Joint Groundwater Work Group + Habitat Work Group Meeting

(Subgroups of the Owens Lake Master Project Advisory Committee)

Summary of Core Discussions | February 4, 2021

Prepared by the CSUS Consensus and Collaboration Program

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INTRODUCTION

On Thursday, February 4, 2021, the Groundwater and Habitat Work Groups—subgroups of the Advisory Committee related to the proposed Owens Lake Master Project—met remotely via Zoom for three hours to undertake the following objectives:

1. Receive updates on various efforts, conducted or planned since the October 2019 Groundwater Work Group (GWG) meeting.
2. Provide opportunity for GWG and Habitat Work Group (HWG) members to offer feedback, provide recommendations, and ask clarifying questions related to the projects and planned efforts.
3. Discuss related work as needed and identify key topics for further discussion.

Agenda items covered included:

- Opening remarks;
- An overview of planned operational testing of testing wells TW-East;
- An update on Vegetated Dune Areas (VDA) evaluation;
- An update on the Hydrogeologic Conceptual Model of Owens Lake;
- An update on preparation of the Owens Valley Groundwater Authority (OVGA) Groundwater Sustainability Plan;
- An overview of the Phase 1 Existing Infrastructure Improvement Project; and
- A review of next steps.

The structure of this summary corresponds to those eight items. The meeting was facilitated by Meagan Wylie, California State University, Sacramento, Consensus and Collaboration Program.

OPENING REMARKS

Meagan Wylie, facilitator, welcomed participants to the meeting, noting that the GWG had not met since October 2019, due to the Covid-19 pandemic. Ms. Wylie reviewed the purpose and agenda of the meeting (see meeting objectives and agenda items above) and shared ground rules for the remote meeting. For a list of participants, see Attachment 2.

GWG Co-Chairs Dr. Aaron Steinwand, Inyo County Water Department, and Dr. Saeed Jorat, Los LADWP, and HWG Co-Chairs Jeff Nordin, LADWP, and Pete Pumphrey, Eastern Sierra Audubon Society, welcomed participants. Dr. Jorat and Dr. Steinwand offered a remembrance of Earl Wilson, an active GWG member who passed away in November 2019.

Mr. Pumphrey noted that the Owens Lake Scientific Advisory Panel (OLSAP) released a report in 2020 including many suggestions that the HWG will consider during future meetings. The report can be accessed online here: https://www.nap.edu/read/25658/chapter/1.

Nelson Mejia, LADWP Owens Lake Dust Mitigation Program Manager, said that LADWP had received a letter from the Audubon Society related to the OLSAP report. LADWP agrees that the OLSAP should be reconvened to continue to exchange ideas. Mr. Mejia recommends the OLSAP be included as an agenda item for an HWG or joint GWG + HWG meeting, as well as a presentation from operators at the lake, and suggests that efforts be made to convene the work groups more frequently.

Mr. Jorat gave a high-level overview of LADWP activities at Owens Lake since the last meeting, noting that many of the meeting's agenda items relate directly to these activities:

- Submitted quarterly reports on consolidated hydrologic monitoring to the California State Lands Commission (CSLC)
- Prepared a revised testing plan for an operational test of TW-E
    - Responded to comments received
    - Prepared an update testing plan
- Started VDA evaluation
- Updated the Owens Lake groundwater model
- Updating the Owens Lake Conceptual Hydrogeologic Model
- Planning for CEQA documentation to complete an application to CSLC for operational testing of TW-E
- Continued evaluation of water banking in and around Owens Lake

Mr. Jorat said that overall, work had been somewhat delayed due to Covid-19. Mr. Jorat also noted that water banking, if implemented, would only be done in instances of excess water supply after all water commitments on Owens Valley have been met. More detailed water banking plans will be provided in the future.

OVERVIEW OF PLANNED OPERATIONAL TESTING OF TESTING WELL TW-E

PRESENTATION

Chuck Holloway, LADWP, and Victor Harris, consultant from Stantec, reviewed background on the CEQA process and rationale for the revised scope of work related to the planned operational testing, then presented the testing plan and next steps. Additional details are available at www.ladwp.com/olg.

