LAS VIRGENES - TRIUNFO
JOINT POWERS AUTHORITY
AGENDA

4232 Las Virgenes Road, Calabasas, CA 91302

April 5, 2021, 5:00 PM

Public Participation for Meetings of Las Virgenes - Triunfo Joint Powers Authority in Response to COVID-19

On March 4, 2020, Governor Newsom proclaimed a State of Emergency in California as a result of the threat of COVID-19. On March 17, 2020, Governor Newsom issued Executive Order N-29-20 (superseding the Brown Act-related provisions of Executive Order N-25-20 issued on March 12, 2020), which allows a local legislative body to hold public meetings via teleconferencing and to make public meetings accessible telephonically or otherwise electronically to all members of the public seeking to observe and to address the local legislative body. Pursuant to Executive Order N-29-20, please be advised that members of the Las Virgenes - Triunfo Joint Powers Authority Board of Directors will participate in meetings via teleconferencing.

PUBLIC PARTICIPATION: Pursuant to Executive Order N-29-20 and given the current health concerns, this meeting is being conducted via Zoom Webinar and all attendees are muted by default. To join via computer, please use the following Zoom Webinar ID:

Webinar ID: **https://us06web.zoom.us/j/82267765364**
To join by telephone, please dial (669) 900-6833 or (346) 248-7799 and enter Webinar ID: **822 6776 5364**

For members of the public wishing to address the Board during Public Comment or during a specific agenda item, please press "Raise Hand" if you are joining via computer, or press *9 if you are joining via phone.

Members of the public can also access and request to speak at meetings live on-line, with audio and limited video, at www.LVMWD.com/JPALiveStream. In addition, members of the public can submit written comments electronically for consideration at www.LVMWD.com/JPALiveStream. To ensure distribution to the members of the Las Virgenes - Triunfo Joint Powers Authority Board of Directors prior to consideration of the agenda, please submit comments 24 hours prior to the day of the meeting. Those comments, as well as any comments received after 5:00 P.M., will be distributed to the members of the Board of Directors and will be made part of the official public record of the meeting. Contact Josie Guzman, Executive Assistant/Clerk of the Board at (818) 251-2123 or jguzman@lvmwd.com with any questions.

ACCESSIBILITY: If requested, the agenda and backup materials will be made available in appropriate alternative formats to persons with a disability, as required by Section 202 of the Americans with Disabilities Act of 1990 (42 U.S.C. Sec. 12132), and the federal rules and regulations adopted in implementation thereof. Any person who requires a disability-related modification or accommodation, in order to observe and/or offer public comment may request such reasonable modification, accommodation, aid, or service by contacting the Executive Assistant/Clerk of the Board by telephone at (818) 251-2123 or via email to jguzman@lvmwd.com no later than 8:00 AM on the day of the scheduled meeting.

Members of the public wishing to address the Las Virgenes-Triunfo Joint Powers Authority (JPA) Board of Directors are advised that a statement of Public Comment Protocols is available from the Clerk of the Board. Prior to speaking, each speaker is asked to review these protocols, complete a speakers' card, and hand it to the Clerk of the Board. Speakers will be recognized in the order the cards are received.

The Public Comments agenda item is presented to allow the public to address the Board on matters not on the agenda. The public may also present comments on matters on the agenda; speakers for agendized items will be recognized at the time the item is called up for discussion.

Materials prepared by the JPA in connection with the subject matter on the agenda are available for public inspection at 4232 Las Virgenes Road, Calabasas, CA 91302. Materials prepared by the JPA and distributed to the Board during this meeting are available for public inspection at the meeting or as soon thereafter as possible. Materials presented to the Board by the public will be maintained as part of the records of these proceedings and are available upon request to the Clerk of the Board.

PLEDGE OF ALLEGIANCE

1 CALL TO ORDER AND ROLL CALL

2 APPROVAL OF AGENDA

3 PUBLIC COMMENTS

Members of the public may now address the Board of Directors **ON MATTERS NOT APPEARING ON THE AGENDA**, but within the jurisdiction of the Board. No action shall be taken on any matter not appearing on the agenda unless authorized by Subdivision (b) of Government Code Section 54954.2

4 CONSENT CALENDAR

Matters listed under the Consent Calendar are considered to be routine, non-controversial and normally approved with one motion. If discussion is requested by a member of the Board on any Consent Calendar item, or if a member of the public wishes to comment on an item, that item will be removed from the Consent Calendar for separate action.

A Minutes: Special Meeting of February 22, 2021 and Regular Meeting of March 1, 2021 (Pg. 4)

Approve.

5 ILLUSTRATIVE AND/OR VERBAL PRESENTATION AGENDA ITEMS

A Pure Water Project Las Virgenes-Triunfo: Update (Pg. 24)

B State and Federal Legislative Update (Pg. 30)

C Public Outreach Strategy: Review of Tools and Tactics (Pg. 44)

6 ACTION ITEMS

A Rancho Solar Field Facility Landscaping Project: Final Acceptance (Pg. 59)

Authorize the Administering Agent/General Manager execute a Notice of Completion and have the same recorded; and, in absence of claims from subcontractors or others, release the retention, in the amount of $3,500.88, 30-calendar days after filing the Notice of Completion for the Rancho Solar Field Facility Landscaping Project.

B 2020 Bioassessment Monitoring Report: Approval of Purchase Order (Pg. 64)

Authorize the Administering Agent/General Manager to approve a purchase order to Aquatic Bioassay Consulting Laboratories, Inc., in the amount of $49,843, for the 2020 Bioassessment Monitoring Report.

C Tapia WRF Summer Season TMDL Compliance Project: Approval of Scope Change No. 4 (Pg. 122)

Authorize the Administering Agent/General Manager to execute Scope Change No. 4 with Stantec Consulting Services, Inc., in the amount of $17,892, for additional design and professional services associated with the Tapia WRF Summer Season TMDL Compliance Project.

D Multi-Site Battery Energy Storage System Project: Authorization for SGIP Funding Application Deposit (Pg. 128)

Ratify the Administering Agent/General Manager's execution of a Memorandum of Understanding and Non-Disclosure Agreement with Tesla, Inc., to secure Self-Generation Incentive Program (SGIP) funding; authorize the Administering Agent/General Manager to deposit a 5% refundable SGIP funding application fee, in the estimated amount of $168,645, with Tesla, Inc.; and approve an additional appropriation, in the amount of $50,000, for the Multi-Site Battery Energy Storage System Project.

7 BOARD COMMENTS

8 ADMINISTERING AGENT/GENERAL MANAGER REPORT

9 FUTURE AGENDA ITEMS

10 PUBLIC COMMENTS

Members of the public may now address the Board of Directors **ON MATTERS NOT APPEARING ON THE AGENDA**, but within the jurisdiction of the Board. No action shall be taken on any matter not appearing on the agenda unless authorized by Subdivision (b) of Government Code Section 54954.2

11 ADJOURNMENT

Pursuant to Section 202 of the Americans with Disabilities Act of 1990 (42 U.S.C. Sec. 12132), and applicable federal rules and regulations, requests for a disability-related modification or accommodation, including auxiliary aids or services, in order to attend or participate in a meeting, should be made to the Executive Assistant/Clerk of the Board in advance of the meeting to ensure availability of the requested service or accommodation. Notices, agendas, and public documents related to the Board meetings can be made available in appropriate alternative format upon request.

LAS VIRGENES – TRIUNFO
JOINT POWERS AUTHORITY
MINUTES
SPECIAL MEETING

9:00 AM February 22, 2021

PLEDGE OF ALLEGIANCE

The Pledge of Allegiance to the Flag was led by Jay Lewitt.

1. CALL TO ORDER AND ROLL CALL

The meeting was called to order at **9:00 a.m.** by Chair Tjulander via teleconference in the Board Room at Las Virgenes Municipal Water District headquarters at 4232 Las Virgenes Road, Calabasas, CA 91302. The meeting was conducted via teleconference pursuant to the provisions of the Governor's Executive Order, N-29-20, which suspended certain requirements of the Ralph M. Brown Act to support social distancing guidelines associated with response to the coronavirus (COVID-19) outbreak. Josie Guzman, Clerk of the Board, conducted the roll call.

Present: Directors Caspary, Lewitt, Lo-Hill, Nye, Orkney, Polan, Renger, Shapiro, Tjulander, and Wall.
Absent: None.

2. APPROVAL OF AGENDA

Director Orkney moved to approve the agenda. Motion seconded by Director Shapiro. Motion carried unanimously by roll call vote.

3. PUBLIC COMMENTS

None.

4. PURE WATER PROJECT LAS VIRGENES-TRIUNFO WATER AUGMENTATION WORKSHOP

Administering Agent/General Manager David Pedersen provided introductory remarks regarding prioritizing water augmentation options in Ventura and Los Angeles Counties, and identifying the most promising options for the success of the Pure Water Project Las Virgenes-Triunfo (Pure Water Project).

Eric Schlageter, Principal Engineer, presented a PowerPoint presentation on the Water Augmentation Study Initial Screening. He introduced the Pure Water Program Manager and Owner-Advisor Team from Jacobs Engineering Group (Jacobs): Rich Nagel, Principal; Jennifer Phillips, Program Manager; and Katie Bollmer, Water Augmentation Specialist. He stated that the goal for the next six months would be to establish the program foundation with processes and tools, final projects, a baseline cost-loaded master schedule, proposed delivery methods, environmental/regulatory strategies, and the public outreach approach.

Katie Bollmer continued the PowerPoint presentation and reviewed the 2018 Tapia Water Reclamation Facility (Tapia) average flows and existing baseline flow, minus recycled water demands, which will feed the Advanced Water Treatment Plant (AWTP). She also reviewed Water Augmentation Objective No. 1 to identify a cost-effective combination of water augmentation sources to achieve a steady-state flow of 7.5 million gallons per day (MGD) of feed water to the AWTP year-round. She also reviewed Water Augmentation Objective No. 2 to evaluate and recommend a cost-effective combination of water augmentation sources and seasonal AWTP operating rates.

Ms. Bollmer reviewed the Water Augmentation Study Guiding Principles focusing on augmentation sources that meet the following criteria:

- Sources that can be implemented within the Pure Water Project timeline to feed the AWTP;
- Flows that will be reliable and controllable towards operation of the AWTP; and
- Options where interception and conveyance of the flows are cost-effective.

Ms. Bollmer also reviewed the screening, analysis and ranking approach for a recommended water augmentation solution, and digital watershed system framework models for existing and proposed infrastructure. She also reviewed water augmentation delivery points and augmentation source types.

Ms. Bollmer provided an overview of the initial screening and noted that water augmentation sources were screened into three categories: high priority, medium priority, and low priority. She explained the initial screening approach used, which provided a score based on implementation risk, reliability, estimated available flow, and estimated water quality. She stated that 36 total augmentation sources were evaluated as part of the draft initial screening, which resulted in 18 high priority, 11 medium priority, and seven low priority recommendations.

Ms. Bollmer reviewed the high priority augmentation sources draft initial screening results. She noted that the source that provided the most flow was under the treated wastewater effluent category, followed by groundwater sources, and lastly by flow diversions. She stated that there was approximately 7 MGD in total available flow from the most likely high priority sources.

Ms. Bollmer responded to a question regarding whether any of these sources would remove water from Malibu Creek in the summer and whether potable water supplement was needed for the creek by stating that flow diversion was included as a source, and the flow diversions would target urban runoff flows from the stormwater system. She noted that the dry weather flow per MS4 permits needed to be removed from the stormwater system. She stated that Jacobs understood that there was a minimum flow requirement in Malibu Creek, and the flow would need to be considered closely when considering flow diversions. She also responded to a question regarding a cost estimate on the infrastructure for tying into all of the different sources in order to achieve 7 MGD by stating that the cost would be factored into in the next phase of the analysis.

Ms. Bollmer presented the water augmentation types and initial screening, and reviewed the map of augmentation sources.

Director Renger noted that there were six abandoned wells in Stokes Canyon and in other areas and inquired regarding the completeness of surveying all wells. Ms. Bollmer responded that additional wells could be added to the list for evaluation through the screening process.

Ms. Bollmer reviewed the treated wastewater effluent category, and recommended that WE-1 Hill Canyon Treatment Plant's 3.3 MGD of treated effluent be placed in the high priority category.

Mr. Schlageter responded to a question regarding whether the treated effluent from the Hill Canyon Treatment Plant was being sent to the Santa Rosa Valley for irrigation purposes by stating that the downstream effluent discharged to Calleguas Creek was utilized by Camrosa Water District (Camrosa), and there were also some commitments from the City of Thousand Oaks to Camrosa; however, the presentation was an estimate of the potential availability of flow that could come to the project. He noted that the 3.3 MGD of treated effluent would need to be refined through further discussions with the City of Thousand Oaks.

Mr. Schlageter also responded to a question regarding the salinity that Camrosa would receive from the creek due to the removal of treated effluent from the Hill Canyon Treatment Plant outflows and the addition of brine to the inflows. He stated that according to the Regional Brine Study, brine would be taken to the Hill Canyon Treatment Plant; however, it would bypass the treatment facility and be routed to Calleguas Municipal Water District's Salinity Management Pipeline. He noted that additional salt loading would not be provided on the influent side of the Hill Canyon Treatment Plant.

Ms. Bollmer reviewed groundwater sources, including Thousand Oaks Wells: GW-2 Los Robles Golf Course Wells, GW-3 Library Well, and GW-TO Additional Thousand Oaks Wells. She also reviewed Other Production Wells, including GW-1 Westlake Wells and GW-13 King Gillette Ranch Wells. She also reviewed

Dewatering, including GW-4 Four Seasons Well, GW-5 Hilton Foundation Dole Building, GW-6 Fire Station #89 Well, GW-7 Tapia Balancing Pond, GW-8 Rancho Las Virgenes Farm Wells, GW-9 Westlake Seepage, GW-10 Old Hilton Foundation Well, GW-11 Perched Groundwater in Agoura Hills, and GW-12 Hidden Hills Wells. She recommended GW-2 Los Robles Golf Course Wells, GW-3 Library Well, and GW-TO Additional Thousand Oaks Wells be placed in the high priority category. She also recommended GW-1 Westlake Wells be placed in the high priority category and GW-13 King Gillette Ranch Well be placed in the medium priority category. She responded to a question regarding ensuring that the flow from Westlake Wells would not be counted twice by stating that all of the flow seen at Tapia in the summer months needed to be taken into account. She noted that the augmentation that would be taken from Westlake Wells would be accounted for in the winter months, while ensuring that the flows would not be counted twice.

Mr. Schlageter responded to a question regarding the feasibility of desalting the Thousand Oaks Wells and using the water for irrigation by stating that the concept was that in lieu of the City of Thousand Oaks investing in infrastructure for wellhead improvements, the flows would be taken directly to the AWTP as a desalting means to utilize the water and save the city on the cost of treatment. He noted that there would be an agreement for offsetting the flows to benefit the City of Thousand Oaks as well. Administering Agent/General Manager David Pedersen added that building a desalter for a single well would be a costly endeavor. He stated that he believed the goal for the City of Thousand Oaks would be to achieve a cost savings by taking the water from the wells to the AWTP. He also stated if the wells remain a high priority, the institutional relationship with the City of Thousand Oaks would need to be developed and brought back to the Board for discussion.

Ms. Bollmer responded to a question regarding what was known regarding the flow of water in the aquifers by stating that Jacobs had not prepared a detailed hydrogeological study as part of the Water Augmentation Study. She also stated that if the AWTP was going to rely on well water to feed the plant, then a more detailed analysis of individual wells would be necessary to ensure that the water is sustainable over the long period. Administering Agent/General Manager David Pedersen added that the hydrology was better known moving further west in Thousand Oaks where a groundwater study was completed. He stated that in general the water quality moving further to the western side of Thousand Oaks was better and lower in total dissolved solids (TDS), and the TDS increased significantly moving to the eastern side. He noted that the higher quality groundwater would present less of an opportunity for the AWTP because the city could pump the water and supply it for drinking water without the need for a desalter. He noted that although there was natural replenishment, there were some limits in the amount of water that could be pumped year-round from the wells.

Director Caspary noted that Las Virgenes Municipal Water District (LVMWD) had prepared several groundwater studies going back over 30 years. Ms. Bollmer responded that she would work with staff to obtain copies of these studies.

Ms. Bollmer reviewed Groundwater – Dewatering Wells, including the GW-7 Tapia Balancing Pond and Dewatering Wells with low estimated flow at GW-4 Four Seasons Well, GW-5 Hilton Foundation Dole Building Well, GW-6 Fire Station #89 Well, GW-10 Old Hilton Foundation Well, and GW-12 Hidden Hills Wells. She recommended GW-7 Tapia Balancing Pond to the high priority category, and the Dewatering Wells with low estimated flow to the medium priority category. Administering Agent/General Manager David Pedersen noted that there were options for the medium priority category, and there could be other motivations to pursue these options such as an interest in supporting the Hilton Foundation, the Fire Department, or other drivers that push medium priority to high priority.

Ms. Bollmer continued reviewing Groundwater – Dewatering Wells, including GW-9 Westlake Seepage from Las Virgenes Reservoir Dam, and Other Sources including GW-8 Rancho Las Virgenes Farm Wells and GW-11 Perched Groundwater in Agoura Hills. She recommended these sources to the low priority category.

Director Caspary noted that many agencies were responsible for development plans to manage groundwater as part of the Sustainable Groundwater Management Act. He stated that it did not appear there were any high priority basins in the area that were being considered. He suggested the JPA should consider the priority in order to participate in developing a groundwater management for the area in concert with the City of Thousand Oaks, the County of Ventura, and the County of Los Angeles. Administering Agent/General Manager David Pedersen responded that staff had received a notice from the City of Thousand Oaks that it was contemplating initiating a groundwater sustainability study and plan for the groundwater basin within the city. He stated that staff expressed interest in participating in that process.

Director Renger referred to GW-9 Westlake Seepage and stated that there could be much water that goes through the bottom of the reservoir into the ground. He noted that a well was placed downstream and there was a possibility that the water could be scavenged. Ms. Bollmer responded that this source would be added to the list for consideration.

Ms. Bollmer reviewed Flow Diversions, including stream diversions and urban runoff diversions to capture dry weather and some urban weather urban runoff. She noted that both of these types of diversions must meet MS4 requirements for the NPDES permit, and there was a potential for cost sharing. She also reviewed the benefits and challenges from both types of diversions.

Ms. Bollmer responded to a question regarding the need for permits from the Department of Fish and Game for stream diversion by stating that any regulatory issues associated with high priority sources would need to be considered.

Director Lo-Hill commented that stream diversions and urban runoff diversions might be desirable for cities, and suggested that the cities might be willing to pay for the infrastructure to receive purified water after going through the AWTP process.

Ms. Bollmer reviewed stream diversions to the AWTP at FD-1 Medea Creek Diversion, FD-2 Triunfo Creek Diversion, and FD-3 Las Virgenes Creek Diversion, and recommended these sources be placed in the high priority category.

Director Orkney inquired which district would receive credit for increased flow to Tapia. She noted that the flow from Ventura County would come from Medea Creek and Lindero Creek, and she suggested that the JPA would need to consider how to apportion the flow if there was a stream diversion. Administering Agent/General Manager David Pedersen responded that this was flagged as an item for further discussion on institutional issues. He suggested that another JPA Strategic Planning Meeting should be held and include this as one of the topics of discussion. He stated that there could be water augmentation strategies that the JPA might want to pursue as a JPA, and there could be some that each member agency might want to pursue individually.

Ms. Bollmer reviewed Urban Runoff Diversion Sources by municipality, including FD-4 Agoura Hills, FD-5 Calabasas, FD-6 Oak Park, FD-7 Hidden Hills, FD-8 Unincorporated Los Angeles County, FD-9 Thousand Oaks, FD-10 Westlake Village, and screening considerations. She recommended these sources be placed in the high priority category.

Director Lewitt commented that he had lived in Agoura Hills for over 30 years and nearly every day he has seen a stream of water across the sidewalks and down the gutters. He stressed that urban runoff diversion should be placed in the high priority category, as well as awareness of the amount of water and fertilizer in the runoff.

Director Caspary noted that the Los Angeles Regional Water Quality Control Board (LARWQCB) was in the process of approving the local cities' MS4 permits, which must comply with the timeline of having their diversions planned and implemented. He suggested having a well-developed participation arrangement that could be presented to the cities as an alternative for construction of infiltration and/or treatment facilities. Administering Agent/General Manager David Pedersen responded that the MS4 permit was anticipated to be brought before the LARWQCB as soon as April, and the LARWQCB was discussing time extensions for the various TMDLs for all of the municipalities. He noted that staff and Jacobs were working with 12 other agencies in the Los Angeles Basin in the

development of a White Paper for the use of existing infrastructure and capacity in the wastewater systems to treat urban runoff and some first-flush stormwater. Ms. Bollmer reviewed potential Septic-to-Sewer Conversions from residential water-only customers, including SS-1 Malibu Lake Septic, SS-2 Chesebro and Old Agoura Septic, and SS-3 Monte Nido Septic. She noted that these types of projects would require construction of new local sewers and possible extension of trunk sewers. She recommended these sources be placed in the medium priority category. She responded to a question regarding a legal requirement for homes in these areas to connect to the sewer system by confirming that there was no legal requirement to connect. Administering Agent/General Manager David Pedersen added that over time all of these septic systems would eventually be converted to a centralized sewer system as the LARWQCB adopts new septic system standards. He asked Ms. Bollmer to follow-up with TWSD General Manager Mark Norris regarding any areas in the TWSD service area that were on septic systems.

Director Polan inquired regarding possible sources area along Mulholland Highway in Calabasas. Ms. Bollmer responded that this area could be added to the list.

Director Lo-Hill noted that there were some penitentiary facilities on Encinal Canyon Road that might be a septic source. Ms. Bollmer responded that this area could be added to the list as well.

Mr. Schlageter noted that the challenge that septic-to-sewer conversions would provide was that there was no control as to when they may or may not occur. He stated that in looking at the long term, these conversions would be supported and staff would continue to work with the local adjacent agencies.

Director Caspary suggested exploring whether there might be an opportunity in receiving sewage from the Top ‘O Topanga Mobile Home Park. He also suggested it might be interesting for the Board to know the cost of sewer connection options compared to the construction cost for a new septic system.

Ms. Bollmer reviewed Raw Wastewater Sources, including RW-1 Increase in Pepperdine Wastewater Flows, RW-2 Chatsworth-Twin Lakes Sewer Flow to Los Angeles Sanitation and Environment (LASAN), RW-3 Swimming Pool Maintenance Flows, and RW-4 Malibu Mesa Treatment Plant. She recommended these sources be placed in the low priority category.

Director Caspary commented that he believed there were also flows from Triunfo Water & Sanitation District in Bell Canyon going to LASAN, and he suggested that this should be included in Raw Wastewater Sources.

Ms. Bollmer responded to a question regarding an increase in flow to Tapia or Hill Canyon Treatment Plant from new development by stating that Jacobs had not

considered new development; however, they discussed the future influent to Tapia for baseline projections with staff. She noted that Jacobs was in the process of updating the baseline for 2030 to address projected new development.

Administering Agent/General Manager David Pedersen responded to a question regarding whether there would be enough flow from the Malibu Mesa Treatment Plant that would be beneficial instead of building an injection system by stating that this option was considered, as well as capturing the treated effluent from the new Malibu Civic Center Wastewater Treatment Plant. He noted that the City of Malibu intended to use the Title 22 recycled water to irrigate city parks during the wintertime; however, due to lack of storage, the city was planning to inject the water in some of the newly constructed injection wells. He stated that there could be an option to take the water from the City of Malibu and supply it to Pepperdine University, which would reduce the amount of recycled water from Tapia that would be conveyed to the university. Director Caspary suggested taking this concept to the City of Malibu's City Council for consideration.

Ms. Bollmer responded to a question regarding whether underground storage could store the excess water flow in the ground and in the creek during the winter months by stating that there was discussion regarding subsurface storage at the Rancho Las Virgenes Farm. She stated that this would require a deeper analysis than what could be done under the Water Augmentation Study to locate a suitable site for subsurface storage. Administering Agent/General Manager David Pedersen noted that the farm had high nitrate levels, and the water would likely be lost to the creek due to its proximity. He also noted that prior discussions included subsurface storage in Hidden Valley.

