status of approvals in each state. He also reported on the tribal water quality standards where tribes can be certified to be treated as states in adopting standards.

Monahan then discussed the states nonpoint source programs. These programs have received significant funding. He discussed the potential interrelationships between practices to reduce siltation and salinity control. He discussed examples where water bodies have been removed from the 303(d) list due to reduced sedimentation.

E. FWS

Kurt Broderdorp

Kurt Broderdorp provided a report on behalf of Creed Clayton for FWS. He reviewed the FWS' organizational chart and indicated that he will be replacing Creed Clayton in his role as salinity coordinator for the FWS. He indicated that the Salinity Control Act directs the Secretary of the Interior to replace incidental fish and wildlife values foregone associated with the implementation of salinity control projects. Broderdorp discussed the FWS' efforts to discuss a potential wildlife habitat bank in the Lower Gunnison area. He reported on site visits to wildlife replacement projects and what was and wasn't working. He also discussed FWS role on Section 7 consultation for Reclamation Basinwide Program projects as well as their role to provide input to NRCS on their wildlife replacement efforts. He provided slides showing the status of NRCS replacement efforts within salinity project areas in Colorado, Utah and Wyoming – some showing replacement ahead of their goals and others behind. A copy of the FWS' presentation is found in Appendix G.

**Recessed meeting at approximately 11:30 a.m. PDT**

**Reconvening meeting at approximately 12:30 p.m. PDT**

**VIII. Continued Federal Agency Reports on 2022 Accomplishments**

A. Reclamation

Aung

Aung provided Reclamations report (see Appendix H). He reviewed the list of those involved in the salinity control efforts for Reclamation. He highlighted accomplishments by Reclamation during FY2022. These include renewal of the charter, annual comprehensive report completion, getting the PVU up and running smoothly again, TDS modeling under the CE-Qual-W2 model, moving forward with pipe price increases under the Basinwide Program, and support of modeling for the 2023 Review. Aung emphasized the significance of the effort and importance of getting the PVU back on-line. In response to a question, Reclamation indicated that the increase in pipe prices is about 70%.

Andy Nicholas then reported on operations at Paradox. His presentation is included in Appendix I and was similar to a presentation that he had given the prior day in the Forum meeting. He provided some background on the project for those that were new to the Program as he ran through the slides which show the history of the project operations.

Robert Radtke then addressed the Council. He provided background information on the authority and the charge of Reclamation to track the water quality of the Colorado River. He showed a graph showing the Lake Powell salinity levels since 1964. He also discussed Reclamation's responsibility to publish a biennial progress report and then moved to a discussion of the water quality monitoring that they are now performing at Lake Powell. They make routine samples of various water quality parameters in the field as well as collect samples which are sent off to the lab for analysis. Radtke then discussed the various models which the water quality group runs with the data to support the various programs. In response to a question, he indicated that when high flow releases occur, it is generally with higher TDS water. Radtke's presentation is found in Appendix J.

- IX.** Reclamation's Report on Projects and Funding Melynda Roberts  
Melynda Roberts reported on the projects under Reclamation's Basinwide Program and those under the Basin States Program (see Appendix K). She indicated that the average cost effectiveness, with the recent pipe cost increases, is now at \$73.55/ton. Roberts indicated that several years ago the comparable value was in the \$57 - \$63/ton. She also reported that she is working ahead on getting the 2023 NOFO released in May/June 2023. She then provided the group with the proposed NOFO schedule. She then reviewed the details of the funding being provided under the Basin States Program and the status of the LCRBDF. In response to a question Roberts indicated that though the 2023 NOFO funding amount is not presently known, the last FOA amount was about \$35 million.
- X.** Allocation of Payments between Upper and Lower Basin Funds Hasencamp  
The Council then considered a recommendation on the cost-share split between the Upper and Lower Basin Funds. A motion passed to recommend that the split remain at 15/85, respectively.
- XI.** Letter on Management of the LCRBDF Robbins  
Dave Robbins then offered to the group a letter that the Forum had considered the previous day and which it recommends that the Council jointly sign recommending funding amounts from the LCRBDF. Upon motion the Council concurred in jointly submitting the letter with the Forum.
- XII.** Direction to the Technical Advisory Group (TAG) Hasencamp/Juricich  
Rich Juricich indicated that he did not hear any proposals during the meeting for the funding of SIR projects.
- XIII.** 2022 Advisory Council Report Hasencamp/Juricich  
Hasencamp then addressed the Program funding recommendations which Robbins had brought to the Council from the Forum. There were no questions relative to the funding levels, and therefore, upon motion, were adopted by the Council. Juricich then reported on potential subjects for the 2022 Advisory Council Report. He indicated that subjects he had heard included continuing recommendations for on-farm and off-farm salinity control

projects, continued study at Pah Tempe, ways in which to meet habitat replacement requirements, salinity control on rangelands and watershed efforts, continued science support of the Program, exploration of the life expectancy of projects and potential replacement costs, continued discussion on BLM salinity projects, use of Reclamation's tool to forecast salinities through Lake Powell, and the opportunity to review the 2023 NOFO before it is released.

- |             |   |           |
|-------------|---|-----------|
| <b>XIV.</b> | Items for the Forum<br>There were no identified items to take to the Forum. | Robbins   |
| <b>XV.</b>  | Other Business/Actions<br>There was no additional business for the group.   | Hasencamp |
| <b>XVI.</b> | Public Comment<br>No public comments were received.                         | Hasencamp |

**The meeting adjourned at approximately 2:00 pm PDT.**