LADWP conducted an Initial Study environmental review and prepared a Negative Declaration, which is slated for release for public review by the end of February 2021[1]. There will be a 30-day public review process for the Negative Declaration, during which interested agencies, Tribes, and others are encouraged to submit comments. Following the public review, the document will be taken to the LADWP Board in May 2021.

In December 2020, LADWP sent invitations for consultation to eight tribes in the area. LADWP is in the process of scheduling consultations with the Lone Pine Paiute Shoshone Tribe and the Big Pine Paiute Tribe. Any interested Tribe can reach out to LADWP staff James Howe, Jane Hauptman, or Chuck Holloway for additional information or scheduling purposes.

Mr. Harris reviewed the proposal for the six-month testing plan. The Owens Lake Groundwater Development Program (OLGDP) is an integral part of the Owens Lake Master Project. It builds on groundwater studies at the Lake which began in the 1990s. Since 2009, the groundwater studies have been more intensive, including groundwater modeling and extensive monitoring infrastructure. Key aspects of the OLGDP include, ensuring protection of groundwater-dependent resources, and utilizing an adaptive management strategy. The OLGDP is still in its first phase of collecting baseline data and conducting environmental permitting.

The purpose of exploring groundwater is to supplement, not replace, surface water supplies for dust mitigation, providing reliability, redundancy, and operational flexibility. It would also align with LADWP's statewide water supply perspective to conserve water and reduce deliveries from the Bay Delta and Colorado River.

The current proposal is to pump testing well TW-East (TW-E) for six months at a rate of three cubic feet per second, beginning in September 2021. The water would not be used for export, but would be discharged to adjacent ponds. Extensive monitoring would continue before, during, and after the test. The monitoring would be more frequent than normal but would utilize existing monitoring facilities.

The six-month test is proposed to supplement the information gathered during previous testing. TW-E was chosen because its depth and location are ideal to observe effects of faults. The test

[1] The Neg-Dec was posted on 02/25/2021 to the State's website here: https://ceqanet.opr.ca.gov/2021020397. Please note the review period end date of 03/25/2021.

will mimic the season and timing of potential use of groundwater. The testing will improve understanding of the effect of faults on groundwater flow and deeper aquifer characteristics, resolve data gaps associated with faults, improve conceptual and numerical (computer) models, and assist in developing more robust measures to protect groundwater-dependent resources and avoid adverse conditions such as land subsidence.

Extensive monitoring will be carried out during the pumping test, including water levels in pumping and monitoring wells, surface water flow measurements in flumes, meteorological sites, ground elevation sites, groundwater quality sites and constituents, and before and after vegetation monitoring. Mr. Harris shared maps of the monitoring locations including primary wells where the pumping effects are more likely to be seen, secondary wells where impacts are unlikely but which will be routinely monitored, and flume and meteorological sites. He also shared information on the proposed frequency of monitoring at the various sites and the data download and public reporting intervals for the monitoring data. Data from 24 trigger wells will be downloaded and compiled after 24 and 72 hours, then weekly thereafter for the duration of the pumping test. Data from 91 primary monitoring wells will be downloaded at 1, 3, 5, 8, 11, 14, 17, 20, 23, 26 weeks after the start of the pumping test.

Downloaded data will be available to the public within 10 business days via the OLGDP website or email. Any adverse trends that appear to be leading toward a "trigger value" will be reported when they are observed. Management actions based on adverse trends will include increasing the monitoring frequency and/or decreasing the pumping rate at TW-E.

Mr. Harris explained that the groundwater model was used to plan the test such that its impacts will not reach a trigger value. The model was used to define the area of influence, simulate effect of pumping, and assist in development of the monitoring plan. Triggers are set to protect the environment by ensuring that adverse conditions do not occur. Triggers are set by estimating the point at which an adverse condition will occur, ensuring appropriate monitoring facilities are in place, and setting a limit which is much more conservative than would cause an adverse condition. If any trigger is reached, the operational test is stopped. Mr. Harris shared an example trigger related to preventing impacts to non-LADWP wells, showing the pre-pumping groundwater level, the estimated groundwater level that would cause a significant impact, and the conservative trigger at which the test would be stopped to ensure that well owners' supplies are not affected. To monitor for the trigger condition, LADWP wells located between the TW-E and the non-LADWP wells are monitored.