Ms. Bollmer reviewed Recycled Water Conservation Sources, including TWD-1 LV Recycled Water Conservation Program, and recommended this source be placed in the high priority category.

Director Caspary mentioned that the base flows in the prior five years at the Tapia influent were better than 10 MGD; however, it was now was averaging 7.5 MGD due to a change in customer behavior. Administering Agent/General Manager David Pedersen responded that staff was monitoring this trend, which spoke to the need for water augmentation and seeking new water sources. He stated that this should be monitored going forward and addressed in the next master plan update. Mr. Schlageter added that there was limited growth in the service area, and future projections for growth within the watershed were limited.

Ms. Bollmer responded to a question regarding the yearly shortfall by stating that Jacobs had not calculated the difference between what is available and what is needed to operate the AWTP at 7.5 MGD year round; however, she could provide a calculation. Administering Agent/General Manager David Pedersen stated that the yearly shortfall was in the range of 1,000 acre-feet.

Ms. Bollmer continued reviewing Recycled Water Conservation Sources, including RWD-2 Procure Malibu Excess Tertiary Flow for Pepperdine, which was recommended for the medium priority category, and RWD-3 Recycled Water Conservation at Pepperdine, which was recommended for the low priority category.

A lengthy discussion ensued regarding potential institutional barriers and the longstanding relationship with Pepperdine University. Administering Agent/General Manager David Pedersen suggested moving RWD-2 Procure Malibu Excess Tertiary Flow for Pepperdine and RWD-3 Recycled Water Conservation at Pepperdine to the high priority category, and revisiting these options if some high priority sources needed to be moved back to the medium priority category. He noted that the goal for this project with Pepperdine University would be to continue to receive additional wastewater from them and work with them to minimize the amount of recycled water used on campus so that the AWTP could produce more purified water.

Ms. Bollmer reviewed the draft initial screening results and stated that priorities would be moved as discussed.

Ms. Bollmer responded to a question regarding RW-3 Swimming Pool Maintenance Flows and stated that customers could dewater their swimming pools to the sewer sanitary system. She also responded to a question regarding disqualifying water sources by stating that this was not considered during the initial screening. She stated that the wastewater treatment plant included a certain water quality profile for the flows that would be sent for treatment. She noted that a TDS or high salt content in flows to Tapia could upset the treatment process and result in poor quality discharge. She also stated that for the initial screening, TDS was considered across the water quality profile from a standpoint of whether to send flows to Tapia or the AWTP. She noted that Jacobs did not identify any other constituent that would cause concern during the initial screening level.

Director Caspary asked that sources containing contaminants that would be difficult to treat should not be considered as augmentation options. He noted that there was a recent letter to the editor that intimated there were some contaminants that the AWTP would not be able to treat or remove.

A discussion ensued regarding whether to move some of the wells to the low priority category or to keep them in medium or high priority due to water volume.

Administering Agent/General Manager David Pedersen responded to a question regarding TW-2 Chatsworth-Twin Lakes Sewer Flow as a low priority water augmentation source by stating that a major infrastructure investment would be required for the collection system; however, this water source could be analyzed further. He also stated that he believed a feasibility study was completed that determined it would not be cost effective.

Director Orkney suggested adding Bell Canyon as a water source and that perhaps there could be a trade with LASAN or the Los Angeles Department of Water and Power for additional water in exchange for sewage. Administering Agent/General Manager David Pedersen responded that this could be explored further. He noted that LASAN was also pursuing potable reuse under Operation NEXT, as well as a project at the Tillman Water Reclamation Plant to replenish the San Fernando Basin.

Director Renger requested a copy of the PowerPoint presentation. Administering Agent/General Manager David Pedersen responded that a copy of the presentation would be emailed to the Board, and staff would search for a copy of the Chatsworth-Twin Lakes feasibility study.

Ms. Bollmer reviewed the high priority augmentation sources, including treated wastewater effluent, likely groundwater sources, and flow diversions. She noted there was approximately 7 MGD in total available from the most likely high priority sources.

Director Shapiro expressed concern with heavy reliance on treated wastewater effluent and endocrine disrupters in treated wastewater effluent. He inquired whether the treatment drain proposed for the Pure Water Project would deal with endocrine disrupters. Ms. Phillips responded that the project would comply with reservoir water augmentation regulations. She stated that the treatment strategy would consider having barriers before reaching the potable water source in the reservoir. Mr. Schlageter noted that staff was currently in the process of conducting the challenge testing at the demonstration facility as part of the implementation test plan. He stated that staff could begin to look at testing and sampling for those types of constituents. Administering Agent/General Manager David Pedersen added that this was an area of much research and on-going study. He stated that the advanced water treatment process was very robust in removing constituents of emerging concern, including a physical process of removal through the reverse osmosis membrane that would remove compounds down to very small levels. He stated that any remaining compounds would be destroyed through the ultraviolet light/advanced oxidation processes. He also stated that the on-going research and the use of the demonstration facility would show the removal effectiveness for these compounds and would be part of the public outreach strategy.

Ms. Phillips reviewed the next steps and target milestones, which would include:

- Updating the Digital Watershed with Water Augmentation Sources (March)
- Performing Alternatives Analysis and Identifying Cost-effective Augmentation Solutions (April)
- Ranking Solutions and Identifying Recommendations (April)
- Drafting Supporting Documentation (May)

Administering Agent/General Manager David Pedersen noted that there was a scheduling conflict for the next workshop planned on March 29th, and he suggested that the next workshop be held on March 30th from 10:00 a.m. to 12:00 p.m. The Board agreed.

5. ADJOURNMENT

Seeing no further business to come before the Board, the meeting was duly adjourned at **11:21 a.m**.

Ray Tjulander, Chair

ATTEST:

Jay Lewitt, Vice Chair

LAS VIRGENES – TRIUNFO
JOINT POWERS AUTHORITY
MINUTES
REGULAR MEETING

5:00 PM March 1, 2021

PLEDGE OF ALLEGIANCE

The Pledge of Allegiance to the Flag was led by Len Polan.

1. CALL TO ORDER AND ROLL CALL

The meeting was called to order at **5:00 p.m.** by Chair Tjulander via teleconference in the Board Room at Las Virgenes Municipal Water District headquarters at 4232 Las Virgenes Road, Calabasas, CA 91302. The meeting was conducted via teleconference pursuant to the provisions of the Governor's Executive Order, N-29-20, which suspended certain requirements of the Ralph M. Brown Act to support social distancing guidelines associated with response to the coronavirus (COVID-19) outbreak. Josie Guzman, Clerk of the Board, conducted the roll call.

Present: Directors Caspary, Lewitt, Lo-Hill, Nye, Orkney, Polan, Renger, Shapiro, Tjulander, and Wall.
Absent: None.

2. APPROVAL OF AGENDA

Director Polan moved to approve the agenda. Motion seconded by Director Wall. Motion carried unanimously by roll call vote.

3. PUBLIC COMMENTS

None.

4. CONSENT CALENDAR

A Minutes: Regular Meeting of February 1, 2021: Approve

B Budget Planning Calendar for Fiscal Year 2021-22

Receive and file the Budget Planning Calendar for Fiscal Year 2021-22.

Director Orkney moved to approve the Consent Calendar. Motion seconded by Director Polan. Motion carried unanimously by roll call vote.

5. ILLUSTRATIVE AND/OR VERBAL PRESENTATION AGENDA ITEMS

A Pure Water Project Las Virgenes-Triunfo: Update

Joe McDermott, Director of Engineering and External Affairs, shared a photograph of the new Super Drop mascot costume, and noted that Super Drop would be used for social media and videos to promote the Pure Water Project Las Virgenes-Triunfo (Pure Water Project). Administering Agent/General Manager David Pedersen acknowledged Director Orkney for providing a sample of iridescent fabric that was used for Super Drop's costume.

Mr. McDermott provided an update regarding the Taste the Water, Explore the Garden tours, and stated that tours could begin once the County of Los Angeles is in the less restrictive red tier of the state's COVID-19 restrictions. He also stated that the tours would allow people to taste the water at a stand in front of the Pure Water Demonstration Facility building and visit the sustainability garden. He noted that a virtual tour of the facility, the orientation video, and the ribbon-cutting ceremony video were available at www.ourpureh2o.com. Mr. McDermott also noted that the monthly update report from Jacobs Engineering Group was included in the agenda packet, including a project overview, monthly major milestones, key program accomplishments, key considerations, and upcoming activities. He stated that the next JPA workshop would be held on March 30th at 10:00 a.m. regarding alternative delivery methods.

Jennifer Phillips, representing Jacob Engineering Group, responded to a question regarding the programmatic California Environmental Quality Act (CEQA) approach for the project. She explained that because there was a concept for a project to consider two different locations for the Advanced Water Treatment Facility (AWTF) and different alignments for the pipelines, a programmatic CEQA document would support the JPA to develop alternatives moving forward, allowing the JPA to pursue the CEQA certification earlier instead of waiting until the project is further defined. This approach would allow the JPA to submit and develop applications for funding earlier in the project development process.

Director Polan noted that he participated in the WateReuse Virtual Symposium earlier in the day, where it was mentioned that it was important to seek support for potable water reuse from the medical community.

B State and Federal Legislative Update

Anna Schwab, federal lobbyist for the JPA with Best Best & Krieger LLP (BBK), presented the federal legislative update, and reported that Congresswoman Grace Napolitano reintroduced legislation to reauthorize the Title XVI Program. She

stated that BBK could provide a letter of support for the Board's consideration. She also stated that it was critical that Title XVI be funded and reauthorized, and noted that BBK was working with the Association of California Water Agencies (ACWA) and WateReuse for reauthorization of the program. She also noted that the JPA needed to demonstrate that the Pure Water Project was moving forward in order to apply for federal funds, and she urged the Board to support the reauthorization of the program. She stated that it was expected that Senator Dianne Feinstein would introduce a similar bill. She also reported that Congresswoman Napolitano and Congressman Peter DeFazio introduced the Water Quality Protection and Job Creation Act of 2021, which would authorize funding for water and wastewater projects, create new jobs, and modernize aged equipment. She also provided an update regarding the Wildfire Caucus, and suggested the Board might consider sending a letter of support. She also reported on the restoration of earmarks for projects in need of financial support, and noted that the use of earmarks would be very limited and would require legislators to include their names and the name of the organization requested the funding.

Lowry Crook, federal lobbyist for the JPA with BBK, reported that Congressional Members would have a quota of ten earmarks, which must be for funding within existing programs. He also reported that Congress passed a $1.9 trillion COVID-19 stimulus package last week, which was forwarded to the Senate for consideration. He noted that the stimulus package did not include a move to expand state and local aid to special districts; however, the package included funding for the Low Income Home Energy Assistance Program (LIHEAP). He also noted that the package would provide payroll tax credits to public agencies for extended family and medical leave from the end of March through September.

Ms. Schwab responded to a question regarding funding for water infrastructure by stating that funding for infrastructure was not included in the COVID-19 stimulus package; however, the current Administration indicated that funding for water infrastructure would be a priority. Mr. Crook added that there would be discussion of a water infrastructure package driven by the expiration of the Surface Transportation Act. He noted there was concern regarding the growing deficit in transportation funding due to reduced gas tax revenues, and Congress was considering funding for water infrastructure as part of a reconciliation bill through the Senate.

Syrus Devers, state lobbyist for the JPA with BBK, presented the state legislative update, and reported that the state legislature passed a $7.6 billion COVID-19 relief package; however, no funding was included for special districts. He noted that BBK was monitoring 22 legislative bills, and would discuss bill positions with staff on March 4th. He noted that ACWA and the California Municipal Utilities Association (CMUA) were working together to persuade the legislature and the Governor to assist with providing funding for delinquent utility bills. Mr. Devers responded to a question regarding the status of the availability of COVID-19 vaccines for water and wastewater workers by stating that he was unaware of the

status. Administering Agent/General Manager David Pedersen added that a letter was sent to the Governor's COVID-19 Task Force asking that it consider moving water and wastewater workers to Priority 1B; however, the request did not prevail as it was not consistent with the Centers for Disease Control and Prevention (CDC) guidelines.

6. ACTION ITEMS

A Pure Water Project Las Virgenes-Triunfo: Preliminary Results of Community-Wide Public Opinion Survey

Receive and file the preliminary results of a Community-Wide Public Opinion Survey for the Project Water Project Las Virgenes-Triunfo.

Dave Roberts presented the report.

Dr. Steven Rouse, representing Pepperdine University, provided a presentation entitled "Community Attitudes about Purified Recycled Water", showing the preliminary results of the community-wide public opinion survey. He stated that future research would include assessing changes in attitude from individuals before and after touring the Pure Water Demonstration Facility, taking note of the differences in facial muscle movement following the tour, and on-going community attitude updates. He responded to questions regarding the availability of attitude scales specific for purified recycled water and whether staff had followed-up with the California Association of Sanitation Agencies (CASA) for similar surveys by stating that he was unable to locate any surveys in published research literature. He noted that he reviewed some reports that were prepared for Ventura County; however, the report used a single item scale. Joe McDermott, Director of Engineering and External Affairs, added that several agencies had conducted surveys and used other scales; however, Pepperdine University was seeking published research for a high level of accuracy and a different level of sophistication for the degree of acceptance or non-acceptance of purified recycled water.

Dr. Rouse responded to a question regarding whether measuring facial muscle movement would be considered a violation of privacy by stating that any researcher from the university who would be collecting data from human subjects must have the study approved by the university's Institutional Review Board. He noted that approval was received from the Board for this survey. He also noted that the informed consent form included information to survey participants that facial expressions would be measured. He stated that the data would be collected in group form, and it would not single out one individual's data.

Dr. Rouse also responded to a question regarding the gender, race, and ethnicity survey question by stating that one of the goals of the survey was not only to collect data but to also disseminate information to the broader scientific community. He

noted that Pepperdine University could not publish a study unless it could specify the nature of the sample from which data was collected. He also responded to a question regarding the survey responders' most common response to the project by stating that although there was a wide diversity of views, there were more people who were positive as opposed to resistant to the project.

Director Polan stated that it was noted during the WateReuse Virtual Symposium on March 1st that public approval of potable water reuse had increased to 98 percent following a tour of MWD's Regional Recycled Water Project in Carson, and he suggested that Dr. Rouse obtain this survey data.

Director Polan moved to approve Item 6A. Motion seconded by Director Lo-Hill. Motion carried unanimously by roll call vote.

B Independent Audit Services: Request for Proposals

Authorize the issuance of a Request for Proposals for independent audit services beginning with Fiscal Year 2021-22.

Administering Agent/General Manager David Pedersen presented the report.

A discussion ensued regarding the Audit Committee's discussion on issuing a Request for Proposals for independent audit services.

Director Caspary moved to approve Item 6B. Motion seconded by Director Nye. Motion carried by the following roll call vote:

AYES: Caspary, Lo-Hill, Nye, Orkney, Renger, Tjulander, Wall
NOES: Lewitt, Polan, Shapiro
ABSTAIN: None
ABSENT: None

C Digester No. 2 Rehabilitation Project: Change Order No. 4

Authorize the Administering Agent/General Manager to execute Change Order No. 4, in the amount of $35,415, for the Digester No. 2 Rehabilitation Project.

Mercedes Acevedo, Assistant Engineer, presented the report.

Director Orkney moved to approve Item 6C. Motion seconded by Director Caspary. Motion carried unanimously by roll call vote.

D Short-Term Offsite Disposal of Class B Biosolids: Approval

Authorize the Administering Agent/General Manager to execute an

agreement with New Earth USA for the short-term offsite disposal of Class B biosolids at a cost of $63.69 per ton.

Brett Dingman, Water Reclamation Manager, presented the report.

Director Polan moved to approve Item 6D. Motion seconded by Director Wall. Motion carried unanimously by roll call vote.

E Tapia Water Reclamation Facility Outfall Rehabilitation Project: Approval of Expanded Environmental Permitting Support

Authorize the Administering Agent/General Manager to execute a professional services agreement with Rincon Consultants, Inc., in the amount of $63,981, to provide expanded environmental permitting support for the Tapia Water Reclamation Facility Outfall Rehabilitation Project.

Brett Dingman, Water Reclamation Manager, presented the report. He responded to a question regarding seeking a permit from the County of Los Angeles under the Local Coastal Plan instead of a Local Coastal Development Permit by stating that staff from the County of Los Angeles Coastal Planning Department discussed permit requirements with staff from the California Coastal Commission, who indicated that a Local Coastal Development Permit was required. Director Caspary suggested seeking assistance from upper management staff at the County level.

Administering Agent/General Manager David Pedersen stated that staff could further explore seeking a County permit under the Local Coastal Plan. He also stated that maintenance activity should be exempt; however, it was his understanding that there were trees in a sensitive area in the creek bed, and typically regulatory agencies tend to err on the side of caution.

Mr. Dingman responded to a question regarding the timeline to obtain permits by stating that it could take two to three years to obtain permits and authorization from all of the regulatory agencies.

Director Caspary moved to approve Item 6E and have staff seek coverage under the Local Coastal Plan. Motion seconded by Director Lewitt. Motion carried unanimously by roll call vote.

7. BOARD COMMENTS

Director Orkney expressed support for the free Community Compost Program outreach plan. She noted that her gardener had applied compost to her front lawn with great results.

Director Polan noted that he attended a meeting where funding for the continued use of measuring snowpack levels in the Sierras by airplane was discussed. He

reported that he participated in the WateReuse Virtual Symposium earlier that day, where it was noted that public approval of potable water reuse had increased to 98 percent following a tour of MWD's Regional Recycled Water Project in Carson. He noted that there was also discussion regarding the use of artificial intelligence in recycled water plants, and he inquired whether this technology was being considered. Administering Agent/General Manager David Pedersen responded that staff was working with a firm from Japan on artificial intelligence for the Pure Water Demonstration Facility. He stated that staff could provide a presentation at a future meeting.

8. ADMINISTERING AGENT/GENERAL MANAGER REPORT

Administering Agent/General Manager David Pedersen reminded the Board regarding the workshop scheduled on March 30th from 10:00 a.m. to 12:00 p.m., for the Pure Water Project Las Virgenes-Triunfo Alternative Delivery Methods. He also reminded the Board to submit their Form 700 Statement of Economic Interests by April 1st. He reported that the state would be implementing its new single statewide COVID-19 vaccine eligibility system, called MyTurn, which would assist in determining when individuals would be eligible for the vaccine or notifying registered individuals when they become eligible. He stated that he would send the website link to the Board, which would also be shared with employees.

9. FUTURE AGENDA ITEMS

None.

10. INFORMATION ITEMS

A Supply and Delivery of Bulk Woodchip Compost Amendment: Award

11. PUBLIC COMMENTS

None.

12. ADJOURNMENT

Seeing no further business to come before the Board, the meeting was duly adjourned at **6:42 p.m**.

Ray Tjulander, Chair

ATTEST:

Jay Lewitt, Vice Chair

ITEM 5A

INFORMATION ONLY

April 5, 2021 JPA Board Meeting

TO: JPA Board of Directors

FROM: General Manager

Subject : Pure Water Project Las Virgenes-Triunfo: Update

SUMMARY:

On August 1, 2016, the JPA Board selected Scenario No. 4, use of Las Virgenes Reservoir for indirect potable reuse, as the preferred alternative for the Recycled Water Seasonal Storage Basis of Design Report. The selected alternative was subsequently renamed the *Pure Water Project Las Virgenes-Triunfo*. Staff was also directed to report back to the Board on the next steps for implementation of the project.

Staff released a request for proposals (RFP) for Owner's Advisor/Program Manager services for the Pure Water Project Las Virgenes-Triunfo on May 8, 2020. The selection of an Owner's Advisor/Program Manager to support the effort was an important next step to begin implementation of the Pure Water Program. Utilization of an Owner's Advisor/Program Manager is consistent with the approach taken by other public agencies pursuing potable reuse projects of similar scope and complexity. Among the critical elements of the proposed scope are completion of the preliminary design and environmental documentation in support of the Pure Water Program. The scope of work under the contract includes program management, preparation of preliminary design and/or alternative delivery bridging documents, preparation of all environmental studies and documentation for compliance with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA), preparation of studies and documents necessary to secure all required regulatory permits, and support of efforts to secure grant funding or low-interest loans.

On September 8, 2020, the JPA Board accepted a proposal from Jacobs Engineering Group, Inc., and authorized the Administering Agent/General Manager to execute a professional services agreement for Owner's Advisor/Program Manager services for the Pure Water Project Las Virgenes-Triunfo. This report serves to provide a summary of the progress to-date on the work performed by Jacobs Engineering Group, Inc., including major monthly milestones, key program accomplishments, key considerations and a look-ahead of upcoming activities.

FISCAL IMPACT:

No

ITEM BUDGETED:

No

Prepared by: Eric Schlageter, Principal Engineer

ATTACHMENTS:

Monthly Update on Pure Water Project Las Virgenes-Triunfo

To: Las Virgenes-Triunfo JPA Board of Directors

From: Jennifer Phillips, Jacobs Engineering Group Inc.

Date: March 23, 2021

Re: Pure Water Project JPA Board Monthly Update

Pure Water Project Overview

The Pure Water Project (PWP) is an opportunity to proactively address three major challenges facing the Las Virgenes-Triunfo JPA:

- comply with more stringent regulatory requirements for discharging to Malibu Creek,
- balance seasonal variation of recycled water demand, and
- create a valuable resource to supplement the region's water supplies, enabled by California's cutting-edge reservoir water augmentation program.

By 2030, the innovative plan is to have an operational advanced water treatment facility (AWTF) to treat tertiary effluent from the Tapia Water Reclamation Facility for indirect potable reuse, and convey the product water to the Las Virgenes Reservoir, where it will be blended with Metropolitan Water District (MWD) supply. The current phase (Phase 1) of the project provides the programmatic process to manage such a large, complicated project, focusing on the technical, regulatory, environmental, financial, and procurement strategies to provide a foundation with more cost and project delivery clarity. Each month the Project team will provide a status report to communicate major milestones, accomplishments for the previous month, planned work for the next month, and potential challenges.

Monthly Major Milestones

- Conducted a Collaborative Delivery Model Workshop on March 8, 2021 with LVMWD staff to prepare for the March 30, 2021, JPA Board Special Session. On March 30, the PWP team will provide benefits, risks, and comparisons of traditional Design-Bid-Build (DBB) to collaborative delivery through Construction Management at Risk (CMAR), Progressive Design Build (PDB) and Fixed Price Design Build (FPDB). The benefits and drivers of collaborative delivery models include having early cost and schedule certainty, using technology innovations, engaging the contractor earlier, meeting regulatory deadlines, and managing risks and changes.
- Conducted PWP Readiness Assessment Workshop on March 8, 2021 with the PWP team. This workshop reviewed and evaluated existing PWP technical studies and reports, including the AWTF basis of design, Title XVI report, Siting Evaluation, and Reservoir Modeling. Purpose of this workshop was to understand the originally defined PWP baseline project, identify potential gaps and opportunities, and discuss technical recommendations that regulatorily "future-proof" the AWTF while meeting PWP goals.
- Conducted 2 of 3 Risk Assessment and Management Workshops on March 15 and 16, 2021 with the PWP team to introduce risk management development strategies, review risk

assessment and risk register development approach, brainstorm on potential project delivery impacts, and to identify potential external, internal, supplier, technical, financial, and management risks to populate the PWP's Risk Register. Qualitatively assessed the impacts, benefits and mitigation needs for potential risks and opportunities. Risks and opportunities were categorized depending on rationalization probability, which is the potential or chance that the risk/opportunity will materialize as either a "real project problem or benefit," and thus require mitigation and/or potential JPA Board, risk owner, or PWP Team actions.

- Updated PWP Communication Plan and submitted to LVMWD staff for review and agreement. PWP Management Team initiated biweekly meetings with LVMWD Public Outreach Department to discuss innovative ways to engage the public and outreach needs during program delivery implementation phases – from siting, routing, permitting, design, construction, operations, and PWP turnover.

