Utah Lake Water Quality Study
Steering Committee Meeting #9
Meeting Summary
March 13, 2020

This document includes a list of future meetings, action items, and a brief summary of the discussions. Please review the action item list for tasks assigned to you and/or the Steering Committee in general (those are highlighted in yellow). A list of attendees can be found at the end of the document.

Upcoming Meeting/Call	When & Where	Suggested Agenda Items
SC Call #4	*May 18-22 (subject to change)*	○ Present RFPs and seek endorsement
SC Call #5	*June 22-26 (subject to change)*	○ Seek approval of selected research proposals
SC Meeting #10	*Aug/Sept*	○ TBD
SC Call #6	*Nov/Dec*	○ TBD

I. Action Items

Meeting Summaries	Who	Due Date	Date Completed
1. Share draft Meeting Summary	Facilitation Team	March 25	March 25
2. Review and share comments on summary	SC members	April 1	
3. Finalize summary and post to Dropbox	Facilitation Team	April 3	
Science Panel Technical Documents	**Who**	**Due Date**	**Date Completed**
4. Modify the Strategic Research Ideas Prioritization document per SC comments and share with SP	Mike Paul, Tetra Tech	March 18	March 18
5. Make edits to the Uncertainty Guidance document requested by the SC and share with SP and SC	Mike Paul, Tetra Tech	March 25	March 25
6. Provide update to SC on Strategic Research Plan and RFP direction following March 19/20 SP meeting	Facilitation Team	March 25	March 25
7. Review Numeric Nutrient Criteria Framework and submit comments/	Steering	April 3	

suggested edits to the Facilitation Team (and copy the SC)	Committee		
8. Develop updated version (and/or list of key issues) of the NNC Framework based on SC comments	Mike Paul, Tetra Tech	TBD	
9. Share revised NNC Framework document (and/or list of key issues) with the SP for their review and response	Facilitation Team	TBD	
10. Share materials regarding cyanobacteria cell counts as a potential numeric nutrient criteria endpoint with SC	Rich Mickelson and UDWQ	April 3	
11. Set up a conversation/discussion on key topics (e.g., cyanobacteria cell counts) at a future SC meeting	Facilitation Team	TBD	
Operating Principles	**Who**	**Due Date**	**Date Completed**
12. Incorporate edits and share updated approved SP Operating Principles	Facilitation Team	March 18	March 18
13. Incorporate edits and share updated approved SC Operating Principles	Facilitation Team	March 18	March 18
Miscellaneous	**Who**	**Due Date**	**Date Completed**
14. Share the TSSD study plan document with the SC	Facilitation Team	March 18	March 18
15. Share Algal Treatment Monitoring Plan with Chris Cline	Eric Ellis	March 20	March 20

II. Meeting Recording

A recording of the call (also available on the DWQ website in the near future) can be found at the following link:
http://resolv.adobeconnect.com/prrvn5hvi1z5/
. Please note that unfortunately only a portion of the call was successfully recorded due to technical errors. Please use the video scroll bar along the bottom of the recording window to find the appropriate time in the webinar recording for the session you would like to watch. There are bookmarks in the 'Events Index' on the left side of the screen identifying each session.

III. Key Points of Discussion

Welcome and Agenda Review

Meeting facilitator Paul De Morgan, RESOLVE, welcomed everyone to the call, provided an overview of the agenda, and confirmed the call participants. He then invited the Steering Committee co-chairs to make opening comments. Erica Gaddis, Utah Division of Water Quality, explained how the situation related to Covid-19 in Utah is unfolding and the unfortunate need to move the meeting to a web-meeting. She explained that in an effort to reduce the potential spread of the Coronavirus, the Department of Environmental Quality has prohibited their divisions from hosting meetings. Given the work the Science Panel is currently engaged in and the importance of implementing field studies related to the ULWQS in the upcoming field season, Dr. Gaddis stressed the importance of prioritizing the meeting today to keep the Steering Committee up to speed and get their input to keep the study moving. Dr. Gaddis summarized some concerns that were raised by members of the Steering Committee that they preferred to postpone and reschedule the meeting so it could be held in-person and she acknowledged that a web-meeting is not ideal. However, she suggested the Steering Committee take advantage of the opportunity to meet today and to attempt to avoid distractions and focus on the presentations and discussions.

A Steering Committee member asked whether specific components of the agenda were of higher importance and could be prioritized to shorten the web-meeting. A short discussion ensued and the items related to updates on the Science Panel technical documents to set the stage for new research projects this upcoming summer and the proposed Operating Principles' modifications were prioritized.

Mr. De Morgan then asked the members of the Steering Committee whether they had any objections to moving forward with those priorities and then checking in when those were completed. There were no objections to moving forward.