Mr. Harris said that it is challenging to measure the flow of springs and seeps; groundwater modeling shows that their flow is related to the vertical and horizontal groundwater gradients. Trigger levels are designed to maintain spring flow at all times, with drawdown based on the historical range of variation.

For VDAs, the trigger level is based largely on a review of literature and was set at a conservative level of one foot of drawdown. New monitoring wells at the VDAs will be used to monitor for this trigger. Ongoing studies are in progress to develop more robust protection protocols.

The monitoring data will be used for graphical analysis, for example hydrographs and contour maps, as well as to calculate aquifer parameters using specialized software. These parameters are used in groundwater model calibration so that the model can simulate the results of various conditions. Spatial analysis will also be carried out where response is measurable.

Resources will be protected during testing using a short, finite period of operation, conducting a pre-test simulation with groundwater modeling, conducting extensive and comprehensive monitoring, using conservative triggers to protect groundwater dependent resources, and running the test during the dormant winter season.

DISCUSSION

Questions and responses are summarized below:

Will the negative declaration quantify absolute triggers in the shallow areas near springs and seeps?

Yes, absolute triggers will be used for shallow wells on the East and West side of the lake, based on the historical range of variation. These trigger levels will be finalized in the weeks prior to the test and will be reviewed by responsible agencies like the Inyo County Water Department.

Are all triggers hard stops that would discontinue the pumping test?

Yes, the test will stop if a trigger for any of the resources is hit, provided it is not an incorrect measurement.

How will areas with no clear spring source, such as the shallow ponds used by snowy plovers around the lakeshore seep areas, be monitored?

In many cases there are no discrete spring sources, but rather widespread areas of saturated ground. These will be monitored using groundwater gradients, not just depth to water, as these flows are the result of both vertical and horizontal gradients.

Has LADWP considered monitoring the extent of key snowy plover ponds? There are a few sites where large numbers of snowy plovers congregate, and this is a species whose target population LADWP must maintain.

That kind of monitoring is not currently included in the plan, but it could be added if there is a way to quantify this.

Will there be monitoring up-slope from the seeps and ponds in order to protect them?

Yes, the gradient monitoring will achieve this.

UPDATE ON VEGETATED DUNE AREAS EVALUATION

PRESENTATION

Jim Richards, consultant from Formation Environmental, gave a presentation and high-level update on Phase 1 data collection and analysis, which is using field and remote sensing work to better understand the dependence of VDAs on groundwater levels.

The objective of the evaluation is to develop, through collaboration, a Resource Protection Protocol (RPP) to protect VDAs from potential impacts due to groundwater pumping. Development of the RPP begins with defining appropriate resource protection criteria and monitoring parameters, then developing a tiered management approach with management triggers. The trigger tiers include early warning, management, and stop pumping.

The effort is currently in Phase 1, which includes historical baseline data development on all VDAs, detailed data collection, characterization, and monitoring on specific VDAs, and conceptual model development. Phase 2 will focus on development of the RPP based on Phase 1 results.

Mr. Richards shared a map showing the locations of the 15 VDAs, a detailed view of VDA 11 illustrating the relationship of the VDAs to geomorphic features such as historic shorelines, and a photo of VDAs 08 and 09 showing shoreline berm and vegetative cover.

Mr. Richards reviewed the workplan timeline for Phase 1. The historical baseline was completed in 2020, as well as the majority of the detailed characterization of the VDAs; additional water sampling and final data analysis are still in progress.

The historical baseline development for the 15 VDAs looked at vegetation cover based on transects, LiDAR, and imagery, as well as leaf area index and evapotranspiration based on Landsat data. The area covered by the data was divided into five zones; the main VDAs are within Zone 3 and Zones 1-4 were included in the subsequent analysis. The data was analyzed to determine drivers of cover variability and early warning triggers, through statistical analysis on variability across VDAs, transects, zones, and years. The analysis looked at the statistical relationships of cover across the VDAs to precipitation, runoff, groundwater, and other factors.