Key Program Accomplishments Last Month

Following is a summary of key March 2021 program accomplishments. Many PWP team meetings occurred in March to plan, coordinate and implement the following activities:

March Accomplishments:

Programmatic:

- **Risk Assessment and Management Workshop 1** and **Workshop 2** on March 15 and 16, 2021, respectively, with LVMWD staff. Purpose was to identify and assess potential risks and opportunities for PWP. The benefits are rationalized by early risk identification, assessment and mitigation strategies that minimize PWP cost and schedule delays, work stoppages, and negative regulatory or delivery impacts. Focus in these workshops was to minimize adverse impacts on program cost, safety, scope, schedule, and quality. **Workshop 3,** scheduled for April 5, 2021, will to quantify and estimate each risk and opportunity's financial impact or benefit that will be used to better quantify the PWP's overall delivery contingency needs. The latter provides the true costs consideration for the PWP implementation and delivery needs.
- Developing an "independent" PWP's overall budgetary **cost estimate** using Jacobs cost estimators and input from the Readiness Assessment Workshop for comparing original planning baseline cost estimates.
- Preparing and finalizing draft **Program Management Plan** (PMP) for PWP delivery team review. The PMP documents and clarifies the project delivery related processes, procedures, team roles and responsibilities, to manage this program effectively and efficiently.
- Developing a "working" **Document Management Portal and Performance Tracking Dashboard**. The dashboard will provide a near real-time PWP and projects costs and schedule delivery summary including tracking schedule and cost performance indexes, both project and program actual spending, estimated cost to complete, and needed cash flow projections for planning purposes and spending accountabilities.

Technical:

- Conducted **PWP Readiness Assessment** workshop on March 8, 2021 that reviewed and evaluated existing PWP technical studies and reports, including the AWTF basis of design, Title XVI report, Siting Evaluation, and Reservoir Modeling. The purpose of this

workshop was to understand the originally defined PWP baseline project identify potential gaps and opportunities, and discuss technical recommendations.

- Discussing current **Reservoir Operation** with LVMWD staff to understand current algal blooms and existing constraints to help guide modeling efforts, design strategies, and regulatory strategy of the reservoir operation under the PWP delivery.
- Continuing **Emergency Discharge Options and Strategies** development for PWP delivery team review. PWP delivery team inputs are needed to evaluate alternate discharge capacity options for accepting flows above the capacity at the AWTF, or during an emergency condition. During March, provided preliminary evaluation to the Readiness Assessment team. Began evaluating the LA River Discharge Point 005 capacity and to develop draft options map for managing the flow.

Regulatory/Environmental:

- Preparing preliminary regulatory strategy based on findings from the Readiness Assessment workshop.
- Preparing preliminary environmental strategy for programmatic CEQA approach based on findings from the Readiness Assessment workshop.
- Participating in Readiness Assessment delivery to clarify impacts to regulatory permitting delays or gaps.

Financial:

- Developed an **Initial PWP Cost-Loaded Schedule** using 2018 Title XVI feasibility report's costs and schedule information. This effort provides PWP Program Controls an opportunity to develop both project and program delivery tracking system platform and PWP performance and progress tracking reporting framework, tools and processes. These actions are planned to be applied to the PWP approved projects from approved Readiness Assessment Study Recommendations. Program Controls has established initial baseline costs and schedules per the Title XVI report to understand cost allocations and develop a process to update with more refined numbers and recommended projects using a standardized Work Breakdown Structure (WBS) approach.
- Awaiting PWP project cost estimates for the Readiness Assessment Recommendations to update the **PWP-Focused Financial Model.** This model is proposed to establish **PWP's Cost Loaded Master Schedule and Baseline Cost.** Key benefits in using this model include: doing baseline costs and cost impacts tracking, managing operational
- and capital cash flow needs, and optimizing PWP project delivery sequencing, delivery and cash flow to meet PWP goals and JPA's affordability funding curve.

Key Program Accomplishments Last Month (continued)

Procurement:

- Conducted workshops on **Collaborative Delivery** for LVMWD and JPA Board considerations. Benefits and drivers for each model are highlighted in meeting the PWP vision, mission, and goals including cost and schedule certainty, innovation, timing of contractor engagement, meeting regulatory deadlines, cash flow constraints, and managing risk and maintaining delivery control.

Public Outreach:

- Submitted updated PWP communication plan for LVMWD review and agreement.
- Conducted regular check-ins for public outreach related to the PWP vision and mission.

Key Considerations

- **Reservoir Operation** – operating the reservoir closer to anticipated flows will help ascertain impacts on Westlake Filtration Plant and considerations for design.
- **Conveyance Coordination** – initiating early discussions with cities and agencies in the alignment corridors to understand desire to work together to minimize schedule impacts.
- **Water Augmentation and Integration Plan** – finding and securing viable supplemental water sources, and establishing Memorandums of Understanding (MOUs)/Agreements with regional parties and partners.
- **Brine Management** – establishing MOUs/Agreements with regional parties and partners for brine disposal to the Calleguas Regional Salinity Management Pipeline.
- **Minimizing disinfection byproducts** – developing cost effective treatment strategies to mitigate formation and achieve regulatory compliance.
- **Review of budgetary costs for the Pure Water Project** – addressing total costs to deliver the PWP as envisioned by the JPA in today's market, supply chain, regulatory requirements, and optimized project delivery for conveyance alignments and treatment approaches.

Look Ahead

The Project Team is developing the main components of the PWP Program Implementation Plan (PIP) for LVMWD staff and JPA Board presentation by the end of April 2021. The PIP sets the PWP's delivery execution roadmap that includes Readiness Assessment Recommendations, project delivery approaches, regulatory permitting strategy, environmental compliance strategy, financial cash flow needs scenarios, baseline cost-loaded schedule, and proposed public outreach communication plan. This provides the clear path forward for PWP over the next 18 months. This is a key milestone deliverable for the PWP and will be summarized for approval at the June 1 Board Meeting.

Upcoming JPA Board Meetings:

a. April 28, Special Session – PIP Overview
b. June 1, Board Meeting – PIP Adoption

Legislation and LVMWD/JPA Position Dashboard as of 3.29.21

Bill	Author	Current Position	Description	Action	Date	Comment
AB 1434	Friedman	Oppose	Water conservation targets	Letter to author etal	3/5/2021	
AB 1500	Garcia	Support if Amend	Funding for recycle water projects via bond			
AB 377	Rivas	Oppose	All California surface waters shall be fishable, swimmable, and drinkable by January 1, 2050.	Opposition via ACWA/CASA		
AB 442	Mayes	Support	Exemptions for MWD for grading operations	pending		
AB 59	Gabriel	Oppose	Additional restrictions on the imposition of fees/charges	pending		waiting to see positions taken by other organizations
AB 703	Rubio	Support	Resonable Brown Act provisions	Letter to author etal	3/5/2021	
AB 818	Bloom	Support	Restrictions on flushable wipes	Letter to author and Toxics Committee	pending	
HR 1319	various	Support	Paid sick leave and federal payroll tax credit	Letters Padilla and Feinstein	3/8/2021	
HR 737	various	Support	RENEW WIIN (Infrastructure Funding)	Letters to Brownley, Lieu, Valadao	3/24/2021	
HR 1015	various	Support	Water Recycling Improvement and Investment Act	Letters to Brownley, Lieu, and Napolitano	3/24/2021	
S 479	Wicker	Support	Lifting Our Communities through Advance Liquidity for Infrastructure Act of 2021	Letters to Wicker, Stabenow, Feinstein, Padilla, Lieu and Brownley	3/24/2021	
S 4129	Wicker	Support	Restores advance refunding of municipal bonds	pending		
SB 222	Dodd	Nuetral	LIRA/Potential Water Tax			No active position at this time
SB 223	Dodd	Nuetral	Shut-Off Restrictions on small utilities			No active position at this time
SB 230	Portantino	Support	Use scientific method to address constituents of emerging concern	Signed onto MWD letter		
SB 273	Hertzberg	Support	Formation of Agencies for Sewer Diversions	pending		dave working on
SB 323	Caballero	Support	Statute of limitation for water/sewer rates			Signed on to coalition letter with ACWA
SB 45	Portantino	Support if Amend	Funding for recycle water projects via bond	Letter to Stern/NRW Comm.	3/8/2021	cc Portantino
State Budget	Newsom	Support if Amend	Funding allocation for delinquent utility bill assistance	Letter to Stern etal	2/24/2021	

BEST BEST & KRIEGER LLP
ATTORNEYS AT LAW

To: Las Virgenes-Triunfo JPA Board of Directors and Staff
From: John Freshman, Ana Schwab, and Lowry Crook
Date: March 23, 2021
RE: Federal Report

Legislation

LOCAL Act of 2021

Senators Roger Wicker (R-KY) and Debbie Stabenow (D-MI) introduced S. 479 Lifting Our Communities through Advance Liquidity for Infrastructure (LOCAL Infrastructure) Act of 2021. The legislation would amend the federal tax code to allow state and local governments to refinance bond debt and receive advance refunding. The advance refunding would allow state and local governments to refinance outstanding municipal bonds to more favorable borrowing rates or conditions before the end of the initial bond term on a tax-exempt basis. This tax allowance will result in more free cash flow that can be used for public projects. The bi-partisan bill is supported by Republicans and Democrats and has 16 co-sponsors so far.

The Return of Earmarks

House Appropriations Chair DeLauro released the new rules for Community Project Funding, also known as earmarks. Chair DeLauro set rules aimed to increased transparency and accountability in order to prevent the spending corruption that led to its ban in 2011. The rules would set limits for earmarks, including: Community Project Funding cannot exceed 1 percent of discretionary spending, earmarks are banned for for-profit entities, and members can request up to 10 requests per fiscal year. In addition, the Government Accountability Office (GAO) will audit a sample of enacted community project funding and report its findings to Congress. Members will submit their requests online, which will be publicly available. Prior to a subcommittee markup or full committee consideration, a list of the considered projects will be posted by the Committee.

House Republicans voted to allow their GOP members to request member-directed projects in their districts for appropriations bills for the fiscal year that starts on October 1, and in transportation and water infrastructure bills. The Republicans in the Senate have not yet announced whether they will use earmarks. Senate Appropriations Chair Patrick Leahy (D-VT) stated he would be willing to split the funding evenly between Democrats and Republicans. Senate Appropriations Chair Richard Shelby (R-AL) stated he wants to ensure that an adoption of earmarks would be fair and transparent. Senate Republicans should make their decision in the upcoming weeks.

Infrastructure Package on the Horizon

Lawmakers are now focusing on the next surface transportation bill, which is set to expire at the end of September. President Biden campaigned on a $2 trillion infrastructure plan that includes clean energy and major nation-wide investments in highways, bridges in roads. Transportation Secretary Pete Buttigieg said that discussions are already underway for the package and he does not want to wait until the deadline. In Congress, lawmakers are committed to making major investments in broadband and aiding rural communities that are struggling with aged infrastructure. The House and Senate have already held several hearings on infrastructure issues.

Additionally, House Transportation and Infrastructure Chair Peter DeFazio (D-OR) has stated he wants water and wastewater to be a part of the package. In the Senate, Environment and Public Works Chairman Tom Carper (D-DE) is working with Republicans and Democrats to create a bipartisan drinking water and clean water bill, including wastewater programs. A major piece of the legislation will be to supplement the Drinking Water State Revolving Fund and the Clean Water State Revolving Fund. These individual pieces of legislation could become part of a larger infrastructure package.

COVID-19 Relief: The American Relief Plan Act of 2021

Below is a portion of the legal alert that BB&K published on the American Relief Plan Act of 2021:

On March 11, President Biden signed into law a $1.9 trillion COVID-19 relief package, the American Rescue Plan of 2021, aimed to provide financial relief to Americans and incentives to stimulate the economy as a result of the COVID-19 pandemic. The latest package is expansive in scope, including spending for federal unemployment benefits, state and local aid, provisions for school reopenings, tax credits for employers and families, another round of direct payment for Americans and an expansion of vaccinations and virus-testing programs. This relief package may be the last package to focus on immediate financial relief provisions. Subsequent packages will be long-term and aimed toward economic recovery and rebuilding infrastructure.

State and Local Aid

The package includes nearly $360 billion in aid for state, local, tribal and territorial governments. Unlike previous COVID-19 relief measures, this package provides direct financial assistance to previously excluded smaller cities, counties and municipalities. Significantly, the aid may be used to mitigate costs incurred to address the COVID-19 emergency and its economic effects, including: revenue losses, pay for essential workers and investments for water, sewer and broadband infrastructure.

The state and local aid is divided as follows:

- $195.3 billion for states and Washington, D.C.

- $65.1 billion for counties
- $45.6 billion for cities
- $20 billion for federally recognized tribal governments.
- $4.5 billion for territories

Local government funding will be dispersed among counties, metropolitan cities and smaller cities and towns with fewer than 50,000 people. Counties will receive $65.1 billion, metropolitan cities (larger cities entitled to receive direct Community Development Block Grants) will receive $45.6 billion and smaller cities and towns will receive $19.5 billion. The U.S. Treasury Department will pay funds directly to counties and metropolitan cities. The funding for smaller cities and towns will be distributed to states, which will then distribute the pre-determined allocations to the local governments and counties. The U.S. House and Senate have provided estimates of how much funding each state, county and city is expected to receive. States, counties and municipalities have authority to transfer the funds to private nonprofit organizations, public benefit transportation corporations and a special-purpose unit of state or local government.

The direct assistant funds to local governments are restrictive as they are to be used to:

- Respond to or mitigate the public health emergency with respect to COVID-19 or its negative economic impacts, including assistance to households, small businesses and nonprofits;
- Respond to workers performing essential work during the COVID-19 public emergency, including premium pay for eligible workers of the metropolitan city, nonentitlement unit of local government or county;
- Cover lost revenue due to the COVID-19 public health emergency relative to revenues collected in the most recent full fiscal year and
- Make necessary investments in water, sewer or broadband infrastructure.

The city must certify that it requires the federal assistance provided from the legislation to effectively carry out the activities above and that the city intends to use the money received consistent with the criteria above. The Treasury Department is expected to release guidance on what a city will have to show to meet each of the criteria provided for in the legislation.

Tax Credit for Paid Sick and Family Leave

The package extends the paid sick and family leave credits that were created in the Families First Coronavirus Response Act in 2020. The current package extends the credits starting on April 1, through Sept. 30. This package expands the eligibility of the payroll tax credit to include state and local governments and public agencies during that period. The package also increases the family leave credit to $12,000 per worker, which was previously $10,000 per worker.

Water and Wastewater Assistance
Low Income Home Energy Assistance Program: The Act provides $4.5 billion for a rent and utility assistance program administered by the Department of Health and Human Services. Traditionally, LIHEAP funds are distributed to states, and then distributed to grantees, such as community action programs. The distribution of funds varies depending on the state. Applicants can use the financial assistance for rent and utility bills, including water and wastewater.

Water and Wastewater Low-Income Grants: The bill provides $500 million for low-income water and wastewater grants. Funds will be allotted to states and tribes based on percentage of households with income less than 150 percent of the federal poverty line.

Proposed Rule: Clean Water Act Effluent Limitations Guidelines and Standards for the Organic Chemicals, Plastics and Synthetic Fibers Point Source Category

The U.S. Environmental Protection Agency (EPA or Agency) is initiating further data collection and analysis to support potential future rulemaking, under the Clean Water Act (CWA), relating to the effluent limitations guidelines, pretreatment standards and new source performance standards applicable to the Organic Chemicals, Plastics and Synthetic Fibers (OCPSF) point source category to address discharges from manufacturers of per- and polyfluoroalkyl substances (PFAS) and is considering revising the same for formulators of PFAS. PFAS are a group of man-made organic chemicals. Some PFAS compounds are persistent in the environment and in the human body. Analysis of animal studies and human epidemiological research suggest that exposure above certain levels to some PFAS may be associated with adverse human health effects. The Agency has identified several industries with facilities that are likely to be discharging PFAS in their wastewater, including OCPSF manufacturers and formulators. This advance notice of proposed rulemaking (ANPRM) provides for public review and comment on the information and data regarding PFAS manufacturers and formulators that EPA has collected to date. EPA is requesting public comment on the information and data presented in this ANPRM. EPA is also soliciting additional information and data regarding discharges of PFAS from these facilities to inform future revisions to the wastewater discharge requirements that apply to the OCPSF point source category. Comments must be received on or before May 17, 2021.

LAS VIRGENES-TRIUNFO - HIGH PRIORITY LEGISLATION IN THE 117TH CONGRESS
THROUGH MARCH 17, 2021

LEGISLATION	SUMMARY	STATUS	POSITION
S.29 Local Water Protection Act	A bill to amend the Federal Water Pollution Control Act to reauthorize certain programs relating to nonpoint source management, and for other purposes.	Introduced by Sen. Amy Klobuchar (D-MN) – January 22, 2021	
S.Res.17 A resolution expressing the sense of the Senate that clean water is a national priority and that the April 21, 2020, Navigable Waters Protection Rule should not be withdrawn or vacated.	Expressing the sense of the Senate that clean water is a national priority and that the April 21, 2020, Navigable Waters Protection Rule should not be withdrawn or vacated.	Introduced by Sen. Joni Ernst (R-IA) – January 27, 2021	
H.R.616 Emergency Water is a Human Right Act	To prohibit water shutoffs during the COVID-19 emergency period, provide drinking and waste water assistance to households, and for other purposes.	Introduced by Rep. Rashida Tlaib (D-MI) – January 28, 2021	
H.R.535 Special District Provide Essential Services Act	The bill would require the state's to direct at least five percent of future Coronavirus Relief Fund (CRF) allocations to special districts within their state.	Introduced by Rep. John Garamendi (D-CA) – January 28, 2021	*SUPPORT*
S.91 Special Districts Provide Essential Services Act	*(companion bill to H.R. 535)*	Introduced by Sen. Kyrsten Sinema (D-AZ) – January 28, 2021	*SUPPORT*

LEGISLATION	SUMMARY	STATUS	POSITION
H.R.737 To extend the authorities under the Water Infrastructure Improvements for the Nation Act of 2016 providing operational flexibility, drought relief, and other benefits to the State of California.	The RENEW WIIN Act would extend the general and operations provisions of Subtitle J of the WIIN Act and extend the provision requiring consultation on coordinated operations of the Central Valley Project and State Water Project. The legislation would also extend the authorization of appropriations for water storage projects that the Secretary of the Interior finds feasible.	Introduced by Rep. David Valadao (R-CA) – February 2, 2021	*SUPPORT*
H.R. 692 Recognition of Local Interests in NEPA Decision Making	To amend the National Environmental Policy Act of 1969 to provide a rule to determine venue for a proceeding for judicial review of certain agency actions.	Introduced by Rep. Liz Cheney (R-WY) – February 2, 2021	
H.R.848 GREEN Act of 2021	To amend the Internal Revenue Code of 1986 to provide incentives for renewable energy and energy efficiency, and for other purposes.	Introduced by Rep. Mike Thompson (D-CA) – February 4, 2021	
H.Res.104 Recognizing the duty of the Federal Government to implement an agenda to Transform, Heal, and Renew by Investing in a Vibrant Economy ("THRIVE")	Recognizing the duty of the Federal Government to implement an agenda to Transform, Heal, and Renew by Investing in a Vibrant Economy ("THRIVE").	Introduced by Rep. Debbie Dingell (D-MI) – February 5, 2021	
S.Res.43 A resolution recognizing the duty of the Federal Government to implement an agenda to Transform, Heal, and Renew by Investing in a Vibrant Economy ("THRIVE")	Recognizing the duty of the Federal Government to implement an agenda to Transform, Heal, and Renew by Investing in a Vibrant Economy ("THRIVE").	Introduced by Rep. Edward Markey (D-MA) – February 8, 2021	

LEGISLATION	SUMMARY	STATUS	POSITION
H.R.1015 Water Recycling Investment and Improvement Act	To extend the authorization of the Bureau of Reclamation – Title XVI competitive grants program and increase the authorized funding level from $50 million to $500 million. Further, the legislation expands the geographic scope requirement that projects be located in sustained drought or disaster areas. The legislation also removes the requirement that Congress sign-off on each selected project, and modernizes the individual program funding cap from $20 million to $30 million.	Introduced by Rep. Grace Napolitano (D-CA) – February 11, 2021	*SUPPORT*
H.R.988 Recreational Lands Self-Defense Act of 2021	To protect the right of individuals to bear arms at water resources development projects administered by the Secretary of the Army, and for other purposes.	Introduced by Rep. Bob Gibbs (R-OH) – February 11, 2021	
H.R.1066 Wildfire Recovery Act	To amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act to provide flexibility with the cost share for fire management assistance, and for other purposes.	Introduced by Rep. Joe Neguse (D-CO) – February 15, 2021	
S.421 A bill to amend the America's Water Infrastructure Act of 2018 to expand the Indian reservation drinking water program, and for other purposes.	*Text is not yet available.*	Introduced by Sen. Ron Wyden (D-OR) – February 24, 2021	
H.R.1319 American Rescue Plan Act of 2021	To provide for reconciliation pursuant to title II of S. Con. Res. 5.	Introduced by Rep. John Yarmuth (d-KY) – February 24, 2021 Became Public Law No: 117-2 – March 11, 2021	*SUPPORT*

LEGISLATION	SUMMARY	STATUS	POSITION
H.R.1352 To establish a trust fund to provide for adequate funding for water and sewer infrastructure, and for other purposes.	*Text is not yet available.*	Introduced by Rep. Brenda Lawrence (D-MI) – February 25, 2021	
S.479 Lifting Our Communities through Advance Liquidity for Infrastructure (LOCAL Infrastructure) Act of 2021	A bill to amend the Internal Revenue Code of 1986 to reinstate advance refunding bonds.	Introduced by Sen. Roger Wicker (R-MS) – February 25, 2021	*SUPPORT*
S.498 A bill to amend title 54, United States Code, to limit the authority to reserve water rights in designating a national monument.	*Text is not yet available.*	Introduced by Sen. Mike Lee (R-UT) – March 1, 2021	
H.R.1563 To extend the authorities under the Water Infrastructure Improvements for the Nation Act of 2016 providing operational flexibility, drought relief, and other benefits to the State of California.	*Text is not yet available.*	Introduced by Rep. Mike Garcia (R-CA) – March 3, 2021	

LEGISLATION	SUMMARY	STATUS	POSITION
H.R.1679 To prohibit the Secretary of the Interior and the Secretary of Agriculture from conditioning any permit, lease, or other use agreement on the transfer of any water right to the United States, and for other purposes.	*Text is not yet available.*	Introduced by Rep. Lauren Boebert (R-CO) – March 9, 2021	
H.R.1804 To amend the public participation requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, and for other purposes.	*Text is not yet available.*	Introduced by Rep. Earl Carter (R-GA) – March 11, 2021	
H.R.1844 To amend the Federal Water Pollution Control Act to ensure that publicly owned treatment works monitor for and report sewer overflows, and for other purposes.	*Text is not yet available.*	Introduced by Rep. Seth Moulton (D-MA) – March 11, 2021	

LEGISLATION	SUMMARY	STATUS	POSITION
H.R.1848 To rebuild and modernize the Nation's infrastructure to expand access to broadband and Next Generation 9-1-1, rehabilitate drinking water infrastructure, modernize the electric grid and energy supply infrastructure, redevelop brownfields, strengthen health care infrastructure, create jobs, and protect public health and the environment, and for other purposes.	*Text is not yet available.*	Introduced by Rep. Frank Pallone (D-NJ) – March 11, 2021	
H.R.1804 To amend the public participation requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, and for other purposes.	*Text is not yet available.*	Introduced by Rep. Earl Carter (R-GA) – March 11, 2021	
S.715 A bill to amend the National Environmental Policy Act of 1969 to require the submission of certain reports, and for other purposes.	*Text is not yet available.*	Introduced by Sen. Mike Lee (R-UT) – March 11, 2021	

LEGISLATION	SUMMARY	STATUS	POSITION
S.716 A bill to amend the National Environmental Policy Act of 1969 to provide for legal reform, and for other purposes.	*Text is not yet available.*	Introduced by Sen. Mike Lee (R-UT) – March 11, 2021	
S.717 A bill to amend the National Environmental Policy Act of 1969 to impose time limits on the completion of certain required actions under the Act, and for other purposes.	*Text is not yet available.*	Introduced by Sen. Mike Lee (R-UT) – March 11, 2021	
S.718 A bill to amend the National Environmental Policy Act of 1969 to reform agency process requirements, and for other purposes.	*Text is not yet available.*	Introduced by Sen. Mike Lee (R-UT) – March 11, 2021	
S.719 A bill to amend the National Environmental Policy Act of 1969 to provide for project delivery programs, and for other purposes.	*Text is not yet available.*	Introduced by Sen. Mike Lee (R-UT) – March 11, 2021	

LEGISLATION	SUMMARY	STATUS	POSITION
H.R.1820 To amend the Federal Water Pollution Control Act to clarify when the Administrator of the Environmental Protection Agency has the authority to prohibit the specification of a defined area, or deny or restrict the use of a defined area for specification, as a disposal site under section 404 of such Act, and for other purposes.	*Text is not yet available.*	Introduced by Rep. Bob Gibbs (R-OH) – March 11, 2021	
H.R.1881 To amend the Federal Water Pollution Control Act with respect to permitting terms, and for other purposes.	*Text is not yet available.*	Introduced by Rep. John Garamendi (D-CA) – March 12, 2021	
H.R. 1821 To amend the Federal Insecticide, Fungicide, and Rodenticide Act and the Federal Water Pollution Control Act to clarify Congressional intent regarding the regulation of the use of pesticides in or near navigable waters, and for other purposes.	*Text is not yet available.*	Introduced by Rep. Bob Gibbs (R-OH) – March 11, 2021	

LEGISLATION	SUMMARY	STATUS	POSITION
H.R.1915 Water Quality Protection and Job Creation Act of 2021	To amend the Federal Water Pollution Control Act to reauthorize certain water pollution control programs, and for other purposes.	Introduced by Rep. Peter DeFazio (D-OR) – March 16, 2021	

April 5, 2021 JPA Board Meeting

TO: JPA Board of Directors

FROM: Engineering and External Affairs

Subject : Public Outreach Strategy: Review of Tools and Tactics

SUMMARY:

Public outreach and the strategies behind it become increasingly important as the JPA continues to expand its footprint in water reuse and recycling, advanced water treatment, renewable energy, sustainability initiatives and environmental stewardship. At the meeting, staff proposes to provide the Board with an understanding of the JPA's overarching outreach strategy, which is not specific to any single program or project. Effective implementation of the outreach strategy and the adoption of new tools and tactics is critical to keep the JPA's customers and various stakeholders informed. Ultimately, a successful outreach strategy will garner the greatest level of trust among the JPA's customers and support the continued success of JPA projects and programs.