Science Panel Approved Materials: Overview and SC Approval

Dr. Mike Paul, Tetra Tech, presented an overview of the technical work products he and his team have been working on to support to the efforts of the Science Panel to work towards developing numeric nutrient criteria for Utah Lake. Dr. Paul gave an overview of the Uncertainty Guidance document, which provides guidance for quantifying and describing the uncertainty that will be associated with any of the findings of the ULWQS. A Steering Committee member asked a couple of questions related to some of the specific content in the document and requested that two edits be made to the document. Dr. Paul acknowledged the need for the edits and committed to addressing them in the document.

Mr. De Morgan asked the Steering Committee if they approved finalizing the Uncertainty Guidance document with the proposed edits, and all 15 present Steering Committee seats (either primary or alternate member) indicated their approval of the document.

Dr. Paul then gave an overview of the Numeric Nutrient Criteria Technical Framework document which provides the framework for combining lines of evidence to identify specific endpoints that support numeric nutrient criteria for Utah Lake. A couple of Steering Committee members shared comments and recommended edits to the document. Mr. De Morgan asked whether more time is needed to review the document so that all necessary edits can be identified before the Steering Committee can potentially approve it. An action item was developed for the Steering Committee to provide any additional

comments or suggested edits in the next three weeks. The group agreed that after sharing the comments, the Science Panel should review a revised version of the Framework and share an updated version and/or comments with the Steering Committee.

A member of the Steering Committee expressed their objection to using cyanobacteria cell counts as metric for numeric nutrient criteria endpoints. Dr. Paul responded that cell counts had only been included in the Framework document as a generic example but stated that the document could be modified if requested by the Steering Committee. A Steering Committee member suggested the Science Panel provide a list of the potential endpoints associated with numeric nutrient criteria to the Steering Committee for discussion. The group requested that the Framework be reworked to address the concerns and to engage the Science Panel in a discussion about the comments before bringing something back to the Steering Committee.

Dr. Paul described the ongoing efforts to develop a strategic research plan and presented the Science Panel ranking of strategic research ideas developed over the past few months. He explained that the top four, or so, research ideas will likely guide the development of research studies to be implemented in the upcoming field season. A couple of questions and comments were made by Steering Committee members that led to a suggested edit to the prioritization ranking document (i.e., including atmospheric deposition explicitly as a component of the top-ranked research idea to quantify internal vs. external loading to Utah Lake). Mr. De Morgan asked whether the Steering Committee could support approving the finalization of the document with the suggested edit. Thirteen of the 14 Steering Committee seats present voted to finalize the document (with the edit), one of the participants chose to abstain from the vote (one seat was not on the call during this discussion). At the end of the session the Steering Committee requested that the Science Panel (looking to Dr. Paul and the Facilitation Team to convey the request) provide an update on the efforts to develop RFPs after the upcoming Science Panel meeting.

Proposed Changes to the Utah Lake Water Quality Study Process

Science Panel Operating Principles: Eric Ellis, Utah Lake Commission, explained that the co-chairs received input from legislators and interest groups regarding the need to ensure local science panelists' opinions are heard in Science Panel discussions and decision-making. He explained that the co-chairs are suggesting some minor edits to the Science Panel Operating Principles to clarify that all members of the Science Panel should participate in voting for all Science Panel decisions except for those related to contracting (and in those instances when a panelist may need to recuse themselves due to content of the decision). After a Steering Committee member requested more background information on why this edit was being proposed, Mr. Ellis explained that during a Utah Lake Commission meeting the concern was raised that Science Panel decisions were being weighted more heavily with out of state, independent members of the Science Panel. He continued to explain that there is a desire to harness the local expertise in the Science Panel. It was noted that in practice thus far the Science Panel discussions and decisions, for the most part, had been structured this way already though not formally.

Mr. De Morgan asked the Steering Committee whether they approve of the edits to the Operating Principles, and unanimous support was expressed by 13 Steering Committee seats (two seats were not on the call during this discussion).

Steering Committee Operating Principles: Dr. Gaddis explained that the co-chairs are suggesting a single edit to the Steering Committee Operating Principles to address a concern that came out of conversations with Utah County legislators over the past few months. She indicated one state

representative expressed concern that the ULWQS process does not provide for independent review of the Science Panel's work. While the Science Panel was convened in a way that involves objective scientists without a vested interest in the outcome of the ULWQS, the co-chairs indicated it would be best to make this edit to address the legislator's concern and a relatively simple fix is already available. Dr. Gaddis explained that under the updated Operating Principles, if an interested party felt there was a need for an independent review of a specific work product of the Science Panel, the process outlined in 19-5-105.3 and implementing rules R317-1-10 could be utilized. In short, the process and rules would allow for three independent reviewers; one to be chosen by the challenging party, one to be chosen by DWQ, and a third to be mutually agreed upon by the challenging party and DWQ. Dr. Gaddis explained that in most cases the challenging party would be responsible for paying for the review process and if there were agreement between two of the three reviewers, the findings would be included in the administrative record of the study.