Detailed data collection was carried out in 2020, using both LiDAR and field data. The latter included vegetation sampling, soil borings, groundwater, soil profile logs in cuts, and soil geophysics. All these data inform the conceptual model; additional information is needed to refine the model and better understand how roots penetrate the surface. Preliminary findings of the field studies include:

- Root distribution and groundwater depth: the majority of roots are in the high portion of the profile, with some deeper in the capillary fringe zone adjacent to groundwater. Roots can penetrate down to 20 feet deep, with an expected exponential relationship as one moves shallower;

- Soil salinity: groundwater quality remains fairly good. There is an increase in soil salinity intermediate depths that suggest a leeching or accumulation of the salts over a long period in the areas above the groundwater level; and
- Soil moisture by depth: the unsaturated zone remained very moist despite the field work taking place in late summer, with available water estimated at an average of 2.35 acre-feet per acre of water stored in soil within a 3- to 17-foot depth interval, or a soil moisture buffer approximately seven times the annual precipitation available in the VDAs.

Remaining Phase 1 activities include:

- Integrating the data to establish the historical baseline
    - Complete statistical analysis of historical cover variability
    - Complete drivers of cover variability
    - Complete 2020 LiDAR and Imagery Analysis for individual shrubs and shrub characteristics
- Detailed analysis and development of the conceptual model
    - Integrate field data, borelogs, hydrographs, water quality, and geophysical data spatially
    - Complete remaining data analysis to support conceptual model development

Following completion of Phase 1, the RPP criteria, monitoring, and tiers will be developed, to ensure protection of the VDA resource and ensure that groundwater pumping activities do not have adverse impacts on it.

DISCUSSION

Questions and responses are summarized below:

For the six-month TW-E pump test, the VDA trigger has been proposed at one foot of drawdown. Based on current knowledge about the VDAs from the evaluation thus far and the literature, how protective will the proposed one-foot drawdown trigger be?

Based on analysis of published literature on sarcobatus in California and neighboring states, as well as long-term analysis of the VDAs at Owens Lake, a change of one foot is well within the natural variation experienced at these dunes, which commonly see a variation of one to three feet annually.

Would a one-foot drawdown impact be additional to the natural fluctuation processes?

The pump test is scheduled for winter, a time when groundwater level is typically static or increasing; therefore, if a one-foot decline is seen during the pump test, this would trigger a hard stop of the pumping.

Feedback regarding setting triggers for the VDAs:

- Triggers should account for the background trend, for example if there is an upward trend then the trigger might be set at the current water level, because that would indicate that the drawdown has stopped the upward trend. This kind of trigger needs to be set just before the test.

UPDATES ON HYDROGEOLOGIC CONCEPTUAL MODEL OF OWENS LAKE

PRESENTATION

Eric Vogler, consultant from Stantec, gave updates on the evolution of the hydrogeologic conceptual model and the numerical model of groundwater at Owens Lake.

Mr. Vogler said that as part of an adaptive management approach, new data continues to be acquired and incorporated into the conceptual and numerical models, including remote sensing evapotranspiration data, new well data, and recent publications and technical reports. He shared a timeline of the different projects and studies that have contributed to the models and the adaptive management timeline; the most recent update of model was done in 2020.

The 2020 update included the following:

- Incorporated Testing Wells TW-E and TW-W
- Simulated short duration tests of testing wells
- Utilized new monitoring wells for stratigraphy and calibration
- Reduced stress period length to two months
- Simulated seasonal variability in shallow aquifer
- Modified southern boundary

A group of experts, including Aqua Geo Frameworks, Lettis Consultants International, and GSI Environmental, are collaborating on the model by providing independent review, information sharing, workshops, discussion, and recommendations.

Mr. Vogler shared a map showing the four focus areas of the models: the northwest area, Lone Pine area, northeast area, and Haiwee Dam/Southern area.