FISCAL IMPACT:

No

ITEM BUDGETED:

No

FINANCIAL IMPACT:

Sufficient funds are available in the adopted Fiscal Year 2020-21 JPA Budget to implement the public outreach strategy.

DISCUSSION:

Public outreach requires a well-thought-out strategy. The JPA's Outreach Team is part of the Engineering and External Affairs Department of Las Virgenes Municipal Water District and provides messages, materials, information and external campaigns to garner support and trust among customers for the JPA's functions and activities. Outreach activities are guided by the four-step public relations process called the RPIE method, which is an accepted strategy by the Public Relations Society of America and used by public relations professionals across the globe. RPIE is an acronym that stands for research, planning, implementation and evaluation. The process allows practitioners to take a project or subject and create a plan with steps that can be followed to achieve a specific outcome. All outreach campaigns performed by the

Outreach Team use the RPIE method to make choices and decisions when promoting activities. Staff has a variety of tools and tactics available to support the most effective outreach campaign, depending on the goals and objectives. At the Board meeting, staff will describe some of the JPA's major public outreach tools and tactics, along with their strengths and weaknesses.

Prepared by: Mike McNutt, Public Affairs and Communications Manager

ATTACHMENTS:

PowerPoint Presentation

Public Outreach Strategy

The Joint Powers Authority

Wastewater Treatment
Recycled Water
Biosolids Composting
Advanced Water Treatment

What is Public Relations and Why is It Important?

"Public relations is the management function that establishes and maintains mutually beneficial relationships between an organization and the publics on whom its success or failure depends." (EPR p.5)

Public relations fosters and maintains relationships between your organization and publics by finding common interests. Failures usually stem from communication breakdowns. (APR Study Guide p.16)

EPR 11th edition or current Broom, G. M., & Sha, B-L (2013). Cutlip and Center's Effective Public Relations (11th or current edition). Upper Saddle River, N.J.: Pearson Education

APR STUDY GUIDE,2018 UNIVERSAL ACCREDITATION BOARD, PAGE 16

Typical 12 Functions of Public Relations

Competencies

- 1. Trusted counsel — Advise and anticipate.
- 2. Internal communication — Engage employees and build trust.
- 3. Media relations — Develop public trust and support by working through journalists and bloggers.
- 4. Community relations — Establish public trust and support by working with community groups.
- 5. External communication to customers/stakeholders/investors — Build public trust and support.

Public Relations Four-Step Process (RPIE)

- **6. Research**
- **7. Plan**
- **8. Implement, execute and communicate**
- **9. Evaluate**

Other

- 10. Publicity and special events
- 11. Issues management
- 12. Crisis communication

APR STUDY GUIDE,2018 UNIVERSAL ACCREDITATION BOARD, PAGE 16

Who Are Our Publics?

- Any group of people tied together by some common factor or interest.
- Can be often but not always broken into 4 groups:

1. **All-issue publics** who are active on all issues (active).
2. **Apathetic publics** who are inattentive and inactive on all issues (non-public).
3. **Single-issue publics** who are active on a limited number of issues (latent).
4. **Hot-issue publics** who respond and become active after being exposed to an issue (aware).

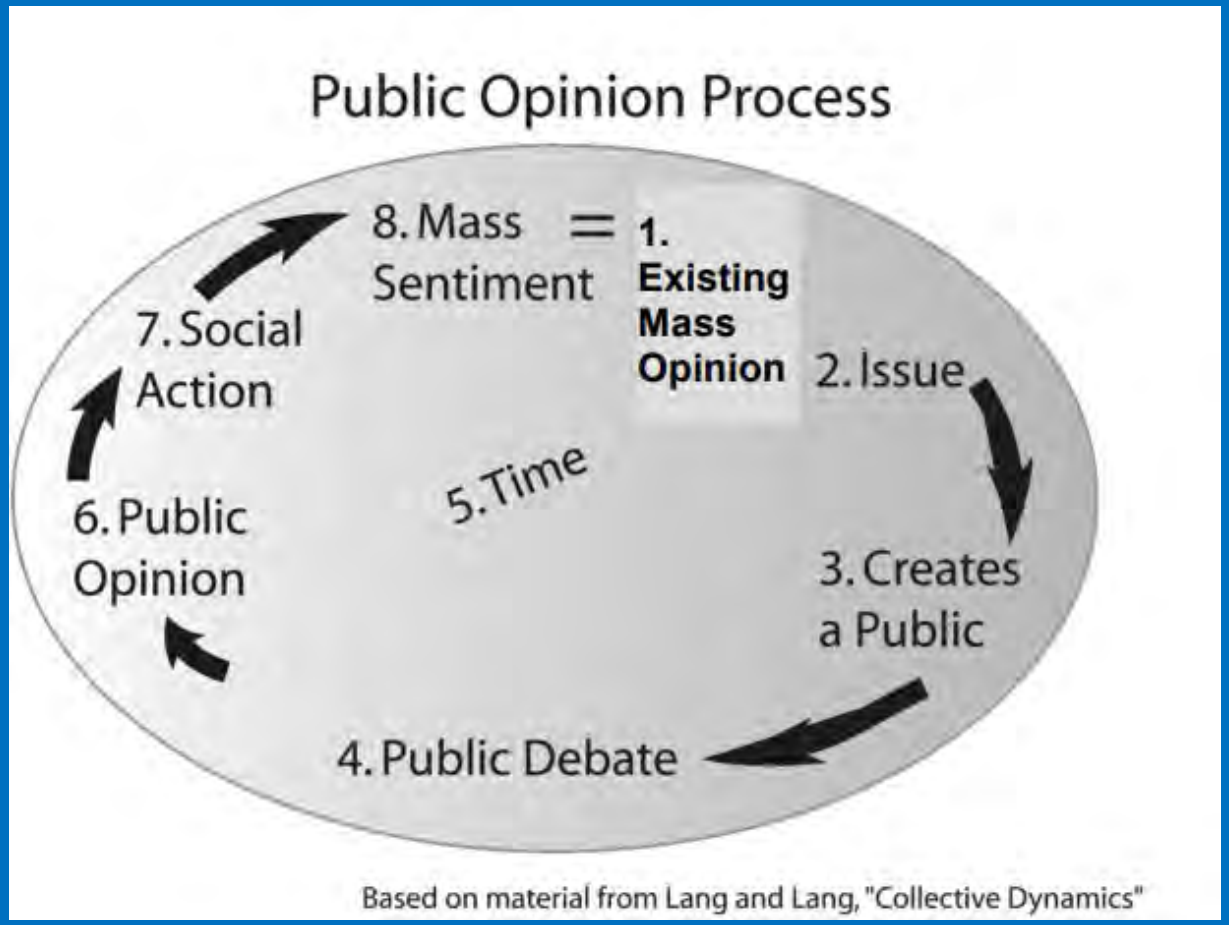
APR STUDY GUIDE,2018 UNIVERSAL ACCREDITATION BOARD, PAGE 52
(EPR 11th, p. 268)

Each Public Requires a Different Strategy

- How do we identify approaches to each public?
  - Understand the following four components that make public opinion…
  1. **Opinions** are observable (verbal) responses or statements concerning issues or topics.
  2. **Attitudes** are covert predispositions governing likes and dislikes.
  3. **Beliefs** are assumptions people live by. Beliefs are understandings about the way things in the world work or should be.
  4. **Values** are explicit standards for evaluating right or wrong, desirable or undesirable.

(EPR 11th, p. 268)

What is the Public Opinion Process?



Lang, G. E., & Lang, K. (1961). Collective dynamics. New York: Thomas Y. Crowell.

RPIE

- Research – Primary, Secondary, (Firsthand or looking at what others have already done)
- Planning – What are the steps that will be taken to achieve outcome?
- Implementation – Do the work
- Evaluation – How did it go?
- Process – *Identification - Planning*

1. *Goal – a broad state of being*
2. *Objective - who does what, by how much, and when*
3. *Strategy – mechanism to achieve an objective*
4. *Tactic – specific, concrete actions to achieve a strategy outcome*
    - *The ladder is the strategy and the rungs are the tactics*

Example: Pure Water

- Research – **Primary** – Working Groups, **Secondary** – What are other water agencies doing to promote tap water & what is the bottled water industry doing to promote its product
- Planning – Brand, message, content creation, know publics, timeframe, identify roles
- Implementation – Role it out
- Evaluation – Often the tricky one

Our Outreach Mechanisms

- Print Media
- Social Media
- Radio
- Video
- Digital Advertising
- Brochures
- Advertising

How do we encourage success?

- Strategic Partnerships
- Consistency with messaging
- Bring public into the mix
- Diversify our outreach portfolio (digital platforms, authorities)
- Transparency
- Involve staff and Directors

Public Outreach also means Creativeness and Thoughtfulness

- Should not have too many messages all at once (like the banners on the website) – time on homepage is limited
- Restraint on how often we send e-notifications to all of our customers
- Next Door for limited messaging (press releases, event promotion) but utilize for emergencies (used for Boil Order during Woolsey Fire)
- Utilize a mix of venues to capture different audiences
- Increase digital advertising
- Create and post “fun” short videos that capture people’s attention

Next Steps

- Begin to use Digital Advertising options and platforms
  - Increase awareness, impressions, educate
- Analyze analytics (when available) to make better informed choices
- Digitize all resources that are printed for use on digital platforms
- Consider “alternative” options for messaging
  - Billboards, car wraps, buses, Coinstar, etc…
- Have fun and be creative

Thank You!

April 5, 2021 JPA Board Meeting

TO: JPA Board of Directors

FROM: Engineering and External Affairs

Subject : Rancho Solar Field Facility Landscaping Project: Final Acceptance

SUMMARY:

On November 2, 2020, the JPA Board awarded a construction contract to Martinez Landscaping Company, Inc, in the amount of $70,230, for the Rancho Solar Field Facility Landscaping Project. The work is now complete, and there are no significant outstanding issues to prevent final acceptance of the project. Staff recommends authorization for the Administering Agent/General Manager to execute a Notice of Completion and release the retention as stipulated in the contract documents.

RECOMMENDATION(S):

Authorize the Administering Agent/General Manager execute a Notice of Completion and have the same recorded; and, in absence of claims from subcontractors or others, release the retention, in the amount of $3,500.88, 30-calendar days after filing the Notice of Completion for the Rancho Solar Field Facility Landscaping Project.

FISCAL IMPACT:

Yes

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

The total cost of the project is $110,235.98, which is funded through the Rancho Solar Generation Project Phase II. The JPA will be reimbursed by Borrego Solar for $100,000 of the project cost through an allowance that was incorporated in the approved Power Purchase Agreement. The remaining project cost, in the amount of $10,235.98, will be allocated 70.6% to LVMWD and 29.4% to Triunfo Water & Sanitation District.

DISCUSSION:

The JPA Board approved the Rancho Solar Generation Project Phase II on November 15, 2018. The project is located adjacent to the existing, one-megawatt Phase I solar facility in the

north canyon of the Rancho Las Virgenes Farm Sprayfields. It adds an additional four megawatts of solar generation capacity to the existing facility for a total combined generation capacity of five megawatts. The Phase II project is expected to save customers more than $10 million over a 25-year period, while providing clean energy for water distribution and wastewater treatment. The reduction of greenhouse gas emissions by utilizing clean, renewable energy will amount to the equivalent of removing 1,200 cars from the road or planting 6,600 acres of trees.

One component of the project was landscaping improvements along Las Virgenes Road to help screen the expanded solar facility from public view. The design component for the landscaping improvements was completed by L. Newman Design Group. The project included grading and berm construction; installation of a new irrigation system; planting of shrubs and groundcover; and maintenance for a one-year post-installation period.

On November 2, 2020, the JPA Board awarded a construction contract to Martinez Landscaping Company, Inc, in the amount of $70,230, for the landscaping improvements. The project was timed to closely follow completion of construction for the solar field, so the new landscaping would be installed before the end of the wet season to allow for the new plantings to establish. At the direction of the JPA Board, staff performed additional public outreach to local residents announcing the initiation of the project and benefits to the community.

The landscaping project is now complete, and it is recommended that the Board accept the project as final. Staff reviewed the completed work with a representative from L. Newman Design to confirm that all elements of the design had been completed. No major issues were found during the walkthrough, and the few items that warranted further attention were referred to Martinez Landscaping for completion as part of the one-year warranty period, which was administratively approved to begin on February 3, 2021.

The original contract with Martinez Landscaping was for $70,230. During the course of the work, two change orders were administratively approved. Change Order No. 1 was to install sleeves for irrigation lines that were subject to truck traffic and to regrade an existing berm to eliminate ponding during rain events. Change Order No. 2 was for placement of rock in a channel to further improve drainage and prevent erosion.

Following is a summary of the change orders, construction cost and total project cost.

Description	**Amount**	**Approved**
Original Contract	$70,230	11/9/2020
Change Order No. 1	$4,151.34	12/15/2020
Change Order No. 2	$2,116.18	2/5/2021
Total Construction Cost	$76,497.52	
Design, Labor, G&A Cost	$33,738.46	
Total Project Cost	**$110,235.98**	

The project was funded as part of the Rancho Solar Generation Project Phase II. The JPA will be reimbursed for the majority of the project cost, including design and construction, by Borrego Solar through an allowance of up to $100,000 that was incorporated in the approved Power Purchase Agreement. It is recommended that the Board authorize the Administering Agent/General Manager to file the Notice of Completion and release the retention as

stipulated in the contract documents.

The landscaping work will help to mitigate the visual impact of the solar field and allow the project to blend more readily with the surrounding environment.

Prepared by: Oliver Slosser, Senior Engineer

ATTACHMENTS:

Notice of Completion

RECORDING REQUESTED BY

Las Virgenes Municipal Water District

AND WHEN RECORDED MAIL TO

Name Susan Brown
Street Address Las Virgenes Municipal Water District
4232 Las Virgenes Road
City & State Zip Calabasas, CA 91302

T 420 LEGAL (9-94)

SPACE ABOVE THIS LINE FOR RECORDER'S USE

Notice of Completion

NOTICE IS HEREBY GIVEN THAT:

1. The undersigned is the owner of the interest or estate stated below in the property hereinafter described.
2. The full name of the undersigned is Las Virgenes Municipal Water District (NAME).
3. The full address of the undersigned is 4232 Las Virgenes Road, Calabasas CA 91302 (NUMBER AND STREET, CITY, STATE, ZIP).
4. The nature of the title of the undersigned is OWNER IN FEE (E.G., owner in fee OR vendee under contract of purchase OR lessee OR OTHER APPROPRIATE DESIGNATION).
5. The full names and full addresses of all persons, if any, who hold title with the undersigned as joint tenants or as tenants in common are:

Names	Addresses
N/A	

6. The names of the predecessors in interest of the undersigned, if the property was transferred subsequent to the commencement of the work of improvement herein referred to are (OR IF NO TRANSFER WAS MADE, INSERT THE WORD "none"):

Names	Addresses
N/A	

7. A work of improvement on the property hereinafter described was completed on Feb 3, 2021 (DATE).
8. The name of the original contractor, if any, for the work of improvement was Martinez Landscape Co., Inc. (NAME OF CONTRACTOR, OR IF NO CONTRACTOR FOR THE WORK OF IMPROVEMENT AS A WHOLE, INSERT THE WORD "none"). [IF NOTICE COVERS COMPLETION OF CONTRACT FOR ONLY PART OF THE WORK OF IMPROVEMENT, ADD: The kind of work done or material furnished was _____ (GIVE GENERAL STATEMENT, E.G., furnishing of concrete for sidewalks].
9. The property on which the work of improvement was completed is in the City of Calabasas, County of Los Angeles, State of California, and is described as follows: Solar Facility Landscaping Improvement Project (set forth description of jobsite sufficient for identification, using legal description if possible).
10. The street address of the said property is None (NUMBER AND STREET, OR, IF THERE IS NO OFFICIAL STREET ADDRESS, INSERT THE WORD "none".)

Dated: _____, _____.

Las Virgenes Municipal Water District

_____ (SIGNATURE)

_____ (TYPED NAME)

VERIFICATION

I, the undersigned, say:
I am the person who signed the foregoing notice. I have read the above notice and know its contents, and the facts stated therein are true of my own knowledge.

I declare under penalty of perjury that the foregoing is true and correct.

Executed at Calabasas, California, this _____ day of _____, _____.

_____ (SIGNATURE)

DO NOT RECORD

Recommended Procedure in the Preparation of a Notice of Completion

A notice of completion must be filed for record *within* 10 *days* after completion of the work of improvement (to be computed exclusive of the day of completion), as provided in section 3093, Civil Code.

The "owner" who must file for record a notice of completion of a building or other work of improvement means the owner (or his successor in interest at the date of notice is filed) on whose behalf the work was done, though his ownership is less than the fee title. For example, if A is the owner in fee, and B, lessee under a lease, causes a building to be constructed, then B, or whoever has succeeded to his interest at the date the notice is filed, must file the notice.

If the ownership is in *two or more persons as joint tenants or tenants in common,* the notice may be signed by any one of the co-owners (in fact, the foregoing form is designed for giving of the notice by only one co-tenant), but the names and addresses of the other co-owners must be stated in paragraph 5 of the form.

In paragraphs 3 and 5, the full address called for should include street number, city, county and state.

As to paragraph 6, insert the date of completion of the work of improvement *as a whole* if applicable. However, if the notice is to be given only of completion of a particular contract, where work of improvement is made pursuant to two or more original contracts, strike the words "a work of improvement" and insert a general statement of the kind of work done or materials furnished pursuant to such contract (e.g. "The foundations for the improvements").

If the notice is to be given as a notice of completion of the work of improvement *as a whole,* insert the name of the prime contractor, if any, in paragraph 7. No contractor's name need be given if there is no general contractor, e.g., on so-called "owner-builder jobs". However, if the notice is to be given only of completion of a particular contract, where work of improvement is made pursuant to two or more original contracts, insert the name of the contractor who performed that particular contract.

Paragraph 8 should be completed only where the notice is signed by a successor in interest of the owner who caused the improvement to be constructed.

In paragraph 9, insert the *full legal* description, not merely a street address or tax description. Refer to deed or policy of title insurance. If the space provided for description is not sufficient, a rider may be attached.

In paragraph 10, show the street address, if any, assigned to the property by any competent public or governmental authority.

NOTICE OF COMPLETION

CHICAGO TITLE COMPANY

WESTERN DIVISION HEADQUARTERS
245 S. LOS ROBLES AVENUE, SUITE 105
PASADENA, CALIFORNIA 91101-2820
(818) 432-7600

CHICAGO TITLE COMPANY

April 5, 2021 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

Subject : 2020 Bioassessment Monitoring Report: Approval of Purchase Order

SUMMARY:

Since 2006, the JPA has submitted an annual bioassessment monitoring report to the Los Angeles Regional Water Quality Control Board as required by Tapia's NPDES Permit. The report is intended to assess the "eco-health" of the stream by measuring the physical condition of the receiving waters and their biological communities. The work involves sampling and characterizing the habitat potential of the creek, as well as identifying and quantifying the species of benthic macroinvertebrates at eight receiving water stations. In 2010, new requirements were established for the JPA to conduct sampling and taxonomic identification of algal biomass taken from the substrate. This task is labor intensive and requires the use of specialized consultants and laboratories. As a result, the overall cost of the bioassessment monitoring has increased. The cost of the 2020 Bioassessment Monitoring Report is $49,843, which exceeds the $35,000 limit on purchase orders that can be approved by the General Manager. Therefore, staff recommends that the Board authorize the issuance of a purchase order for the work.

RECOMMENDATION(S):

Authorize the Administering Agent/General Manager to approve a purchase order to Aquatic Bioassay Consulting Laboratories, Inc., in the amount of $49,843, for the 2020 Bioassessment Monitoring Report.

FISCAL IMPACT:

Yes

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

Sufficient funds are available for this work in the adopted Fiscal Year 2020-21 JPA Budget.

DISCUSSION:

Bioassessment monitoring for Malibu Creek sampling sites is required by Tapia's NPDES Permit. The monitoring consists of creek site sampling and observations, together with laboratory and data analysis for each site under protocols established by the Surface Water Ambient Monitoring Program (SWAMP) and the U.S. EPA estuarine sampling guidance documents for RSW-MC011D (Malibu Lagoon).

Site observations include stream flow measurements and a physical habitat assessment, which evaluates stream bank conditions, potential sediment impairment and canopy cover. Station R-9, located upstream of Tapia, was dry and not sampled. Physical habitat assessments for the other sites upstream of Tapia were determined to be optimal to suboptimal with Station RSW-001U (directly upstream of Tapia) having the lowest score (marginal) due to sediment deposition and a lack of instream cover. Stations below Tapia's discharge point were determined to be optimal with one site identified as suboptimal.

The laboratory analyses of the site samples identified 4,145 benthic macroinvertebrates from 52 different taxa. The majority of the samples were seed shrimp, marine worms and segmented worms from the Malibu Lagoon (RSW-011D). The upstream sample sites included disturbance tolerant species including segmented worms, seed shrimp, midges, clams, amphipods, mayflies and New Zealand mudsnails. New Zealand mudsnails were found at all sampled sites except for RSW-002D.