Mr. De Morgan asked the Steering Committee to vote on whether to approve the revision to the Operating Principles and 14 of the 15 seats voted to approve and one member abstained.

Report on Budget Related Activities

Dr. Gaddis provided an update on the ULWQS budget and funding opportunities, following up on the conversation initiated at the last Steering Committee meeting in December. She explained that coming out of the meeting DWQ has been consulting with the EPA and discussing several potential options for funding. Dr. Gaddis described one specific funding opportunity that could potentially be a good fit for smaller project funding needs that are granted under a competitive process nationally. She explained that the EPA would have control of managing the project and contractor.

With regards to the overall project budget and potential short-term funding needs, Dr. Gaddis stated that DWQ will have a better sense once the next round of research studies has been identified with projected costs.

Dr. Gaddis explained that the legislature re-appropriated funding that had been allocated for HABs monitoring by DWQ to support ecosystems projects on Utah Lake. This funding ($200,000) is to be provided annually and will be routed through and managed by the Utah Division of Forestry, Fire, and State Lands. This year's funding has been allocated to support the study that the Timpanogos Special Service District (TSSD) is working on to utilize limnocorrals to explore research questions in Utah Lake. Rich Mickelson, TSSD, provided some more detail and background on the study they are pursing. Mr. De Morgan went over the history of interactions between TSSD and the Science Panel in discussing the potential study and the involvement of the Science Panel. He explained that the present plan is for TSSD to be in the lead on the project but for the Science Panel to collaborate (similar to the collaboration with the Wasatch Front Water Quality Council (WFWQC) on atmospheric deposition work which is described below) by reviewing and providing input on the study plan, RFQs, potential researchers, and the final study design, as well as through updates and discussions as the study is implemented.

Members of the Steering Committee expressed some concern that the Steering Committee has not been kept informed of these study plans and the involvement of the Science Panel. Mr. De Morgan explained that this meeting was the first opportunity to present an update to the Steering Committee. At the conclusion of the discussion, it was determined that, when the RFPs (to be developed by the Science Panel) are presented to the Steering Committee (likely in April), updates on the TSSD study as

well as the atmospheric deposition study should be provided along with context for how they will assist with addressing the Initial Charge questions.

Update on Utah Lake Algal Treatment RFPs

Eric Ellis explained that they are moving ahead with two experimental algal treatments this summer, in Lincoln and Lindon Marinas. He explained the treatments involve application of solutions containing copper. Some questions were raised related to monitoring of the potential effects of the treatments on the biology of the lake beyond harmful algal species. Dr. Gaddis suggested that they would appreciate input from other agency personnel in reviewing and further developing the monitoring plan. She also explained that these are pilot studies and if any of the treatments were to be implemented on a larger scale in the lake that they would have to apply for a pesticide discharge permit from DWQ. Chris Kline, USFWS agreed to review and Mr. Ellis agreed to share the monitoring plan with USFWS.

Update on Other Science Panel-Related Activities

Dr. Mitch Hogsett provided updates on the three near-term research projects prioritized by the Science Panel, and approved by the Steering Committee, in spring 2019. He explained that the sediment-nutrients study has been completed and that the Science Panel recently received a draft version of the final report for their review. Dr. Hogsett went over the methodology of the sediments study and explained the types of nutrient flux estimates the report provides.

Dr. Hogsett indicated the bioassay study is moving along and that the team still has two more sampling events before the study is to be completed by the end of 2020. He explained that some of the data generated by the study may compliment the data provided by the sediments study. He also mentioned that the bioassay study team recently provided an interim report for Science Panel review.

Dr. Hogsett briefly mentioned that the paleolimnology study continues to move along and that the final report is expected in early 2021. He explained that many of the analyses associated with the sediment cores that were collected for the study are currently being completed by analytical laboratories.

Dr. Hogsett also provided an update on the efforts to estimate atmospheric deposition of nutrients to Utah Lake. He explained that the WFWQC has been working on a sampling plan to measure atmospheric deposition of nutrients near Utah Lake and that the updated draft plan was submitted within the last day. Dr. Hogsett clarified that the plan is to be submitted to the Science Panel for review, but it was initially expected in mid-February and the delay may not allow the Science Panel to review and comment on the plan before or during their upcoming meeting on March 19 and 20. He explained that the WFWQC is preparing to install a National Atmospheric Deposition Program site on Utah Lake.

IV. Public Comments

No formal public comments were made at the end of the meeting however some were added in the Adobe Connect chat box. These follow along with comments made by the Steering Committee in response:

- David Richards: I think the Steering Committee and Concerned Public would like a brief update from DWQ on algal bloom status in the lake in 2019 and how it related to earlier years and any ideas why it may have been different.