With new well data available, airborne electromagnetic data is being reinterpreted. There is low resistivity in silt and clay areas but high resistivity in bedrock and low-saturation zones. As a result of this new well data, the possible bedrock surface is being reinterpreted, with more bedrock and thinner alluvium, and the Owens Valley Fault Zones are being reconceptualized and simulated. Additionally, in the Haiwee Dam/Southern area, the Coso formation was found to be shallower than previously thought, which impacts understanding of the channel and how it opens onto the lake. The conceptual and numerical models will be revised accordingly.

Actual evapotranspiration (ETa) data is available monthly from January 1985 to December 2019 at a 30-meter resolution, providing previously unavailable spatial data. This data is currently being used in the Bishop/Laws Model pilot study and will be used in Owens Lake modeling. This information provides a check on the model and helps improve the water budget by allowing for direct calculation of groundwater loss. It also presents insights into groundwater dependent areas and will help show how the model responds to the long-term pump test.

DISCUSSION

Questions and responses are summarized below:

The portion of the model in the northwest corner of the lake appears to be off of the lakebed. Is it being investigated in order to refine the model or is it related to the possible water banking?
It could be applicable to both. It is important for enhancing the overall model given how many fault lines there are in that area, and any potential banking would use the model to determine conditions. The budget needs to be tightened to better understand how water enters, leaves, and interacts with the system, and the faults are particularly important.

In addition to the presentation slides, will a summary memo on the model updates be provided? What is the next step with the new data?
The new interpretation will be summarized and shared in the next few months. Similar to other technical memos and reports from other studies, a draft report will be posted on the OLGDP website, experts will respond, and the final report will be prepared and posted on the website as well.

Per the Long-Term Water Agreement, there is no excess water in the Owens Valley, as any flood waters must recharge the Valley.
The water agreement recognizes the potential of groundwater storage and banking. In order to move forward, it will go through the technical group and approval process by the Inyo County Board of Supervisors and the LADWP Board of Commissioners.

UPDATE ON OVGA GROUNDWATER SUSTAINABILITY PLAN PREPARATION

PRESENTATION

Dr. Steinwand gave an update on Owens Valley Groundwater Authority's (OVGA) preparation of a Groundwater Sustainability Plan (GSP). At the time of the last GWG meeting, the status of the Owens Valley Basin under the Sustainable Groundwater Management Act (SGMA) was not yet determined. The Department of Water Resources has since reclassified the basin a low priority; under this designation, the Basin is not required to submit a GSP. However, OVGA has directed its staff to proceed with GSP development.

SGMA does not apply to adjudicated areas, including the lands managed pursuant to the long-term water agreement (LTWA). The related dispute between Inyo County and Los Angeles has not changed and remains on hold at this time. Additionally, State agencies are not subject to SGMA but they are required to consider GSPs as part of their regulatory and land management responsibilities. Pumping at Owens Lake could be subject to regulation by a GSP unless it is managed pursuant to the LTWA. Additionally, compliance with an adopted GSP could become part of CSLC's lease requirements. As per grant funding requirements, OVGA is proceeding with GSP development assuming that the GSP will apply to Owens Lake.

Dr. Steinwand shared a map showing the three proposed management areas under the GSP, including Fish Slough and Tri-Valley, Owens Valley, and Owens Lake, as well as the areas that are not covered by the GSP.

SGMA requires that GSPs manage groundwater to avoid undesirable results related to six indicators:

- Lowering of groundwater levels
- Reduction of groundwater storage
- Seawater intrusion
- Degraded water quality
- Land subsidence
- Depletion of interconnected surface water

Seawater intrusion is not relevant to the OVGA GSP. Dr. Steinwand noted that enforcement related to water quality is still the responsibility of the Regional Water Quality Control Board; the GSA will follow current regulations and may hold related data.

In developing the GSP, OVGA must establish the undesirable results by defining significant and unreasonable effects related to each of the indicators above. OVGA must obtain public input on these definitions. OVGA is working to gather data, choose representative monitoring locations, and suggest draft undesirable results and significant and unreasonable effects, then will gather public feedback on the suggestions.

The undesirable results are quantified as sustainable management criteria (SMCs): a minimum threshold, which defines the point at which undesirable results occur, and a measurable objective, which is the goal for groundwater conditions. During implementation, progress will be monitored against these measures of sustainability.