Results from the sampling and the laboratory analyses were used to determine scores using the California Stream Condition Index (CSCI) and the Southern California Algae Index of Biological Integrity (SoCA Algae IBI). CSCI scores are determined by the composition of the benthic macroinvertebrate community, while SoCA Algae IBI scores are determined by the abundances and composition of diatom and soft-bodied algae communities. CSCI scores were "possibly altered" for RSW-001U, RSW-013D, and RSW-004D, which is a relatively good score. All other sites scored as "likely altered." Since R-001U and R-013D are located above and below the discharge point, it indicates that the Tapia discharge is not negatively impacting the BMI community.

The SoCA Algae IBI scores for all of the receiving water stations, except for RSW-003D, were low, as they were categorized as "non-reference." RSW-003D exceeded "reference" standards. One of the potential reasons given for low scores in the bioassessment report was the water quality in Malibu Creek. Because of high sulfate and phosphate concentrations in the water due to the influence of the Monterey Formation, there is a detrimental effect on benthic macroinvertebrates.

Attached for reference are copies of the 2020 Bioassessment Monitoring Report and invoice.

GOALS:

Construct, Manage and Maintain All Facilities and Provide Services to Assure System Reliability and Environmental Compatibility

The Bioassessment Report evaluates the ecological health of Malibu Creek.

Prepared by: Brett Dingman, Water Reclamation Manager

ATTACHMENTS:

Invoice from Aquatic Bioassay Consulting Laboratories, Inc.

March 9th, 2021

Brett Dingman, P.E.
Water Reclamation Manager
Las Virgenes Municipal Water District
4232 Las Virgenes Rd.
Calabasas, CA 91302

Dear Mr. Dingman:

In accordance with the agreement between the Las Virgenes Municipal Water District and Aquatic Bioassay and Consulting Laboratories, Inc., we are pleased to present the 2020 Bioassessment Monitoring Report for the Tapia Water Reclamation Facility (MRP No. CI-4760). The enclosed report includes the results for the summer 2020 annual requirements set forth by the California Regional Water Quality Control Board, Los Angeles Region.

Yours very truly,

Scott Johnson
Laboratory Director, Senior Scientist
scott@aquabio.org • (805) 643 5621 ext. 11
29 north olive • ventura • ca 93001
www.aquabio.org

Las Virgenes Municipal Water District
Tapia Water Reclamation Facility
2020 Bioassessment Monitoring Report
(NPDES CA0056014)

Submitted to:

Las Virgenes Municipal Water District
731 Malibu Canyon Rd.
Calabasas, CA 91302

Submitted by:

Aquatic Bioassay and Consulting Laboratories
29 N Olive Street
Ventura, CA 93001

March 2021

Table of Contents

List of Tables

List of Figures

Introduction

Watershed Background

The Malibu Creek watershed is located about 30 miles west of Los Angeles, California and drains an area of 109 square miles. The watershed extends from the Santa Monica Mountains and adjacent Simi Hills to the Santa Monica Bay at Malibu State Beach. Malibu Lagoon, currently about 31 acres in size, occupies the area behind the beach at the mouth of Malibu Creek. The entire watershed lies within Level 3 sub-ecoregion 6 (Southern and Central California Chaparral) within aggregate nutrient ecoregion 3 (USEPA, 2000a). The watershed is a predominately chaparral ecosystem with a Mediterranean climate that includes mild, wet winters and hot, dry summers. Annual precipitation ranges from an average of 13.2 inches near the coast to 25.4 inches in the mountains.

Malibu Creek runs 10 miles from Malibu Lake to Malibu Lagoon. The predominant land cover in the Malibu Creek sub-watershed is open land. The Tapia Water Reclamation Facility (TWRF) is in this sub-watershed and contributes significant flow to the Creek in the winter months. Malibu Creek receives flow from Las Virgenes Creek, which runs eleven miles and drains an area of 12,456-acres. Land cover in the Las Virgenes Creek sub-watershed is predominantly open, with some residential and commercial/industrial land. Malibu Lagoon is located at the mouth of Malibu Creek before its discharge to the Pacific Ocean. The wetland acreage includes 2/3 mile of the creek corridor east of the Pacific Coast Highway and 92 acres of wetland habitat. The Lagoon has been the focus of a remediation effort that has returned it to a more naturally functioning wetland.

Bioassessments

Major issues facing streams and rivers in California include modification of in-stream and riparian structure (hydromodification), contaminated water, and increases in impervious surfaces that has led to the increased runoff to local creeks, streams and rivers. There have been many studies and reports showing the deleterious effects of land-use activities to macroinvertebrate and fish communities (Jones and Clark 1987; Lenat and Crawford 1994; Weaver and Garman 1994; and Karr 1998). A major focus of freshwater scientists has been the prevention of further degradation and restoration of streams to their more pristine conditions (Karr et al. 2000).

Biological communities act to integrate the effects of water quality conditions in a stream by responding with changes in their population abundances and species composition over time. These populations are sensitive to multiple aspects of water and habitat quality and provide the public with more familiar expressions of ecological health than the results of chemical and toxicity tests (Gibson 1996). Furthermore, biological assessments, when integrated with physical and chemical assessments, better define the effects of point-source discharges of contaminates and provide a more appropriate means for evaluating discharges of non-chemical substances (e.g., nutrients and sediment).

Water resource monitoring using benthic macroinvertebrates (BMI) is by far the most popular method used throughout the world. BMIs are ubiquitous, relatively stationary, and their large species diversity provides a spectrum of responses to environmental stresses (Rosenberg and Resh 1993). Individual species of BMIs reside in the aquatic environment for a period of months to several years and are sensitive, in varying degrees, to temperature, dissolved oxygen, sedimentation, scouring, nutrient enrichment, and chemical and organic pollution (Resh and Jackson 1993). BMIs represent a significant food source for aquatic and terrestrial animals and provide a wealth of ecological and bio-geographical information (Erman 1996).

Attached algae have also been used as indicators of biological condition extensively in Europe and United States (Komulaynen 2002; Perrin and Richardson 1997; Cascallar, et al. 2003). As indicators, algae tend to respond to different stressors than BMIs, especially nutrients (Marinelarena and Di Giorgi 2001). In addition, the growth and maturation of algal communities is more rapid than BMIs making their assemblages more representative of recent water quality conditions (Nelson and Lieberman 2002; Robinson and Minshall 1998; Suren et al. 2003).

Program Objectives

This report includes the results of bioassessment monitoring (including both benthic macroinvertebrates (BMIs) and attached algae) conducted for the Las Virgenes Municipal Water District (LVMWD) at eight sampling locations in the Malibu Creek Watershed during the summer of 2020. This monitoring program was initiated, at the request of the Los Angeles Regional Water Quality Control Board (LARWQCB), in compliance with the Tapia Water Reclamation Facilities (TWRF) NPDES permit CA0056014 (MRP No. CI-4760). Bioassessment

monitoring followed the protocols established by the State of California's, Surface Water Ambient Monitoring Program (Ode et al. 2016).

In response to this requirement, Aquatic Bioassay and Consulting Laboratories, Inc. (Aquatic Bioassay) was contracted to conduct sampling in the Malibu Creek Watershed. On July 15th, 16th and August 14th, 2020, Aquatic Bioassay scientists conducted the fourteenth year of bioassessment sampling.

The goal of this program is to:

1. Provide a comparison of the macroinvertebrate and attached algae assemblages on the Malibu Creek to assess the aquatic health of locations both upstream and downstream of the TWRF outfall; and,

2. Evaluate the physical/habitat condition of these sampling sites.

This report includes all the physical, chemical, and biological data collected during the summer survey, photographic documentation of each site, QA/QC procedures and documentation followed by biological metrics and the California Stream Condition Index (CSCI), along with interpretation of these results with comparisons between sample locations, and across years. In addition, the most recent update of the TWRF NPDES permit (2017) included a provision that required the collection and analysis of attached algae from each of the sites in conjunction with the macroinvertebrate samples. These data were evaluated using the Southern California Algae Index of Biological Integrity (SoCA Algae IBI).

Materials and Methods

Sampling Site Descriptions

Eight sampling locations were visited in the Malibu Creek Watershed from July 15th through August 14th, 2020 (Table 1, Figure 1). Photographs of each site are displayed in Appendix B, Figure 7. Of the eight sites sampled, six are located in Malibu Creek, one is located in Las Virgenes Creek (station R-7), and one is located in Malibu Lagoon (station R-11). When the berm separating Malibu Lagoon from the ocean is breached, station R-11 is subject to tidal flushing and therefore, higher salinities. Stations R-3 and R-4 are located above the Lagoon and below Rindge Dam. Stations R-2 and R-13 are located on Malibu Creek downstream of the TWRF outfall, and stations R-1 and R-9 are located just upstream of the discharge. Station R-7 is located on Las Virgenes Creek in the upper portion of the watershed.

Table 1. Sampling location descriptions in the Malibu Creek Watershed.

Sta.ID	Sample Date	Name	Watershed	Position from TWRF Oufall	Distance (m) from TWRF Outfall	Latitude (N)	Longitude (W)	Elev. (ft)
R-11	8/14/2020	Malibu Lagoon	Malibu	Downstream	7470	34.03378	118.68291	3
R-4	8/14/2020	Malibu Creek	Malibu	Downstream	6290	34.04365	118.68488	26
R-3	8/14/2020	Malibu Creek	Malibu	Downstream	5860	34.04622	118.68847	44
R-13	7/15/2020	Malibu Creek	Malibu	Downstream	930	34.07642	118.70230	458
R-2	7/15/2020	Malibu Creek	Malibu	Downstream	150	34.08105	118.70500	468
R-1	7/15/2020	Malibu Creek	Malibu	Upstream	560	34.08423	118.71202	478
R-9	7/16/2020	Malibu Creek	Malibu	Upstream	2500	34.09798	118.72170	495
R-7	7/16/2020	Las Virgenes Creek	Malibu	Upper Watershed	7650	34.13485	118.70682	721

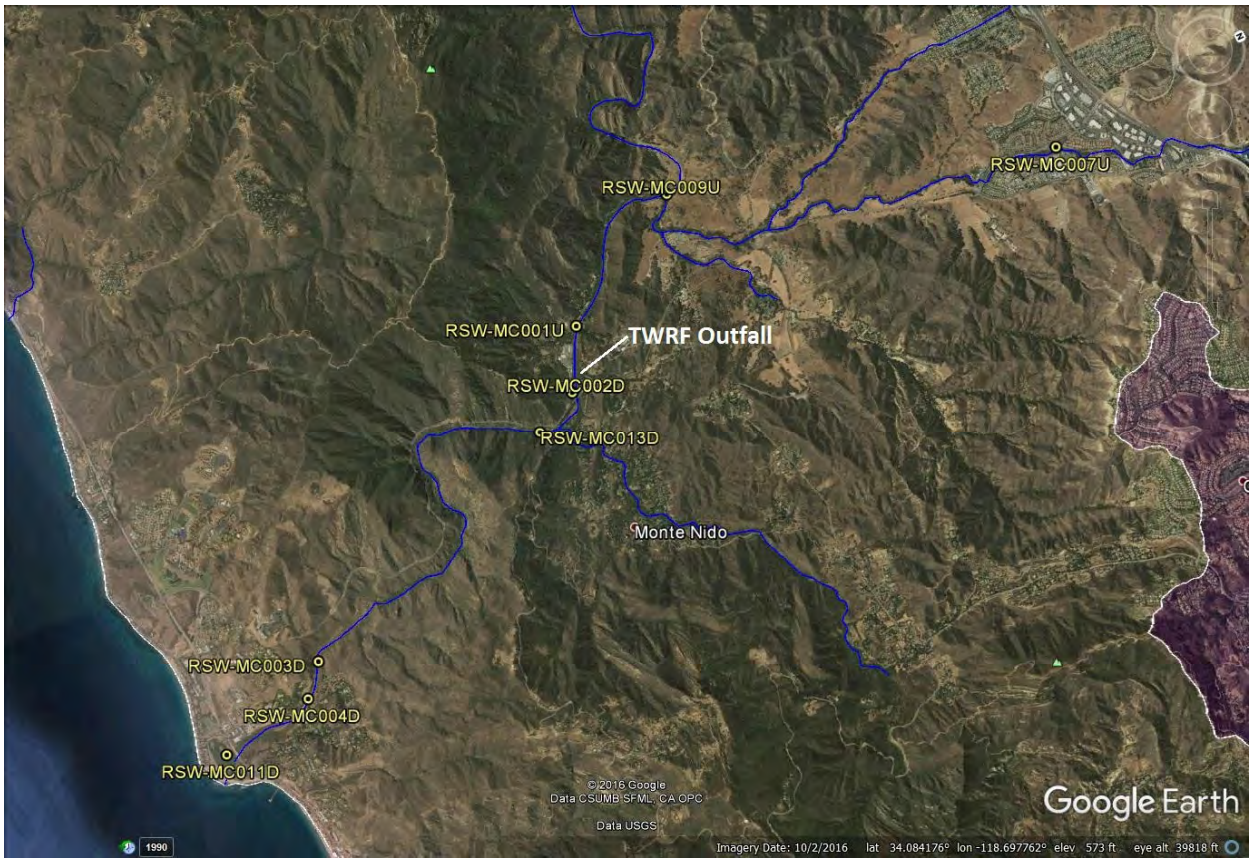


Figure 1. BMI sampling locations in the Malibu Creek Watershed in the vicinity of the Las Virgenes Municipal Water District Tapia Water Reclamation Facilities (LVMWD TWRF) discharge.

Collection of Benthic Macroinvertebrates

Wadeable Streams Protocols:

The field protocols and assessment procedures for collection of BMIs and attached algae followed the Surface Water Ambient Monitoring Program protocols (Ode et al. 2016). Samples were collected in strict adherence to the SWAMP protocols in terms of both sampling methodology and QC procedures. At each station, a 150-meter (m) reach was measured and 11 transects were established equidistance apart from the downstream to upstream end of the reach. If access to the full 150 m reach was not possible due to obstacles (i.e. bridges, or abutments), the total reach length was divided by 11 and transects were established as above. At each site the SWAMP Worksheet was used to collect all of the necessary station information and physical habitat data.

BMI samples were collected, starting with the downstream transect and working upstream, following the Reach Wide Benthos (RWB) sampling protocol:

1. At the most downstream transect, a single location was sampled 25% of the distance from the right wetted width. On the second upstream transect, a sample was collected 50% of the distance from the right wetted width and, on the third transect, 75% of the distance from the right wetted width. This process was repeated until each of the 11 transects had been sampled.

    a) All samples of the benthos were collected within a 0.09 m^2 area upstream of a 0.03 m wide, 0.5 mm mesh D-frame kick-net.

    b) Sampling of the benthos was performed manually by rubbing cobble and boulder substrates in front of the net, followed by disturbing the upper layers of substrate to dislodge any remaining invertebrates.

    c) The duration of sampling ranged from 60-120 seconds, depending on the amount of boulder and cobble-sized substrate that required rubbing by hand; complex substrates require a greater amount of time to process.

2. The 11 samples (per station) were combined into a single composite sample that represented a 0.99 m^2 area of the total reach sampled. The composited samples were transferred into separate two liter wide-mouth plastic jars containing approximately 300 ml of 95% ethanol.

3. Chain of Custody (COC) sheets were completed for samples as each station was completed.

Malibu Lagoon Sampling Protocol (Station R-11):

Station R-11 was located at the lower end of Malibu Creek in the Lagoon. This site is within the tidal prism and is therefore subject to brackish water conditions. As a result, sampling was conducted in adherence to protocols more specific to estuaries (USEPA 2000b). Triplicate benthic samples were collected at station R-11 using a 0.05 m^2 Petite Ponar Grab. Each sample was sieved through a 0.5 mm mesh screen and composited into a two-liter wide-mouth plastic jar containing approximately 300 ml of 95% ethanol.

Collection of Attached Algae

Stream attached algae collection was conducted in strict accordance with SWAMP sampling procedures (Ode et al. 2016) at all stations except R-11 which was in the Malibu Lagoon. Attached algae samples were collected at the same time as the BMI samples. Algae quantitative samples are collected a meter directly above where the BMIs were collected. The collection procedure is variable depending on the substrate found at the collection point but all samples are composited together into a wash bucket for further processing.

1. If the substrate type is removable and is in a depositional habitat (e.g. fine gravel, silt or sand) and has an exposed area of less than 12.6 cm^2, then a PVC delimiter, which is plastic coring device with an internal diameter of 4 cm, is used to collect the loose substrate up to 1 cm deep. Then a metal spatula is placed directly underneath the PVC delimiter to collect the loose material.

2. If the habitat type is erosional (e.g. cobble or a piece of wood) and removable then a rubber delimiter, which is comprised of bicycle tire with a reinforced hole of the desired area, is used to isolate a 12.6 cm^2 area of algae. The delimiter is wrapped around the object collected and a toothbrush is used to scrub the algae from the surface.

3. If the surface substrate cannot be removed (e.g. concrete, bedrock or large boulder), then a “syringe scrubber” is used to collect the algae from the surface underwater. Once the collection area has been scrubbed clean, the syringe plunger is retracted and the scrubber is removed and rinsed into the wash bucket.

Once algae samples from all 11 transects are collected and composited into the wash bucket, they are processed in the field. There are four different indicators targeted at each site, chlorophyll a (Chl-a), ash free dry weight (AFDW), diatoms and soft-bodied algae. For Chl-a and AFDW a 25 mL of composite sample are filtered through glass fiber pre-filters using a hand pump. The filter is placed in a petri dish, covered in aluminum foil and placed on dry ice until analyzed.

Diatom samples were prepared by combining 40 mL of composite water and 10 mL of 10% neutral buffered formalin preservative to a 50 mL centrifuge tube. The tube was covered in foil and placed on wet ice for future identification. Soft-bodied algae samples were prepared by adding 45 mL of composite water and 5 mL of 5% glutaraldehyde solution to a 50 mL centrifuge tube, covered in foil and placed on wet ice for identification.

Diatoms and soft-bodied algae samples were then sent to Rhithron Associates, Inc. in Missoula, MT for identification and enumeration. AFDM and Chl-a were sent to PHYSIS Environmental Lab in Anaheim, CA for analysis.

Physical/Habitat Quality Assessment and Water Chemistry

Bioassessment sampling included a measure of the instream physical habitat conditions using a method originally developed by the USEPA and modified by SWAMP (Ode et al. 2016) for use in California. This method focuses on the habitat conditions found in the streambed and banks. The team collected the physical habitat measurements at each station, according to the full method outlined in the SWAMP manual and recorded the information on the SWAMP worksheets.

Assessment of the P-Hab conditions of a stream reach is necessary to determine the quality of the stream reach as a habitat for BMIs. In many cases, organisms might not be exposed to chemical contaminants, yet their populations indicate that impairment has occurred. These population shifts can be the result of degraded stream bed and/or a degraded riparian habitat. Excess sediment is the leading pollutant in streams and rivers of the United States (Harrington and Born 2000). Sediments fill pools and interstitial areas of the stream substrate, where invertebrates live, and cause invertebrate populations to decline and/or community compositions to be altered. Three important measures of physical habitat quality include epifaunal substrate cover, sediment deposition and channel alteration. A streambed with good epifaunal cover is characterized by a highly irregular and complex habitat composed of cobble, gravel, organic debris, etc. These conditions provide optimum conditions for BMI organisms.

Conversely, when a streambed has little epifaunal cover, a large amount of sediment deposition, or its banks have been altered, conditions for BMIs are generally not as good.

Techniques for measuring physical habitat were as follows:

1. Water temperature, specific conductance, pH, and dissolved oxygen were measured using a handheld YSI 556 MPS water quality meter that was pre-calibrated in the laboratory. A water sample was collected for alkalinity and analyzed using the USEPA's Titrimetric (pH 4.5) 3101 method in the lab.

2. Wetted width, and depth were measured in meters using a stadia rod or measuring tape at each transect.

3. The total length of the stream reach was measured in meters.

4. Substrate size class was measured at five evenly spaced points along each transect to the nearest millimeter.

5. Discharge was measured on a single transect, using a hand held flow meter, following the velocity area method specified in the SWAMP bioassessment protocol.

6. A handheld densitometer was used to measure percent canopy cover.

7. Flow habitat regimes were visually estimated.

8. Stream gradient was measured using either an auto level or clinometer.

Aquatic Bioassay field teams are audited each year for proficiency using the SWAMP protocols by the Southern California Coastal Research Project (SCCWRP) and for the Southern California Stormwater Monitoring Coalition's (SMC) Regional Monitoring Program.

Sample Analysis/Taxonomic Identification of Benthic Macroinvertebrates (BMIs)

Sample sorting and taxonomy were conducted by Aquatic Bioassay in Ventura, California. Identifications were made using standard taxonomic keys (Literature Cited, Taxonomic References) and in most cases, taxa for this study were identified to the species level in adherence with the Standard Taxonomic Effort (STE) Level 2a, specified by the Southwest Association of Freshwater Invertebrate Taxonomists (SAFIT). Chironomids were identified to

subfamily. Identifications were rolled up to the appropriate taxonomic level for the calculation of biological metrics used in the CSCI. Samples entering the lab were processed as follows:

600 organisms were sub-sampled from the composite sample using a Katon tray, and then sorted into major taxonomic groups. All remnants were stored for future reference. The 600 organisms were identified to the genus level for most insects, and order or class for non-insects. As new species to the survey area were identified, examples of each were added to the voucher collection. The voucher collection includes at least one individual of each species collected and ensures that naming conventions can be maintained and changed as necessary into the future.

The taxonomic QA/QC procedures followed for this survey included:

1. Sorting efficiencies were checked on all samples and a minimum required sorting efficiency was 95% (i.e. no more than 5% of the total number of organisms sorted from the grids could be left in the sub-sample) was maintained. At least 10% of all processed material from each sample was inspected by the laboratory supervisor for the aforementioned efficiency. Sorting efficiency results were documented on each station's sample tracking sheet.

2. Once identification work was completed, Aquatic Bioassay taxonomists conduct QC as follows:

    a. Ten percent of all stations sampled were randomly selected for internal QC by another Aquatic Bioassay taxonomist. Samples were checked for both enumeration and identification accuracy, which must both pass a 95% efficiency criterion. Discrepancies were resolved and the database was updated.

    b. Ten percent of all samples (n = 15 QC samples) collected each season in the southern California region (n = ~150 samples) by Aquatic Bioassay are sent to the California Department of Fish and Game (CDFG) offices in Chico California for an external QA/QC check. Samples were sorted by species into individual vials that included an internal label. Any discrepancies in counts or identification found by the CDFG taxonomists were discussed, and then resolved. All data sheets were corrected and, when necessary, bioassessment metrics were updated.

3. It is a requisite of our QC program that all staff members involved in taxonomy belong to SAFIT, an organization dedicated to the standardization of freshwater organism naming conventions.

Sample Analysis/Taxonomic Identification of Attached Algae

Samples for algal analysis were conducted by the Rhithron Associates, Inc. located in Missoula, MT. Laboratory identification procedures for soft algae and diatoms followed SWAMP protocols (Kociolek *et. al* 2011; Stancheva and Sheath, 2011) and are summarized as follows:

Qualitative Soft Algae Analysis

Using a dissecting scope, analysts performed a qualitative scan to identify as many microalga taxa as possible. Specimens were identified to species or lowest practical taxonomic level, and then photos were taken for all determined taxa.

Quantitative Soft Macroalgae Analysis

Using a dissecting scope, analysts processed samples to determine the representative portion of macroalgae (and mosses, vascular plant tissues or roots if present). Bio-volumes were determined by original water displacement. Specimens were identified to species or lowest practical taxonomic resolution.

Quantitative Soft Microalgae Analysis

Using a compound microscope, analysts enumerated 300-500 natural units of soft microalgae. Specimens were identified to species or lowest practical taxonomic resolution. The total bio-volumes of microalgae were calculated using appropriate literature (ie. Hillebrand *et al*. 1999) for measurement designations. Photos were taken of all taxa to compile a synoptic reference collection.

Diatom Analysis

Samples were prepared using the Nitric Acid diatom cleaning method. Cleaned diatom material was diluted to acceptable counting ranges and mounted onto slides. Completed slides were delivered to the processing analyst. Samples were enumerated to 600 valves and identified to the species, or lowest practical taxonomic resolution. Photos were taken of all taxa and a synoptic reference collection was made.