RESPONSE: UDWQ is definitely willing to provide an update at an upcoming meeting.

- Dr. David Richards: I thought I heard DWQ state earlier in this meeting that research findings on atmospheric deposition by qualified scientists could not be used in Utah Lake models/criteria development unless approved by UL science panel/Steering Committee. Please clarify.

RESPONSE: Dr. Gaddis indicated that UDWQ's interest is in having all studies related to the Study conducted in a manner that is reviewed by the Science Panel and considered in any recommendations they make to the Steering Committee. Mr. De Morgan reiterated the current Science Panel approach to address the Initial Charge questions posed by the Steering Committee. Specifically, the Science Panel is working to develop RFPs (which are approved by the Steering Committee) and then assessing the studies as they are implemented. The Panelists work closely with the scientists on the study design, preliminary results, and the final reports. In addition, the Panel has had an opportunity to work with other partners (e.g., WFWQC and TSSD) to take advantage of and build on those entities' efforts to obtain information. However, for the Science Panel to ensure the results are adding value to their efforts to address the questions, they want to be engaged in the development of the studies, at least through review and comment, and ongoing implementation (similar to the how they engage on the studies done in response to the RFPs); though the Science Panel is not approving the other studies. In closing it was noted that no one is saying qualified scientists cannot submit information for Science Panel consideration but if the studies are not implemented in a way that the Science Panel believes will assist in answering the questions, then the results may be of less value to them at the conclusion.

- Dr. David Richards: how does it effect native mollusks?

- Dr. David Richards: how about june suckers?

- Renn Lambert: What if there are no blooms in the marinas this summer? Can they move the demo to another location?

RESPONSE: In response to the question from Renn Lambert, Mr. Ellis explained that they selected two marinas that almost without question have blooms each year, so they are not planning a contingency where we move the treatments to a different location. No response was directly provided to the two comments from Dr. Richards though Mr. Ellis noted during the Update on Utah Lake Algal Treatment RFPs that these were pilot projects and a lot was still to be learned.

V. Wrap Up

Mr. De Morgan concluded the meeting by thanking the Steering Committee for their participation and praised the quality of their participation in what ended up being a very productive and engaging meeting. He explained that the Facilitation Team had sent out a draft meeting schedule for 2020 that included several Steering Committee conference calls, but that it would likely make sense to revisit the schedule based on the feedback that was received indicating that in-person meetings are preferred over conference calls. Mr. De Morgan suggested that additional feedback from the Steering Committee would be helpful. He also noted that the current Covid-19 situation could impact the flexibility and asked the group for their understanding as the Co-chairs strive to help meet everyone's interests.

VI. Participation

Members of the Steering Committee:

- Scott Bird, Utah County Stormwater Association – Stormwater
- Craig Bostock, Utah County Health Department, Public Health (alternate to Jason Garrett)
- Gary Calder, Provo City – Municipal
- Chris Cline, US Fish and Wildlife Service – Fish and Wildlife (alternate to George Weekley)
- Eric Ellis, Utah Lake Commission – Co-Chair
- Erica Gaddis, Utah Division of Water Quality – Co-Chair
- Heidi Hoven, National Audubon Society – Conservation and Environment
- Chris Keleher, Utah Department of Natural Resources – Recreation, Fishing, and Sovereign Lands
- Rich Mickelson, Timpanogos Special Service District – POTW
- Jay Olsen, Utah Department of Agriculture and Food – Agriculture
- Cory Pierce, Spanish Fork City – Municipal (alternate to Gary Calder – participated when Gary left call)
- Mike Rau, Central Utah Water Conservancy District – Water Management of Utah Lake (alternate to Gerard Yates)
- Dennis Shiozawa, Brigham Young University – Academia
- Brad Stapley, Springville City – Municipal
- Jesse Stewart, Utah Lake Water Users Association – Ag/Water Rights/Water Users

Alternate Members of the Steering Committee:

- David Barlow, Timpanogos Special Service District – POTW
- Jon Hilbert, Jordan Valley Water Conservancy District - Ag/Water Rights/Water Users

Members of the ULWQS Science Panel

- Mitch Hogsett, Forsgren Associates, ULWQS Science Panel (Chair)
- Theron Miller, Wasatch Front Water Quality Council
- Mike Mills, June Sucker Recovery Program/Central Utah Water Conservancy District

Members of the Public:

- Jeff Denblyker, Jacobs
- Renn Lambert, LimnoTech (Adobe Connect)
- David Richards, Oreo Helix Ecological

Environmental Protection Agency

- Tina Laidlaw
- George Parris

Utah Division of Water Quality Staff:

- Scott Daly
- Jodi Gardberg
- Jim Harris

Facilitation Team:

- Paul De Morgan, RESOLVE
- Dave Epstein, SWCA