Dr. Steinwand shared the staff-proposed SMCs for each of the four indicators being addressed by the GSP; he noted that these are staff suggestions and have not yet been finalized and approved by the OVGA Board.

Indicator	Undesirable Results	Metric	Minimum Threshold	Measurable Objective
Groundwater (GW) elevation	Increased pumping costs, drying out of shallow domestic wells, loss of existing monitoring wells	GW elevation	Lowest GW elevation during period of record (usually 2012-2016 drought) -OR- Lowest GW elevation available since 2000	Average GW elevation from WY 2001-2010 -OR- Average GW elevation for most recent 10 years
GW Storage Reduction	Decreased ability to maintain status quo pumping during extended drought periods	GW elevation	Same	Same
Surface Water Depletion	Reduction of groundwater discharged to the surface resulting in impacts to GDEs	GW elevation	Reduction of groundwater flow gradient toward springs below an acceptable percentage of the baseline gradient	Baseline period groundwater flow gradient towards springs
Land Subsidence	Damage to conveyance infrastructure General infrastructure damage	InSar	0.3 ft of subsidence within a single year or over 5 years	Average GW elevation from WY 2001-2010 -OR- Average GW elevation for most recent 10 years AND 0 ft of subsidence

Dr. Steinwand shared an example of where a minimum threshold and measurable objective might be set in relation to past recorded groundwater levels. In the example, the minimum threshold is set at the lowest level during a recent drought and the measurable objective at the average level in the recent record. This is a conservative approach, keeping overall levels where they are now, while allowing room for some fluctuation.

Dr. Steinwand said that OVGA staff are still working on the proposed SMCs, presenting drafts to the Board and the public for input. The OVGA Board are the final decision-makers regarding the content of the final GSP, informed by the draft developed by OVGA staff and by public input.

DISCUSSION

Mr. Mejia said that LADWP is still in the process of determining whether or not to use groundwater as part of dust mitigation. Information is being gathered, LADWP will submit its application for the six-month pumping test to CSLC, and there will be much more work remaining after the pumping test. Though the model shows promising results, the test will fill remaining data gaps and help determine whether pumping on the lake is feasible. LADWP is taking the process one step at a time and if the test shows that pumping would significantly impact resources, it will not be pursued.

OVERVIEW OF PHASE 1 EXISTING INFRASTRUCTURE IMPROVEMENT PROJECT

PRESENTATION

Jaime Valenzuela, LADWP, presented an overview of a project to improve reliability of existing Phase 1 infrastructure at the lake. The Phase 1 infrastructure is from the initial phases of construction at Owens Lake and is approximately twenty years old. Many of the components are nearing the end of their useful life, particularly given the corrosive conditions at the lake, leading to increased operations and maintenance efforts and cost and serious safety concerns. There is increased risk due to both the likelihood of failure and the consequences of failure, which could have regulatory, habitat, human health and safety, and other impacts. LADWP is developing a proactive process to repair, upgrade, and replace infrastructure. Mr. Valenzuela shared a map of the targeted Phase 1 North dust control areas, noting that the main pipeline is 12 miles long, is made of a brittle fiberglass material, and has few isolation valves, making it a particular vulnerability.

The project objectives and goals are to use proactive risk-based asset management to ensure reliable, resilient, safe, efficient infrastructure that is easy to operate and maintain, making dust control, water conservation, and habitat protection reliable and resilient. The framework of the Master Plan will be the basis of the permitting approach, leveraging the work of the GWG and HWG over the last decade.

The risk-based asset management includes risk assessment and mitigation recommendations, looking at the likelihood and consequences of failure for each asset. The consequences of failure are fairly fixed, whereas the likelihood of failure depends on condition, performance, and ability to maintain the asset. Depending on the risk level, an asset may be repaired, rehabilitated, or maintained, and possible actions will focus on the aspects of risk most salient to the asset, be it reducing the likelihood and/or the consequence of failure.