Identification Quality Control

Internal QC protocols included re-identification of the digital synoptic reference collection.

Chlorophyll a and Ash Free Dry Mass of Attached Algae

Chlorophyll a (chl-a) and ash free dry mass (AFDM) analysis was conducted by PHYSIS Environmental Labs (Anaheim, CA).

Laboratory	AFDM	Chl a
PHYSIS Laboratories	SM 10300 C	SM 10300 C

Data Development and Analysis

Benthic Macroinvertebrate Biological Metrics:

As species were identified and counted, they were included in an Excel data sheet, checked for errors, and then imported into the Aquatic Bioassay BMI database system. The California Stream Condition Index (CSCI) and metrics were calculated using GIS and the CSCI package 1.1.2 R script (Mazor et al., 2015). The following metrics were calculated and their responses to impaired conditions are listed in Table 2:

- Percent Clinger Taxa is the percent of taxa in a sample that are adapted for attachment to plants or other hard surfaces in flowing water. A higher number of clinger taxa is indicative of a healthier community than if absent.
- Percent Coleoptera Taxa is the percent of taxa in a sample comprised of beetles (Coleoptera). This order is generally sensitive to impairment and when present, are usually indicative of a healthier community than if absent.
- Taxonomic Richness is a measure of the total number of species found at a site. This relatively simple index can provide much information about the integrity of the community. Few taxa at a site indicate that some species are being excluded, while a large number of taxa indicate a healthier community.
- Percent EPT Taxa is the percent of taxa in sample comprised of mayflies (Ephemeroptera), stoneflies (Plecoptera) and caddisflies (Trichoptera). These orders are generally sensitive to impairment and when present, are usually indicative of a healthier community than if any or all are absent.
- Shredder Taxa is the percent of taxa that shreds coarse particulate matter. Functional Feeding Group (FFG) indices provide information regarding the balance of feeding strategies represented in an aquatic assemblage. Shredder taxa are generally

sensitive to disturbance and increased number of taxa generally indicate a healthier community.

- Percent Intolerant Individuals is the percent of organisms in the sample that are highly intolerant to impairment. BMI species are assigned a literature cited tolerance value ranging from 0 (highly intolerant) to 10 (highly tolerant). The percent intolerant individuals have tolerance values ranging from 0 to 2. A site with many intolerant organisms is considered more pristine and indicate a healthier community.

Table 2. Bioassessment metrics used to describe characteristics of the BMI community.

MMI Metric	Description	Response to Impairment
% Clinger Taxa	Percent of taxa that are adapted for attachment to surfaces in flowing water.	Decrease
% Coleoptera Taxa	Percent taxa from the insect order coleoptera.	Decrease
Taxonomic Richness	Total number of individual taxa.	Decrease
% EPT Taxa	Percent taxa in the orders Ephemeroptera (mayfly), Plecoptera (stonefly) and Trichoptera (caddisfly).	Decrease
Shredder Taxa	Number of taxa that shreds coarse particulate matter.	Decrease
% Intolerant Individuals	Percent of organisms in the sample that are highly intolerant to impairment as indicated by a tolerance value of 0, 1, or 2.	Decrease

California Stream Condition Index (CSCI)

The California Stream Condition Index (CSCI) is a new statewide biological scoring tool that translates complex data about benthic macroinvertebrates (BMIs) found living in a stream into an overall measure of stream health (Mazor et al. 2016). The CSCI combines two separate types of indices, each of which provides unique information about the biological condition at a stream: a multi-metric index (MMI) that measures ecological structure and function, and an observed-to-expected (O/E) index that measures taxonomic completeness. Unlike previous MMI or O/E indices that were applicable only on a regional basis or under-represented large portions of the state, the CSCI was built with a statewide dataset (n = 1,985 sites) that represents the broad range of environmental conditions across California.

The CSCI was calibrated during its development so that the mean score of reference sites is 1. Scores that approach 0 indicate great departure from reference condition and degradation of biological condition. Scores > 1 can be interpreted to indicate greater taxonomic richness and more complex ecological function than predicted for a site given its natural environmental setting. In practice, CSCI scores observed from nearly 2000 study reaches sampled across

California range from about 0.1 to 1.4. Mazor (et al. 2016) and Rhen (2015) suggested that for the purposes of making statewide assessments, three thresholds be established based on the 30th; 10th; and 1st percentiles of CSCI scores at reference sites. These three thresholds divide the CSCI scoring range into 4 categories of biological condition as follows: ≥0.92 = likely intact condition; 0.91 to 0.80 = possibly altered condition; 0.79 to 0.63 = likely altered condition; ≤0.62 = very likely altered condition. While these ranges do not represent regulatory threshold, they provide a useful method for interpreting CSCI results.

Historical Southern California CSCI scores:

To assess the condition of BMI communities at all stations over time, CSCI scores were averaged (± 95% CI) by station for surveys conducted between the 2015 through 2019. This historical data is presented in Figure 5.

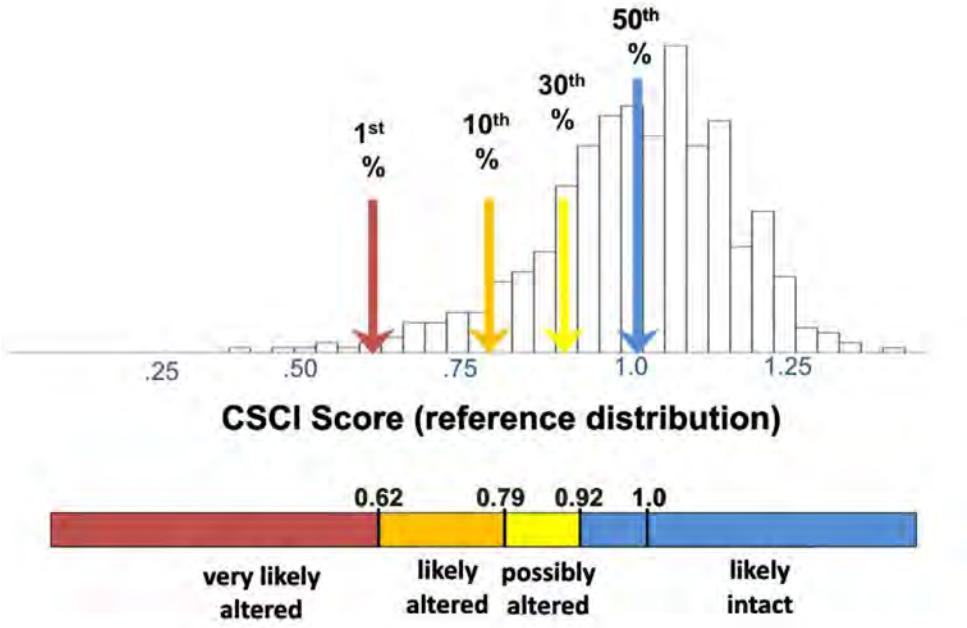


Figure 2. Distribution of CSCI scores at CA reference sites with thresholds and condition categories (Rhen et al., 2015).

Southern California Algae IBI (SoCA Algae IBI)

Soft-bodied algae and diatom community structure can be used to assess many aspects of stream water quality including the effects of nutrient loading and other contaminants (e.g. dissolved metals and organics). The Southern California Coastal Water Research Project

(SCCWRP) scientists developed the Southern California Algae IBI which is similar to the one used for BMIs to assess anthropogenic impacts (Fetscher et al. 2013). Algae samples were collected from 2007 thru 2010 at a total of 451 distinct southern California stream reaches were used to develop the IBI scoring system. The SoCA Algal IBI is composed of three indices; a diatom IBI (D18) is based solely on diatom metrics, a soft algae IBI (S2) is based solely on non-diatom (soft) algae metrics, and a hybrid (H20) of both diatom and soft bodied algae metrics. IBIs are composed of metrics chosen for their ability to differentiate between reference and non-reference stream conditions. Table 3 shows the metrics that were used to calculate the SoCA Algae IBI and their responses to human disturbance.

The boundary chosen to delineate between reference and non-reference condition (57 on a scale from 0 to 100) was based purely on statistical grounds and was calculated as two standard deviations below the mean distribution of reference sites. As a result, it does not represent an ecologically meaningful change point in community composition and is therefore, not used in a regulatory framework (e.g., to evaluate attainment of water body “aquatic life” goals; Fetscher et al. 2013).

Table 3. Diatom and soft bodied algae metrics used in the SoCA Algae IBI (grayed) and their responses to human disturbance.

Metric Category	Metric Theme	Metric	Data Type	Description	Response to Human Disturbance
Diatom					
Autecological Guild	Dissolved Oxygen	Proportion Requiring Nearly 100% DO	Proportion of Valves	Proportion of valves that require nearly 100% DO saturation	Decrease
		Proportion Requiring >50 % DO	Proportion of Valves	Proportion of valves that require at least 50 % DO saturation (sum 50+75+100)	Decrease
	Ionic Strength/Salinity	Proportion Halobiontic	Proportion of Valves	Proportion of valves that are brackish-fresh + brackish (i.e., they have a tolerance of, or requirements for, dissolved salt)	Increase
	Nutrients	Proportion Poly- & Eutrophic	Proportion of Valves	Proportion of valves that are polytrophic + eutrophic	Increase
	Organic Pollution	Proportion Nitrogen Heterotrophs	Proportion of Valves	Proportion of valves that are heterotrophs (includes both obligate and facultative heterotrophs)	Increase
		Proportion Oligo- & Beta-mesosaprobic	Proportion of Valves	Proportion of valves that are oligosaprobous + (beta-mesosapprobus)	Decrease
Morphologic Guild	Sedimentation	Proportion of Highly Motile	Proportion of Valves	Proportion of valves that are highly motile	increase
		Proportion of Sediment Tolerant (highly motile)	Proportion of Valves	Proportion of valves for which there is information that are highly motile (NOT moderately) + all planktonic	increase
Taxonomic Group	A. minutissimum	Proportion A. minutissimum	Proportion of Valves	Proportion of the valves that are Achnanthidium minutissimum	Decrease
Tolerance/Sensitivity	Nitrogen	Proportion of Low TN Indicators	Proportion of Valves	Proportion of valves that are indicators for high TN levels (>3 mg/L)	Decrease
	Phosphorous	Proportion of Low TP Indicators	Proportion of Valves	Portion of valves that are indicators for high TP levels (>0.1 mg/L)	Decrease
Soft Algae					
Relationship to Reference	Reference	Proportion of "non-reference" Indicators (Biovolume)	Relative Biovolumes	Proportion of total micro + macro biovolume composed of indicators of "non-reference" sites	Increase
		Proportion "non-reference" Indicators (Species)	Relative Species Numbers	Proportion of total species richness composed of indicators of "non-reference" sites	Increase
Taxonomic Group	Chlorphyta	Proportion Chlorophyta	Relative Biovolumes	Proportion of total micro + macro biovolume composed of Chlorophyta	Increase
		Proportion of green algae belonging to CRUS	Relative Biovolumes	Proportion of green algae (Chlorophyta + Charophyta) micro + macro biovolume composed of Cladophora golmerata, Rhizoclonium hieroglyphicum, Ulva flexosa, and Stigeoclonium sp.	Increase
	ZygnHeteroRhod	Proportion ZHR (Mean)	Relative Species Number and Biovolumes	Mean of scores for the corresponding species number and biovolume metrics	Decrease
		Proportion ZHR (Biovolume)	Relative Biovolumes	Zygnemataceae + Heterocystous Cyanobacteria + Rhodopyta	Decrease
Tolerance/Sensitivity	Copper	Proportion of High Cu Indicators	Relative Species Numbers	Proportion of total species richness composed of high copper (dissolved) indicators	Increase
	Organic Pollution	Proportion High DOC Indicators (Biovolume)	Relative Biovolumes	Proportion of total micro + macro biovolume composed of indicators of high DOC	Increase
		Proportion High DOC Indicators (Species)	Relative Species Numbers	Proportion of total species richness composed of high DOC indicators	Increase
	Phosphorous	Proportion of Low TP Indicators	Relative Species Numbers	Proportion of total species richness composed of low TP indicators	Decrease

Results

Physical Habitat Characteristics and Water Chemistry

Malibu Creek Watershed above Malibu Lagoon

General Physical Habitat Characteristics

The physical characteristics of the reaches sampled in Malibu Creek during the summer 2020 survey are presented in Table 5.

- The reach length was a maximum 150 m at each site, except at R-9 which was dry. The average wetted width was greatest at R-2 (7.9 m) and was least at R-3 (1.1 m). Average depth was greatest at R-2 (23.1 cm) and was least at R-3 (8.5 cm). Stream discharge was low at all sites ranging from 0.008 m^3/s at R-4 to 0.269 m^3/s at R-7. The slope of all stations ranged from 0.02% (R-1) to 1.73% (R-3).
- Vegetative canopy cover ranged from 78% at R-7 on Las Virgenes Creek, to 36% at R-4. The average thickness of microalgae was low across sites, ranging from 0.00 to 0.03 mm. The presence of macroalgae was greatest at R-13 (42%) and least at R-3 (1%). The presence of macrophytes ranged from 0% at R-2 to 7% at R-7.
- Bank stability is the observed potential of a bank to erode. All the stations sampled were considered at least vulnerable to erosion (25% to 82%). Stations R-1 and R-7 were not stable (0%), while all other stations were partially or highly stable (range = 5% to 75%). Erosion was greatest at R-2 and R-1 (32%, respectively), followed by R-7 (18%).
- Flow habitats were represented by combinations of riffles, glides and pools. Glides (26% to 68%) were the most predominant flow habitats. Riffle habitats ranged from 0% at station R-2 to 44% at R-3. Pool habitat ranged from 1% at R-3 to greatest at R-1 (49%).
- The substrate class size is another indicator of available benthic invertebrate habitat. Mixtures of gravel, sand and fines were prevalent at each of the seven stations. Cobbles and boulders were prevalent at the downstream stations (R-4, R-3 and R-13) and R-7. Roots ('Other') were present across all stations.

Water Quality Measures

Water quality measures were within ranges typical of southern California streams (Table 5).

- Water temperatures ranged from 18.7 °C at R-7 to 22.6 °C at R-4.
- pH was similar across sites ranging from 7.6 to 8.3
- Alkalinity ranged from 276 mg/L at R-3 to 380 mg/L at R-7, the most upstream site.
- Dissolved oxygen concentrations ranged from 6.2 mg/L at R-1 to 11.3 mg/L at R-4.
- Specific conductance was high at all sites ranging from 1,655 µS/cm, at station R-4, to 3,026 µS/cm at station R-7 on Las Virgenes Creek.
- Salinities were elevated compared to most freshwater stream systems (≤ 0.5 ppt), ranging from 0.84 ppt at R-4 to 1.58 ppt at R-7.

Algal Biomass

- Ash free dry mass (AFDM) and chlorophyll-a were also measured at all freshwater stations to estimate algal biomass. The AFDM ranged from 2.12 mg/cm² at R-1 to 13.10 mg/cm² at R-4. Chlorophyll-a was least at R-1 (3.51 µg/cm²) and greatest at R-13 (22.60 µg/cm²).

Physical/Habitat (P-Hab) Scores

Out of a total possible score of 60, the physical habitat scores ranged from marginal to optimal. Downstream stations R-4, R-3 and R-13 scored in the optimal range due to increased instream cover and less channel alteration. Both R-2 and R-7 scored in the suboptimal range, while R-1 scored in the marginal range. R-1 was in the marginal range (29) mostly due to the lack of instream cover and increased sediment deposition (Table 5 and Figure 3).

Malibu Lagoon (Station R-11)

General Physical Habitat Characteristics

Malibu Lagoon Station R-11 represents an estuary habitat that cannot be directly compared to the riparian habitats found at the upstream stations. This site is subject to highly variable conditions including freshwater inundation periods when the berm at the mouth of Lagoon is closed, shallow brackish water periods when the berm is open and large shifts in salinity depending on the status of the berm in conjunction with tidal fluctuations. The organisms that

reside under these conditions are different than those found in freshwater stream systems and are generally adapted to these rapidly changing conditions.

Water Chemistry

The water level during the sampling event was very shallow (1.2 cm) with water temperature (20.7 °C) and pH (7.6) in the range of upstream stations (Table 4). Water quality conditions were typical of estuary conditions, with the salinity (25.52 ppt) indicating tidal influence at the time of the sampling event. The dissolved oxygen was low (2.2 mg/L) probably due to early morning sampling with increased respiration over the shallow mudflat.

Table 4. Physical habitat scores and characteristics for reaches in the Malibu Creek Watershed.

Station	RSW-MC 011D	RSW-MC 004D	RSW-MC 003D	RSW-MC 013D	RSW-MC 002D	RSW-MC 001U	RSW-MC 009U	RSW-MC 007D
Physical Habitat Characteristics								
Reach Length (m)	NA	150	150	150	150	150	Dry	150
Average Wetted Width (m)	NA	5.7	1.1	6.1	7.9	5.2		3.3
Average Depth (cm)	1.2	9.0	8.5	13.7	23.1	22.1		16.5
Average Velocity (ft/s)	NA	0.40	0.05	0.5	0.09	0.52		1.96[1.]
Discharge (m^3/s)	NA	0.008	0.014	0.065	0.016	0.053		0.269[1.]
Slope (%)	NA	1.55	1.73	1.50	0.90	0.02		0.80
Vegetative Canopy Cover (%)	NA	36	58	42	79	75		78
Microalgae Mean Thickness (mm)	NA	0.02	0.03	0.01	0.00	0.00		0.02
Macroalgae Presence (%)	NA	31	1	42	36	16		14
Macrophyte Presence (%)	NA	4	1	1	0	5		7
Bank Stability (%):								
Stable	NA	19	75	23	5	0		0
Vulnerable	NA	76	25	72	63	68		82
Eroded	NA	5	0	5	32	32		18
Flow Habitats (%):								
Cascade/Fall	NA	0	0	0	0	0		0
Rapid	NA	0	0	0	0	0		0
Riffle	NA	28	44	32	0	25		25
Run	NA	0	0	1	12	0		1
Glide	NA	68	53	57	61	26		53
Pool	NA	2	1	10	27	49		21
Dry	NA	2	2	0	0	0		0
Substrate Size (%):								
Bedrock	NA	1	0	4	0	0		0
Boulder	NA	8	17	29	11	2		1
Cobble	NA	7	25	9	10	4		22
Gravel	NA	33	28	27	50	37		34
Sand	NA	27	6	6	2	22		5
Fines	NA	17	17	14	6	8		26
Hardpan	NA	0	0	1	0	0		0
Wood	NA	0	0	0	2	6		1
Other	NA	7	7	10	19	21		11
Water Quality Measures								
Water Temperature (C°)	20.7	22.6	19.8	19.0	21.0	22.3		18.7
pH	7.6	8.3	8.0	7.6	7.8	7.9		7.7
Alkalinity	NA	280	276	296	296	330		380
DO	2.2	11.3	7.2	6.9	6.6	6.2		6.7
Specific Conductance (µS/cm)	39906	1655	2079	2454	2701	2771		3026
Salinity (ppt)	25.52	0.84	1.04	1.27	1.4	1.44		1.58
Ash Free Dry Mass (mg/cm^2)	NA	13.10	4.28	4.20	4.89	2.12		2.13
Chlorophyll a ($\mu g/cm^2$)	NA	9.83	4.24	22.60	11.30	3.51		4.00

1. Calculated using buoyant object method (Ode *et al.*, 2016)

Table 5. Physical habitat assessment for the Malibu Creek Watershed above Malibu Lagoon.

Habitat Parameter	RSW-MC 004D	RSW-MC 003D	RSW-MC 013D	RSW-MC 002D	RSW-MC 001U	RSW-MC 009U	RSW-MC 007D
1. Instream Cover	15	16	18	10	8		14
2. Sediment Deposition	15	14	15	8	6	DRY	13
3. Channel Alteration	16	18	15	16	15		11
Reach Total	**46**	**48**	**48**	**34**	**29**		**38**
Condition Category	**Optimal**	**Optimal**	**Optimal**	**Suboptimal**	**Marginal**		**Suboptimal**

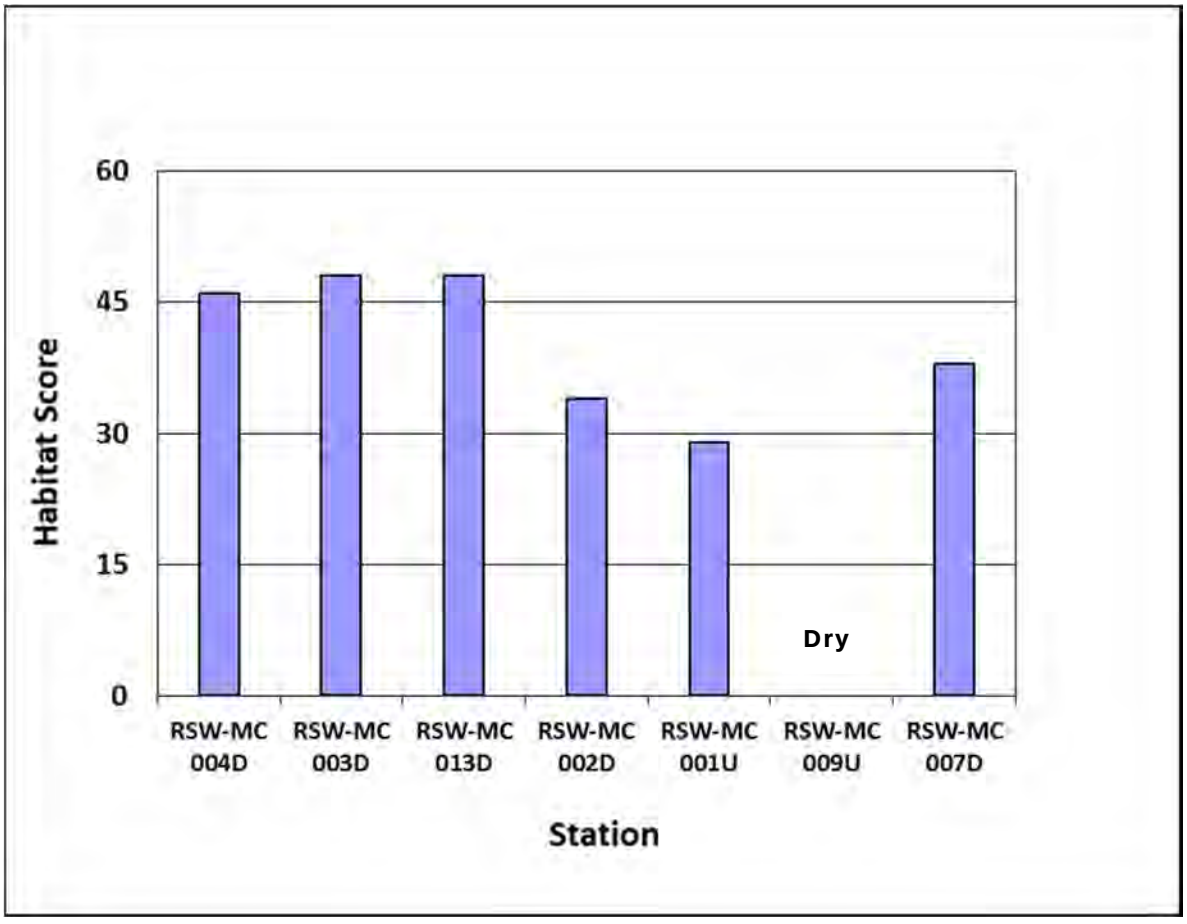


Figure 3. Physical habitat assessment scores for the Malibu Creek Watershed above Malibu Lagoon.

Biological Condition

Benthic Macroinvertebrate (BMI) Community Condition

A complete BMI taxa list including raw abundances, tolerance values, and functional feeding groups are presented by site for the summer 2020 survey in Appendix A, Table 12. The ranked abundances of all taxa at each site are presented in Table 6. New Zealand mud snail abundances from 2007 to 2020 are presented in Table 7. The CSCI scores, including their derivative metrics, are presented in Table 8 and Figure 4.

Community Composition

A combined total of 4,145 BMIs was identified from 52 different taxa at the eight stations sampled during the summer 2020 survey. Ninety nine percent of the organisms collected at station R-11 in Malibu Lagoon included only three taxa: seed shrimp (Ostracoda), worms (Polychaeta) and segmented worms (Oligochaeta) (Table 6). At the upstream stations, combinations of disturbance tolerant organisms represented most of the abundances with four to twelve taxa representing 80% the total abundance. Some of the most abundant taxa across all stations included segmented worms, seed shrimp, midges (Chironominae), clams (*Corbicula sp*.), amphipods (*Hyalella sp.)*, midges (Chironominae), mayflies (*Baetis sp*.), mites (*Sperchon sp*.) and New Zealand mud snails (NZMS, *Potamopyrgus antipodarum*).

In 2020, the NZMS were found at each station, except R-2 just downstream of the outfall (Table 7). Stations downstream of the discharge had on average, fewer NZMS over the fourteen-year period since 2007 (average range = 22 to 40). Average NZMS abundances since 2007 were greatest at R-1 (n = 108) and R-7 (n = 167).

CSCI Score

The CSCI scores, along with its component MMI and O/E scores are presented in Table 8 and Figure 4. CSCI scores at stations R-4, R-13, and R-1 indicated relatively good biotic condition category ranking of “possibly altered” (> 0.79) putting them within the 10th percentile of the reference distribution of stations. Since R-1 and R-13 are located above and below the TWRP discharge point, it indicates that the discharge was not affecting the BMI communities. Stations R-3, R-2 and R-7 had CSCI scores with category scores in the “likely altered” ranking.

The two component indices of the CSCI are the MMI and O/E scores (Table 8 and Figure 4). The MMI scores across sites were moderate (range = 0.64 to 0.79) and were not similar to the reference pool (MMI percentiles = 0.02 to 0.12). This is indicative of streams where the ecological structure of the system has been disturbed. In contrast, the O/E scores ranged from lowest at R-2 (0.78) to greatest at R-1 (1.05 each). These results indicate that while

taxonomic completeness at some of the sites is relatively good, the ecological structure and function of the sites is disturbed.

2015 to 2020 (Historical Data)

CSCI results from 2015 to 2020 for the Malibu Creek Watershed are presented in Figure 5. During the six years, the average score across sites fell below 0.79 indicating they are "likely altered". On average the CSCI scores just above and below the TWRP outfall (R-13, R-2 and R-1) were slightly better than at stations further upstream and downstream (R-4, R-3, R-9 and R-7). This indicates that the TWRP discharge is not affecting the biotic condition of BMI communities downstream of the discharge.

Malibu Creek Lagoon (R-11)

A total of 735 organisms, represented by seven taxa were collected at R-11 in the Malibu Creek Lagoon (Table 9).

Attached Algae Community Condition

Below we present the results for the attached algae community analysis for each site. Each of the metrics used to calculate the diatom (D18), soft bodied algae (S2) and hybrid (H2O) IBI scores are presented in Table 10 (Fetscher et al. 2013). Table 11 shows the rank scores and adjusted IBI score for each metric by station, while Figure 6 graphically depicts the SoCA Algae IBI (H2O) and its component scores for soft algae (S2) and diatoms (D18).

Diatom (D18) and Soft Bodied (S2) Algae Metrics and IBI Scores

Diatoms include mostly unicellular species that are housed in a silica frustule and live as phytoplankton or as a film on the surface of rocks and other hard substrates. A total of 108 diatom taxa were collected from the survey area in 2020 (Appendix A, Table 13). Of these, three classes were represented: one in the class Meridiophyceae, 96 taxa in the class Bacillariophyceae, 4 in the class Coscinodiscophyceae, and 7 in the Fragilariophyceae. The diatom IBI (D18) was low at each station (Table 10 and Table 11). The highest scores were measured at R-3 and R-7 (44 each) and were lowest at R-1 (28) above the outfall (Figure 6).

The soft-bodied algae are composed of filamentous forms that make up large volumes of a sample and are those species that are generally easily seen as filamentous mats in the streambed. In 2020 a total of 30 taxa from 11 different classes were enumerated (Appendix A, Table 14). The adjusted soft bodied algae IBI (S2) was relatively high at R-3 (83) and R-13 (67) below the discharge, but less at the other stations (range = 17 to 40) (Table 10, Table 11 and Figure 6).

SoCA Algae IBI

The SoCA Algae IBI scores for each site were low and below the reference threshold (>57), except at station R-3 (69) which exceeded the threshold (Table 11 and Figure 6). Otherwise, IBI scores ranged from 34 at R-2 to 53 at R-13. Scores above (R-1 = 38) and below (R-2 = 34) the TWRF outfall were similar. The biological condition of the algae communities in this reach of Malibu Creek was poor with no clear evidence that the TWRP outfall is contributing to this condition.

Table 6. Ranked taxonomic abundance of organisms collected during BMI surveys at each station within the Malibu Creek watershed.

RSW-MC011D			RSW-MC004D			RSW-MC003D			RSW-MC013D		
Species	% of Total Abund	Cumulative % Abund	Species	% of Total Abund	Cumulative % Abund	Species	% of Total Abund	Cumulative % Abund	Species	% of Total Abund	Cumulative % Abund
Ostracoda	39.2	39.2	Oligochaeta	25.5	25.5	Baetis	27.9	27.9	Chironominae	35.6	35.6
Polychaeta	35.5	74.7	Ostracoda	20.0	45.5	Hydropsyche	21.4	49.3	Hyalella	23.6	59.2
Oligochaeta	24.8	99.5	Baetis	15.4	60.9	Sperchon	11.3	60.6	Tinodes	6.7	65.9
Melanoides tuberculatus	0.1	99.6	Chironominae	8.8	69.7	Oligochaeta	8.3	68.9	Potamopyrgus antipodarum	6.1	72.0
Palaemon macrodactylus	0.1	99.7	Potamopyrgus antipodarum	5.1	74.8	Potamopyrgus antipodarum	6.8	75.7	Hydroptila	4.7	76.7
Palaeoheterodonta	0.1	99.8	Corbicula	4.8	79.6	Corbicula	3.7	79.4	Fallceon	3.9	80.6
Valvata	0.1	100.0	Orthocladiinae	3.0	82.6	Baetis adonis	2.8	82.2	Ostracoda	3.2	83.8
			Dasyhelea	2.6	85.2	Fallceon	2.5	84.7	Oligochaeta	2.4	86.2
			Sperchon	2.0	87.2	Atrichopogon	1.8	86.5	Prostoma	2.0	88.2
			Hyalella	1.3	88.5	Turbellaria	1.8	88.3	Corbicula	1.9	90.1
			Hydropsyche	1.3	89.8	Caloparyphus/Euparyphus	1.5	89.8	Baetis	1.7	91.8
			Fallceon	1.2	91.0	Hydropsychidae	1.5	91.3	Ochrotrichia	1.3	93.1
			Hydropsychidae	1.0	92.0	Hyalella	1.2	92.5	Orthocladiinae	1.3	94.4
			Simulium donovani	1.0	93.0	Tinodes	1.2	93.7	Hydropsyche	1.2	95.6
			Baetis adonis	0.8	93.8	Argia	1.0	94.7	Hydroptilidae	0.8	96.4
			Tinodes	0.8	94.6	Chironominae	1.0	95.7	Hemerodromia	0.7	97.1
			Ochrotrichia	0.7	95.3	Dicranota	0.8	96.5	Caloparyphus/Euparyphus	0.5	97.6
			Coenagrionidae	0.5	95.8	Prostoma	0.7	97.2	Libellulidae	0.5	98.1
			Hydroptila	0.5	96.3	Ochrotrichia	0.5	97.7	Tanypodinae	0.3	98.4
			Hydroptilidae	0.5	96.8	Ostracoda	0.5	98.2	Tricorythodes explicatus	0.3	98.7
			Turbellaria	0.5	97.3	Lymnaea	0.3	98.5	Atrichopogon	0.2	98.9
			Atrichopogon	0.3	97.6	Maruina lanceolata	0.3	98.8	Baetis adonis	0.2	99.1
			Prostoma	0.3	97.9	Physa	0.3	99.1	Cheumatopsyche	0.2	99.3
			Tanypodinae	0.3	98.2	Simulium donovani	0.3	99.4	Helobdella	0.2	99.5
			Agabus	0.2	98.4	Ceratopogonidae	0.2	99.6	Hydropsychidae	0.2	99.7
			Callibaetis	0.2	98.6	Cheumatopsyche	0.2	99.8	Neoplasta	0.2	99.9
			Ceratopogonidae	0.2	98.8	Orthocladiinae	0.2	100.0	Sperchon	0.2	100.0
			Enochrus	0.2	99.0						
			Libellulidae	0.2	99.1						
			Pericoma/Telmatoscopus	0.2	99.3						
			Physa	0.2	99.5						
			Procambarus clarkii	0.2	99.7						
			Simulium hippovorum	0.2	99.9						
			Simulium vittatum	0.2	100.0						

RSW-MC002D			RSW-MC001U			RSW-MC009U			RSW-MC007D		
Species	% of Total Abund	Cumulative % Abund	Species	% of Total Abund	Cumulative % Abund	Species	% of Total Abund	Cumulative % Abund	Species	% of Total Abund	Cumulative % Abund
Chironominae	54.4	54.4	Sperchon	14.0	14.0	Dry			Potamopyrgus antipodarum	61.7	61.7
Corbicula	14.4	68.8	Turbellaria	10.7	24.7				Hyalella	9.6	71.3
Oligochaeta	10.1	78.9	Chironominae	9.7	34.4				Simulium donovani	6.4	77.7
Tanypodinae	4.5	83.4	Hydropsyche	9.7	44.1				Oligochaeta	4.5	82.2
Sperchon	2.8	86.2	Baetis	5.6	49.7				Chironominae	2.3	84.5
Hyalella	2.5	88.6	Corbicula	5.6	55.3				Ostracoda	1.8	86.3
Ostracoda	2.3	90.9	Hydropsychidae	5.4	60.7				Tipula	1.8	88.1
Cheumatopsyche	1.0	91.9	Ostracoda	5.3	66.0				Turbellaria	1.8	89.9
Enallagma	1.0	92.9	Cheumatopsyche	4.8	70.8				Simulium argus	1.7	91.6
Hydroptila	1.0	93.9	Potamopyrgus antipodarum	4.8	75.6				Argia	1.5	93.1
Prostoma	1.0	94.8	Argia	3.3	78.9				Baetis	1.5	94.6
Caloparyphus/Euparyphus	0.8	95.6	Hyalella	3.3	82.2				Physa	1.3	95.9
Hydropsyche	0.8	96.4	Prostoma	2.5	84.7				Sperchon	1.3	97.2
Ochrotrichia	0.8	97.2	Hydroptila	2.3	87.0				Prostoma	0.8	98.0
Tinodes	0.8	98.0	Mideopsis	1.8	88.8				Orthocladiinae	0.7	98.7
Argia	0.5	98.5	Tanypodinae	1.8	90.6				Hydropsychidae	0.3	99.0
Atrichopogon	0.3	98.7	Hetaerina americana	1.6	92.2				Tanypodinae	0.3	99.3
Baetis	0.3	99.0	Ochrotrichia	1.6	93.8				Baetis adonis	0.2	99.5
Ferrissia	0.3	99.3	Hemerodromia	1.2	94.9				Bezzia/Palpomyia	0.2	99.7
Menetus opercularis	0.3	99.5	Oligochaeta	1.0	95.9				Hydroptila	0.2	99.9
Procambarus clarkii	0.3	99.8	Fallceon	0.8	96.7				Pisidium	0.2	100.0
Tipula	0.3	100.0	Simulium donovani	0.8	97.5						
			Orthocladiinae	0.7	98.2						
			Physa	0.5	98.7						
			Hydroptilidae	0.3	98.9						
			Anopheles	0.2	99.1						
			Coenagrionidae	0.2	99.3						
			Empididae	0.2	99.5						
			Procambarus clarkii	0.2	99.7						
			Simulium argus	0.2	99.8						
			Tinodes	0.2	100.0						

Table 7. Abundances of New Zealand mud snails at sites in the Malibu Creek Watershed from 2007 to 2020.

Year	Station							Combined Annual Total
	RSW-MC 004D	RSW-MC 003D	RSW-MC 013D	RSW-MC 002D	RSW-MC 001U	RSW-MC 009U	RSW-MC 007D	
2007	52	15	196	138	122	0	157	680
2008	4	0	0	7	0	0	2	13
2009	42	69	73	201	37	0	23	445
2010	37	18	190	62	371	0	273	951
2011	5	13	12	77	86	6	112	311
2012	110	4	2	57	22	0	110	305
2013	0	0	13	4	7	DRY	346	370
2014	0	0	0	2	5	0	176	183
2015	Dry	3	2	5	20	DRY	394	424
2016	76	77	0	0	193	DRY	177	523
2017	0	2	2	6	65	0	171	246
2018	8	38	0	0	313	Dry	0	359
2019	0	24	30	0	238	0	19	311
2020	31	41	36	0	29	Dry	374	511
***average* =**	**28**	**22**	**40**	**40**	**108**	**1**	**167**	**402**

Table 8. The CSCI scores and categories for each site in the Malibu watershed, including scores for the sub-indices (MMI and O/E) which are averaged to generate the CSCI. CSCI, MMI and O/E percentiles show how a site compares with the reference pool of sites. A site with a low percentile score (e.g., 0.03) has a biological condition that compares with very few sites in the reference pool.

	Malibu Creek						Las Virgenes Creek
CSCI	**RSW-MC 004D**	**RSW-MC 003D**	**RSW-MC 013D**	**RSW-MC 002D**	**RSW-MC 001U**	**RSW-MC 009U**	**RSW-MC 007D**
CSCI							
CSCI Score	**0.90**	**0.77**	**0.79**	**0.73**	**0.88**	**Dry**	**0.75**
CSCI Percentile	**0.28**	**0.08**	**0.09**	**0.04**	**0.23**		**0.06**
CSCI Category	**Possibly Altered**	**Likely Altered**	**Possibly Altered**	**Likely Altered**	**Possibly Altered**		**Likely Altered**
MMI Metric							
% Clinger Taxa	33	45	36	42	46		37
% Coleoptera Taxa	7	0	0	0	0		0
Taxonomic Richness	25	23	21	21	24		17
% EPT Taxa	28	26	37	29	29		17
Shredder Taxa	1	0	0	1	1		0
% Intolerant	1	2	7	1	0		0
MMI Score	**0.79**	**0.65**	**0.73**	**0.68**	**0.71**		**0.64**
MMI Percentile	**0.12**	**0.03**	**0.06**	**0.03**	**0.05**		**0.02**
O/E							
Mean Observed Taxa	7.9	6.8	6.6	6.0	8.0		7.6
Expected Taxa	7.7	7.6	7.8	7.7	7.6		8.9
O/E	**1.02**	**0.89**	**0.85**	**0.78**	**1.05**		**0.86**
O/E Percentile	**0.55**	**0.28**	**0.22**	**0.12**	**0.60**		**0.23**

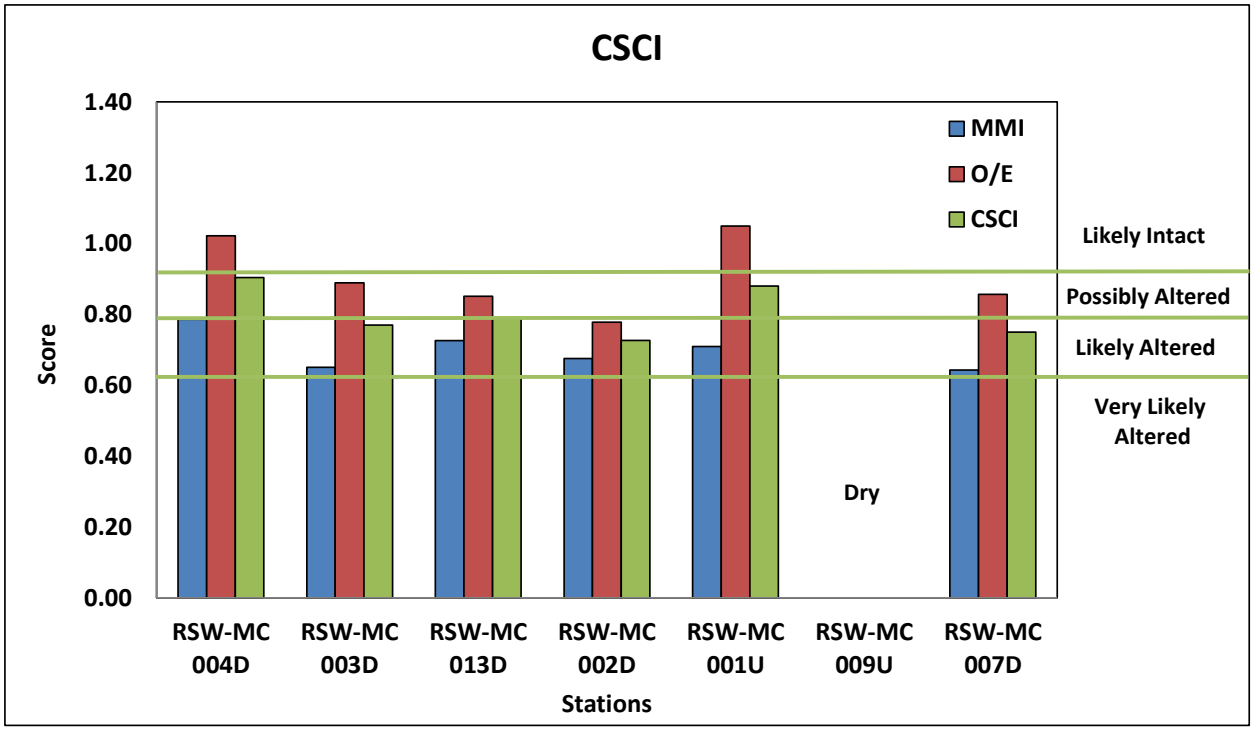


Figure 4. CSCI scores including the MMI and O/E for sites in the Malibu Creek watershed. Horizontal green lines represent the 1st (Very Likely Altered), 10th (Likely Altered), 30th (Likely Intact), and 50th (Likely Intact) percentiles of the reference site distribution for the CSCI scores.

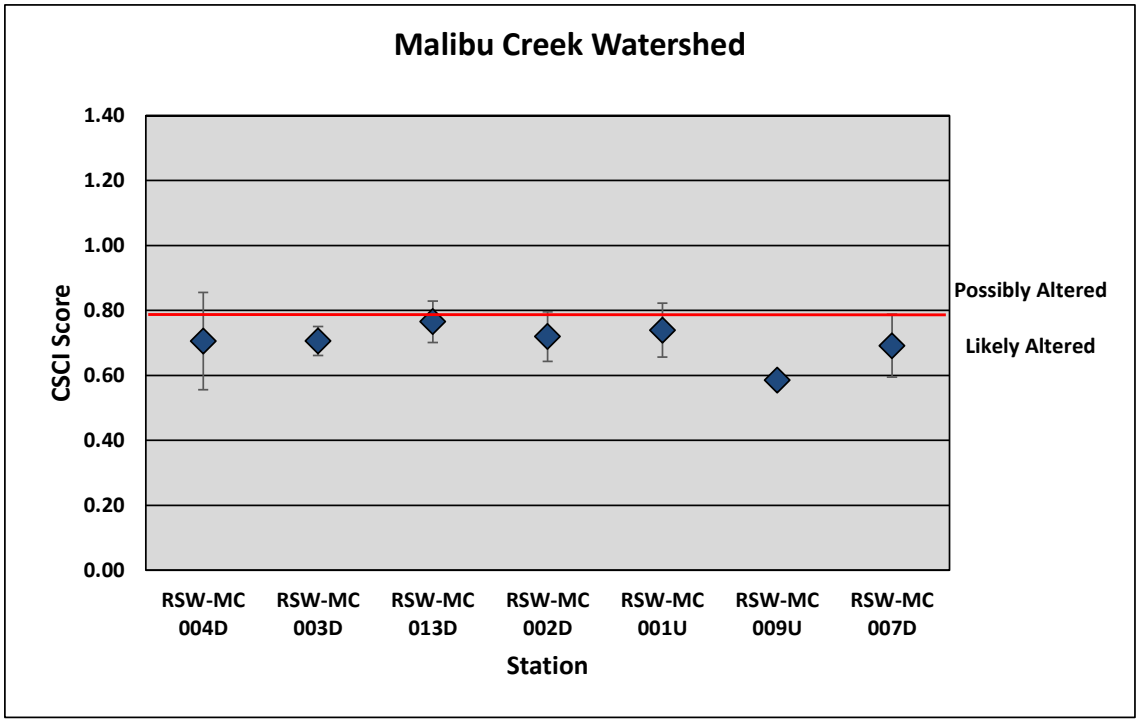


Figure 5. Average (± 95% CI) CSCI scores for stations sampled within the Malibu Creek watershed from 2015 to 2020. Sites are sorted from most downstream (left) to most upstream (right). The red line denotes the 10th percentile threshold limit (0.79) for the CSCI.

Table 9. Biological metrics measured at station RSW-MC011D in Malibu Lagoon.

Biological Metric	RSW-MC 011D
Total Abundance	735
Taxonomic Richness	7
Shannon Diversity	1.1

Table 10. Diatom and soft bodied algae metrics used to calculate the D18, S2 and H2O index for each of the sample locations in the Malibu watershed. Response to human disturbance indicates whether a metric increases or decreases with anthropogenic stress.

Metric Category/Theme	Metric	RSW-MC 004D	RSW-MC 003D	RSW-MC 013D	RSW-MC 002D	RSW-MC 001U	RSW-MC 009U	RSW-MC 007D	Response to Human Disturbance
Diatom									
Autecological Guild									
Dissolved Oxygen	Proportion Requiring >50 % DO	0.9662	0.946	0.881	0.851	0.825	Dry	0.947	Decrease
	Proportion Requiring 100% DO	0.27692	0.332	0.027	0.003	0.059		0.005	Decrease
Ionic Strength/Salinity	Proportion Halobiontic	0.4164	0.347	0.362	0.484	0.541		0.304	Increase
Nutrients	Proportion Poly- & Eutrophic	0.7095	0.647	0.928	0.943	0.897		0.985	Increase
Organic Pollution	Proportion Nitrogen Heterotrophs	0.3200	0.362	0.172	0.126	0.249		0.388	Increase
	Proportion Oligo- & Beta-mesosaprobic	0.5798	0.644	0.665	0.502	0.408		0.541	Decrease
Morphologic Guild									
Sedimentation	Proportion of Highly Motile	0.2468	0.217	0.185	0.227	0.209		0.149	Increase
	Proportion of Sediment Tolerant (highly motile)	0.2545	0.229	0.246	0.335	0.341		0.158	Increase
Taxonomic Group									
A. minutissium	Proportion A. minutissimum	0.0052	0.015	0.002	0.000	0.007		0.000	Decrease
Tolerance/Sensitivity									
Nitrogen	Proportion of Low TN Indicators	0.2804	0.332	0.026	0.000	0.057		0.005	Decrease
Phosphorous	Proportion of Low TP Indicators	0.0081	0.024	0.008	0.000	0.016		0.005	Decrease
Soft									
Relationship to Reference									
Reference	Proportion "non-reference" Indicators (sp)	0.5000	0.000	0.000	0.333	0.333		0.250	Increase
	Proportion of "non-reference" Indicators (b) [1.]	1.0000	0.000	0.000	0.967	0.999		0.008	Increase
Taxonomic Group									
Chlorphyta	Proportion Chlorophyta (b)	1.0000	0.000	0.000	0.967	0.999		0.084	Increase
	Proportion of Green Algae Belonging to CRUS (b)	1.0000	0.000	0.000	1.000	1.000		0.000	Increase
ZygnHeteroRhod	Proportion ZHR (b)	0.0000	0.000	0.000	0.000	0.000		0.000	Decrease
	Proportion ZHR (m)	0.1000	0.000	0.000	0.071	0.083		0.000	Decrease
Tolerance/Sensitivity									
Copper	Proportion of High Cu Indicators (sp)	0.2500	0.000	0.000	0.200	0.000		0.333	Increase
Organic Pollution	Proportion High DOC Indicators (b)	1.0000	0.000	0.000	0.967	0.999		0.008	Increase
	Proportion High DOC Indicators (sp)	0.5000	0.000	0.000	0.333	0.333		0.250	Increase
Phosphorous	Proportion of Low TP Indicators (sp)	0.0000	0.333	0.000	0.000	0.000		0.000	Decrease

1. Abbreviations are as follows: b- metric based on biovolume; sp- metric based on species presence; m- metric is an average of the "b" and "sp" counterpart metric values; CRUS- Cladophora glomerata + Rhizoclonium hieroglyphicum + Ulva flexuosa + Stigeoclonium sp. ZHR - Zygnemataceae + hetrocystous cyanobacteria + Rhodophyta; Green algae- Taxa within Chlorophyta + Charophyta

Table 11. The SoCA Algae IBI scores for sample locations in the Malibu Creek Watershed. Individual sub-indices for both diatoms (D18) and soft bodied algae (S2) are presented along with the hybrid SoCA Algae IBI score (H2O). Rank scores (0 to 10) are presented for each metric. Each index summation is adjusted to fit on a scale of 0 to 100.