To date, LADWP has conducted an asset inventory based on physical surveys, LiDAR, and high-resolution ortho-imagery, a geotechnical investigation, a condition assessment, and risk analysis. The condition assessment included an operations and maintenance history workshop to gather institutional knowledge and fill gaps in records and databases, as well as field condition assessments of assets. The condition and performance assessment results showed road displacement, silt buildup, blocked culverts, severe corrosion in confined spaces, seized isolation valves, loss of pipe thickness, safety issues due to corrosion, and other issues. Results of the assessment of the mainline found that it is very brittle, with 20-30 years remaining, lacks isolation valves, and is highly consequential; a failure at T24 could impact up to 11 square miles of dust control. For the mainline, improving asset reliability is a priority. Missing and damaged corrosion protection stations need to be replaced.

Next steps for the Phase 1 infrastructure improvement project include:

- Complete risk mitigation strategies, for example all electrical systems need to be replaced
- Continue HSM modeling to ensure habitat maintenance, in coordination with Mr. Nordin
- Continue to develop conceptual illustrations
- Stakeholder outreach and consultation, working toward ensuring that key stakeholders, including Tribal, are involved early in the project
- Complete planning phase
- Commence design

EFFECT OF JUNE 2020 EARTHQUAKE ON GROUNDWATER FLOW AT OWENS LAKE

Due to time constraints, the planned presentation by Dr. Jorat on the effect of the June 2020 earthquake on groundwater flow at Owens Lake was postponed until the next GWG meeting.

GROUP DISCUSSION ON RELATED WORK AND NEXT STEPS

Dr. Jorat thanked participants for joining the meeting. The primary next steps include:

- Participants and the general public are invited to share comments on the Negative Declaration
- Facilitation team will distribute presentations shared during the meeting as well as the OLSAP report

The next meeting of the GWG is planned for May 2021. Agenda items for that meeting include:

APPENDIX 1: PARTICIPANTS

*Participants listed are per the Zoom virtual meeting report. Names and affiliations are not available for all attending parties.

Participant	Affiliation
Aaron Steinwand	Inyo County Water Department
Adam	
Adia Hotak	
Alexander Reimers	
Alyssa Marquez	CDFW
Andrea Jones	Eastern Sierra Audubon Society
Arrash Agahi	LADWP
Chuan-Shin Chong	Formation Environmental
Chuck Holloway	LADWP
Collette Gaal	LADWP
Crawford White	
Dave M Livingston	
David Edwards	
David Wagner	
Deborah House	LADWP
Drew Simpkin	State Lands Commission
Dustin Fischer	LADWP
Edie Trimmer	Bristlecone CNPS
Elise	
Eric Vogler	Stantec
Gabe Gaspar	
Grace Holder	Great Basin APCD
Grace Kato	CSLC
Greg Ainsworth	ESA
Jaime Valenzuela	LADWP
James Howe	LADWP
Jamie Garrett	
Jane Hauptman	LADWP

Jay Arnone	
Jeff Nordin	LADWP
Jennifer Mattox	State Lands Commission
Jim Richards	Formation Environmental
John Dickey	PlanTierra
John Hayes	LADWP
Joseph Flies-Away	LADWP
Julia Van Horn	CSUS
Kammi Foote	
Kathy Bancroft	Lone Pine Paiute Shoshone Reservation
Keith Rainville	ICWD
kleon2	
Margot Griswold	Land IQ
Maria Jesus	CNPS - Bristlecone Chapter
Mary Roper	Owens Valley Committee
Meagan Wylie	CSUS
Mike Prather	Eastern Sierra Audubon Society
Nelson Mejia	LADWP
Pete Pumphrey	Eastern Sierra Audubon Society
Phill Kiddoo	GBUAPCD
Rick	
Ron Ward	Rio Tinto Minerals
Rose Banks	CDFW
Saeed Jorat	LADWP
Sally Manning	Big Pine Paiute Tribe of the Owens Valley
Sarah Bryson	LADWP
Sarah Mongano	State Lands Commission
Sondra Grimm	GBUAPCD
Tony Morgan	DBS&A
Victor Harris	Stantec

APPENDIX 2: PRESENTATION SLIDES

Presentations are attached below. They appear in the order discussed in the summary above, with