SoCA Algae IBI Metric Score	Stations						
	RSW-MC 004D	RSW-MC 003D	RSW-MC 013D	RSW-MC 002D	RSW-MC 001U	RSW-MC 009U	RSW-MC 007D
Diatoms (D18)							
Proportion Requiring >50 % DO (d)	9	8	7	6	5	**Dry**	8
Proportion Halobiontic (d)	3	4	3	1	0		4
Proportion N Heterotrophs (d)	4	3	6	7	5		3
Proportion of Sediment Tolerant (highly motile; d)	5	6	5	3	3		7
Proportion of Low P Indicators (d)	0	1	0	0	1		0
D18 IBI Total	21	22	21	17	14		22
D18 IBI Adjusted (2.0)	**42**	**44**	**42**	**34**	**28**		**44**
Soft Bodied Algae (S2)							
Proportion "non-reference" Indicators (sp)	0	10	10	3	3		5
Proportion of green algae belonging to CRUS (b)	1	10	10	1	1		10
Proportion ZHR (m)	2	0	0	2	2		0
Proportion of High Cu Indicators (s, sp)	3	10	10	4	10		1
Proportion High DOC Indicators (s, sp)	4	10	10	6	6		8
Proportion of Low TP Indicators (s, sp)	0	10	0	0	0		0
S2 IBI Total	10	50	40	16	22		24
S2 IBI Adjusted (1.66667)	**17**	**83**	**67**	**27**	**37**		**40**
SoCA Algae IBI							
Proportion of High Cu Indicators (s, sp)	3	10	10	4	10		1
Proportion High DOC Indicators (s, sp)	4	10	10	6	6		8
Proportion of Low TP Indicators (s, sp)	0	10	0	0	0		0
Proportion Requiring >50 % DO (d)	9	8	7	6	5		8
Proportion Halobiontic (d)	3	4	3	1	0		4
Proportion N Heterotrophs (d)	4	3	6	7	5		3
Proportion of Sediment Tolerant (highly motile; d)	5	6	5	3	3		7
Proportion of Low TN Indicators (d)	4	4	1	0	1		0
SoCA Algae IBI Total	32	55	42	27	30		31
SoCA Algae IBI Adjusted Total (1.25)	**40**	**69**	**53**	**34**	**38**		**39**
SoCA Algae IBI Category	**Non-Ref**	**Reference**	**Non-Ref**	**Non-Ref**	**Non-Ref**		**Non-Ref**

1. Abbreviations are as follows: d- diatom metric; s- soft algae metric; sp- metric based on species presence

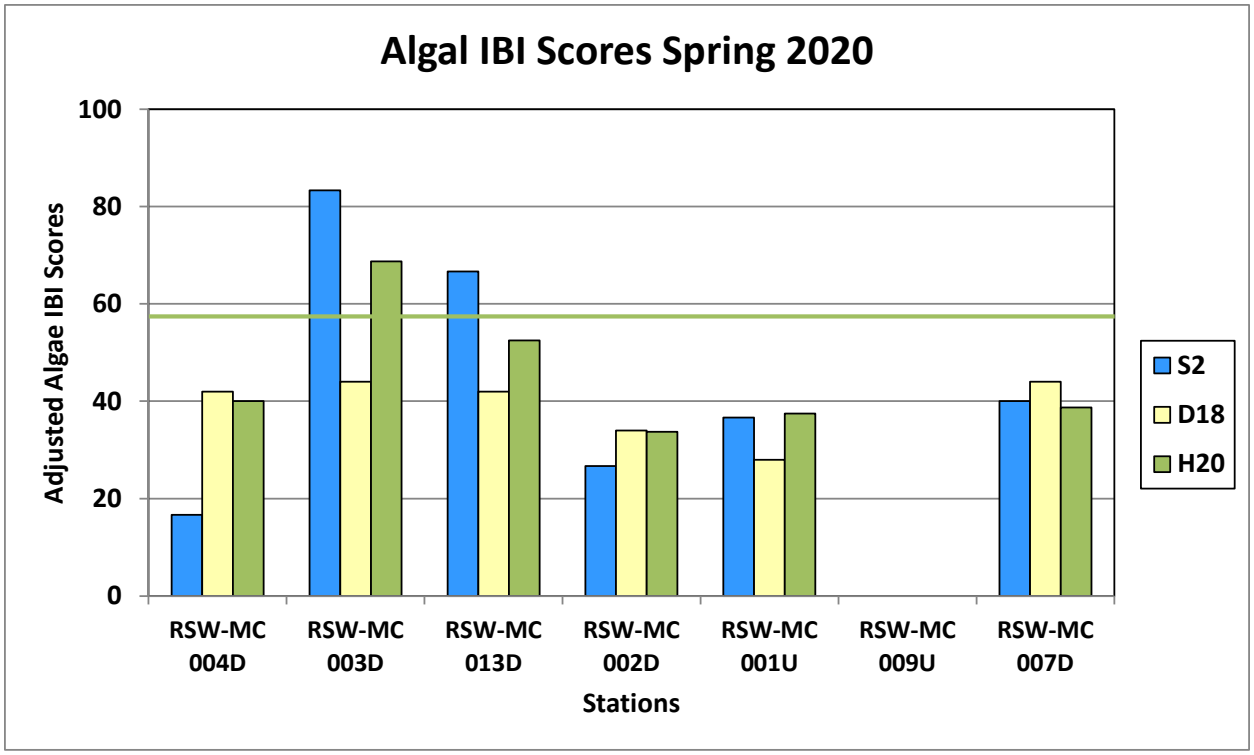


Figure 6. SoCA Algae IBI scores for sites in the Malibu Creek watershed. The S2 and D18 index is composed of soft body algae metrics and diatom metrics respectively. The H20 is a hybrid of soft body algae and diatom metrics. The green horizontal bar represents the boundary between algae communities in reference vs. non-reference condition for the H20 index.

Summary and Conclusions

A total of eight bioassessment sampling locations were visited in the Malibu Creek Watershed on July 15th, 16th and August 14th, 2020 by Aquatic Bioassay and Consulting Laboratory biologists. Station R-9 was not sampled because it was dry at the time of sampling. All sampling, laboratory analysis, and data analysis were conducted according to SWAMP protocols with the exception of the Malibu Lagoon Station RSW-MC011, which was sampled according to USEPA's estuarine sampling guidance (2000).

The habitat conditions in a stream reach play a key role in the development of a healthy aquatic community. In many cases organisms may not be exposed to chemical contaminants, yet their populations indicate that impairment has occurred. These population shifts can be due to degradation of the streambed and bank habitats. For example, excess sediment caused by bank erosion due to human activities can fill pools and interstitial areas of the stream substrate where fish spawn and invertebrates live, causing their populations to decline or to be altered. Also, loss of vegetative canopy cover and reduced width of the riparian zone can have similar effects on the BMI communities.

P-Hab scores for stations sampled within the Malibu Watershed above Malibu Lagoon were optimal to suboptimal just below the TWRP outfall and were only marginal at R-1 just above the discharge point. The poorer conditions at R-1 were due to sediment deposition, in combination with a high degree of channel alteration, and lack of instream cover. In contrast, R-4, R-3 and R-13 had better conditions due to good instream cover, low sediment deposition and lack of channel alteration. The sites below the discharge had embankments that were stable or vulnerable to erosion, while above the discharge sites were either eroded or vulnerable to erosion. All sites had relatively good vegetative protection and surrounding riparian habitats.

Malibu Lagoon Station R-11 represents an estuary habitat that cannot be directly compared to the riparian habitats found at the upstream stations. This site is subject to highly variable conditions including inundation during periods when the berm at the mouth of Lagoon is closed, shallow brackish water periods when the berm is open and large shifts in salinity depending on the status of the berm in conjunction with tidal fluctuations. The organisms that reside under these conditions are different than those found in freshwater stream systems and are generally adapted to these rapidly changing conditions. Likewise, sampling techniques developed for both systems are not comparable.

A combined total of 4,145 BMIs was identified from 52 different taxa at the seven stations where sampling occurred during the summer 2020 survey. Only seven taxa were collected at R-11 in the Malibu Creek Lagoon. The most abundant taxa included seed shrimp (Ostracoda, 39%) marine worms (Polychaeta, 35%) and segmented worms (Oligochaeta, 25%). At the upstream stations, combinations of disturbance tolerant organisms represented most of the abundances with four to twelve taxa representing 80% the total abundance. Some of the most abundant taxa across all stations included segmented worms, seed shrimp, midges (Chironominae), clams (*Corbicula sp*.), amphipods (*Hyalella sp.)*, midges (Chironominae), mayflies (*Baetis sp*.), mites (*Sperchon sp*.) and New Zealand mud snails (NZMS, *Potamopyrgus antipodarum*).

The biotic condition of streams in this survey was assessed using two indexes of biological integrity: the California Stream Condition Index (CSCI) and the Southern California Algae Index of Biological Integrity (SoCA Algae IBI). The CSCI is based on the benthic macroinvertebrate community, while the SoCA Algae IBI is based on the abundances and composition of the diatom and soft bodied algae communities at a site. The inclusion of the SoCA Algae IBI provides a second indicator of stream condition. There have been no regulatory compliance thresholds established for these indexes in the state of California. The statistically derived thresholds presented for each of these indices are included to compare the biotic condition found at a specific site to the biotic condition found at the pool of reference sites used to develop each index. As a result, they do not necessarily represent an ecologically meaningful change point in community composition and should not be used in a regulatory framework.

These two indexes provided contrasting results and showed that the BMI community (CSCI) was in relatively good condition compared to reference conditions, while the SoCA Algae IBI indicated that algae populations were below reference site conditions:

1. The CSCI category rankings at stations R-4, R-13 and R-1 were “possibly altered” and similar to the 10th percentile of the reference site condition (>0.79). Since R-1 and R-13 are located above and below the discharge point, it indicates that the TWRF discharge was not negatively impacting the BMI community.

2. The SoCA Algal IBI scores for all sites in the survey were well below the reference threshold (57), except station R-3 which exceeded the threshold. The IBI scores above the outfall (R-1 = 38) and below the outfall (R-2 = 34) were similar indicating there was no outfall related effect on the algae communities.

The strong association between physical habitat and biological condition (IBI scores) that are typical in southern California watersheds are not as clear cut in the Malibu Creek Watershed. Physical habitat conditions in most of the stream reaches where samples were collected were relatively decent with good instream cover, low to moderate sedimentation and little channel alteration. This indicates that degraded biological community conditions measured in past surveys may be linked more closely to poor water quality conditions (e.g. elevated nutrients or metals). Staff members of the Las Virgenes Municipal Water District have shown that a potential source of these poor water quality conditions may be the result of local geologic conditions. The terrain in the upper reaches of the watershed is dominated by the Monterey formation. Runoff from this area has very high conductivity (>3,000 uS) and elevated sulfate and phosphate concentrations. EPA sponsored research has shown that elevated background concentrations of these constituents has a detrimental effect on BMIs at levels known to occur naturally in Malibu Creek (Pond *et al.*, 2008).

Station R-11 located in Malibu Lagoon is inundated with brackish water during portions of the year when the berm is breached to the ocean. During this survey only seven taxa were present. The lack of diversity found at this Lagoon site may be due to the ever-changing conditions found here. Sudden shifts in salinity and temperature make it difficult for stable benthic communities to become established and only those organisms capable of such extreme shifts in environmental conditions can dominate the benthic communities.

The collection of New Zealand mudsnails (NZMS, *Potamopyrgus antipodarum*) in the watershed is of ongoing environmental concern. The snail was first collected in the upper and lower Medea Creek in the spring of 2005. Efforts to control NZMS populations are focused on ensuring they are not spread to other locations and there is presently no method available to remove them from a stream reach without damaging the indigenous populations. Aquatic Bioassay scientists and field crews have employed the strict control measures recommended by the State of California to reduce the chance that the NZMS is further spread in the watershed.

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Appendix A: BMI and Attached Algae Taxa Lists

Table 12. 2020 BMI raw taxa list for sites in the Malibu Creek Watershed.

Identified Taxa	Tol Val (TV)	Func Feed Grp	RSW-MC 011D	RSW-MC 004D	RSW-MC 003D	RSW-MC 013D	RSW-MC 002D	RSW-MC 001U	RSW-MC 009U	RSW-MC 007D
Insecta Taxa										
Ephemeroptera										
Baetis	5	cg		93	168	10	1	34	Dry	9
Baetis adonis	5	cg		5	17	1				1
Callibaetis	9	cg		1						
Fallceon	4	cg		7	15	23		5		
Tricorythodes explicatus	4	cg				2				
Odonata										
Argia	7	p			6		2	20		9
Coenagrionidae	9	p		3				1		
Enallagma	9	p					4			
Hetaerina americana	6	p						10		
Libellulidae	9	p		1		3				
Trichoptera										
Cheumatopsyche	5	cf			1	1	4	29		
Hydropsyche	4	cf		8	129	7	3	59		
Hydropsychidae	4	cf		6	9	1		33		2
Hydroptila	6	ph		3		28	4	14		1
Hydroptilidae	4	ph		3		5		2		
Ochrotrichia	4	ph		4	3	8	3	10		
Tinodes	2	sc		5	7	40	3	1		
Coleoptera										
Agabus	8	p		1						
Enochrus	5	cg		1						
Diptera										
Anopheles	8	cg						1		
Atrichopogon	6	cg		2	11	1	1			
Bezzia/Palpomyia	6	p								1
Caloparyphus/Euparyphus	8	cg			9	3	3			
Ceratopogonidae	6	p		1	1					
Chironominae	6	cg		53	6	211	216	59		14
Dasyhelea	6	cg		16						
Dicranota	3	p			5					
Empididae	6	p						1		
Hemerodromia	6	p				4		7		
Maruina lanceolata	2	sc			2					
Neoplasta	6	p				1				
Orthocladiinae	5	cg		18	1	8		4		4
Pericoma/Telmatoscopus	4	cg		1						
Simulium argus	6	cf						1		10
Simulium donovani	6	cf		6	2			5		39
Simulium hippovorum	6	cg		1						
Simulium vittatum	6	cf		1						
Tanypodinae	7	p		2		2	18	11		2
Tipula	4	om					1			11
Non-Insecta Taxa										
Palaeoheterodonta			1							
Oligochaeta	5	cg	182	154	50	14	40	6		27
Ostracoda	8	cg	288	121	3	19	9	32		11
Polychaeta			261							
Turbellaria	4	p		3	11			65		11
Amphipoda										
Hyalella	8	cg		8	7	140	10	20		58
Basommatophora										
Ferrissia	6	sc					1			
Lymnaea	6	sc			2					
Menetus opercularis							1			
Physa	8	sc		1	2			3		8
Decapoda										
Palaemon macrodactylus			1							
Procambarus clarkii	8	sh		1			1	1		
Heterostropha										
Valvata	8	sc	1							
Hoplonemertea										
Prostoma	8	p		2	4	12	4	15		5
Hypsogastropoda										
Potamopyrgus antipodarum	8	sc		31	41	36		29		374
Neotaenioglossa										
Melanoides tuberculatus		sc	1							
Rhynchobdellida										
Helobdella	6	pa				1				
Trombidiformes										
Mideopsis	5	p						11		
Sperchon	8	p		12	68	1	11	85		8
Veneroida										
Corbicula	8	cf		29	22	11	57	34		
Pisidium	8	cf								1
TOTAL			**735**	**604**	**602**	**593**	**397**	**608**		**606**

Table 13. Summer 2020 diatom taxa list for Malibu watershed.

			Station						
Phylum	Class	Species	RSW-MC 004D	RSW-MC 003D	RSW-MC 013D	RSW-MC 002D	RSW-MC 001U	RSW-MC 009U	RSW-MC 007D
Bacillariophyta	Meridiophyceae	Pleurosira laevis	1		14	5	3		1
	Bacillariophyceae	Achnanthidium minutissimum	2	6	1		3		
		Amphora copulata		1	1	13	9		24
		Amphora ovalis	2	2	5	27	17		
		Amphora pediculus	29	26	33	32	17		92
		Bacillaria paxillifera	41	27	6	30	58		21
		Caloneis					2		
		Cocconeis pediculus	2	6	33	19	7		3
		Cocconeis placentula	22	27	164	100	52		96
		Cocconeis placentula var euglypta	29	26					
		Cymatopleura elliptica			1				
		Cymatopleura solea			1				
		Diadesmis confervacea			2		11		
		Diploneis elliptica		1					
		Entomoneis		1					
		Entomoneis paludosa				1	2		1
		Epithemia gibba		1	1				
		Epithemia sorex					2		
		Fallacia californica	1	2	18	13	12		4
		Fallacia pygmaea							2
		Fallacia tenera				2	2		
		Geissleria decussis			1				
		Gomphonema exilissimum			2				
		Gomphonema parvulum				1			
		Gyrosigma acuminatum				2			3
		Halamphora tumida			1				
		Halamphora veneta					5		3
		Hippodonta capitata			8	9	2		
		Hippodonta hungarica			2		3		
		Iconella tenera		1					
		Karayevia laterostrata				1			
		Kolbesia gessneri		2					
		Mayamaea permitis		1	1	1	3		2
		Meridion circulare					2		
		Navicula			5	11	7		39
		Navicula amphiceropsis			3	4			
		Navicula antonii	2	2	5	5	6		
		Navicula caterva	2	2	5	6	12		
		Navicula cryptotenelloides	2				1		
		Navicula erifuga	1	3	1	3	7		18
		Navicula genovefae			5	8			
		Navicula germainii	1						2
		Navicula gregaria	8	13	19	19	24		11
		Navicula moskalii			3	10	16		
		Navicula recens		2	1	1	3		12
		Navicula reichardtiana					1		
		Navicula rostellata		2	1	1	1		
		Navicula subrhynchocephala			2				
		Navicula tripunctata			9		2		
		Navicula veneta		2			2		
		Nitzschia		2		1	4		3
		Nitzschia acicularis					1		
		Nitzschia agnita	12						
		Nitzschia amphibia					2		2
		Nitzschia archibaldii	9	3		2			

Table 13. Continued

Phylum	Class	Species	Station						
			RSW-MC 004D	RSW-MC 003D	RSW-MC 013D	RSW-MC 002D	RSW-MC 001U	RSW-MC 009U	RSW-MC 007D
		Nitzschia aurariae		2		2	2		
		Nitzschia capitellata							2
		Nitzschia dissipata	2	6	5	2	2		
		Nitzschia fonticola	3	2	1	9	4		5
		Nitzschia frustulum			1		4		
		Nitzschia inconspicua	39	45	46	67	33		47
		Nitzschia liebethruthii		1	2				2
		Nitzschia linearis			2	2	2		
		Nitzschia microcephala	5	2	25	16	31		
		Nitzschia palea							2
		Nitzschia palea var debilis	6		2				2
		Nitzschia paleacea	6	7					
		Nitzschia pusilla					1		1
		Nitzschia reversa		2			1		
		Nitzschia siliqua					1		
		Nitzschia soratensis			2		7		1
		Nitzschia subtilis	2						
		Nitzschia supralitorea	2	7	5	6	2		2
		Nitzschia valdestriata							2
		Planothidium	3	12					
		Planothidium delicatulum	2	6	7	8	9		2
		Planothidium dubium							2
		Planothidium frequentissimum	6	8	45	30	24		60
		Planothidium lanceolatum			4	4	3		74
		Planothidium minutissimum			2				
		Planothidium robustum		3					
		Pleurosigma delicatulum			1	1			
		Pseudostaurosira brevistriata	88	104	8		15		
		Rhoicosphenia					11		
		Rhoicosphenia abbreviata		5					9
		Rhoicosphenia californica			3				12
		Rhopalodia constricta					4		1
		Rhopalodia musculus		1					
		Sellaphora atomoides					1		
		Sellaphora nigri				1			
		Sellaphora pupula			1				
		Tryblionella					1		
		Tryblionella apiculata	7	5	2		2		6
		Tryblionella calida			1				1
		Tryblionella hungarica							2
		Tryblionella salinarum	2	1					
		Ulnaria acus			1	1	1		
	Coscinodiscophyceae	Aulacoseira islandica					1		
		Cyclotella atomus		4		4	15		
		Cyclotella meneghiniana	3	1	30	37	30		5
		Thalassiosira weissflogii			1	12	14		
	Fragilariophyceae	Fragilaria	1	1					
		Nanofrustulum trainorii	96	82	6	3	8		
		Staurosira	10	7					
		Staurosira binodis		5			3		
		Staurosira construens					2		
		Staurosira venter	88	87	44	49	41		7
		Tabularia fasciculata	74	35	1	23	25		15

Table 14. Summer 2020 soft-algae taxa list for Malibu watershed.

Sample Type	Phylum	Class	Species	Unit	Station						
					RSW-MC 004D	RSW-MC 003D	RSW-MC 013D	RSW-MC 002D	RSW-MC 001U	RSW-MC 009U	RSW-MC 007D
Epiphyte	Cyanobacteria	Cyanophyceae	Heteroleibleinia sp 1	count		20	100				
Macroalgae	Bacillariophyta	Meridiophyceae	Pleurosira laevis	um3/cm2		100000000	391772771	60746382	292460015		288600288
		Coscinodiscophyceae	Terpsinoe musica	um3/cm2				60929			
	Chlorophyta	Ulvophyceae	Ulva flexuosa	um3/cm2	1.443E+11			60746382	397607820		
	Ochrophyta	Xanthophyceae	Tribonema minus	um3/cm2				60929			
Microalgae	Chlorophyta		Chlorophyta	um3/cm2							897
		Chlorophyceae	Gongrosira schmidlei	um3/cm2							48701
			Scenedesmus abundans	um3/cm2	68						
			Scenedesmus armatus	um3/cm2				294	238		
			Scenedesmus ellipticus	um3/cm2				522			910
		Ulvophyceae	Ulva flexuosa	um3/cm2	9127513			2255601			
	Cryptophyta	Cryptophyceae	Cryptomonas	um3/cm2				934			
	Cyanobacteria	Cyanophyceae	Anabaena	um3/cm2	1772				361		
			Anabaena sp 1	um3/cm2				3.31E+03			
			Aphanocapsa delicatissima	um3/cm2		1.50E+01					
			Calothrix	um3/cm2							1.90E+05
			Geitlerinema acutissimum	um3/cm2		1.49E+03					
			Geitlerinema sp 1	um3/cm2							5.33E+04
			Geitlerinema sp 2	um3/cm2		2.39E+02					
			Heteroleibleinia sp 1	um3/cm2	1.38E+04	3.99E+04	1.03E+05	1.05E+05	1.06E+05		6.62E+04
			Leptolyngbya tenuis	um3/cm2	2.43E+02	3.76E+02	3.72E+04	1.78E+06	4.71E+05		1.42E+04
			Oscillatoria	um3/cm2	4.11E+04						
			Phormidium	um3/cm2				9.81E+03	2.98E+04		9.95E+04
			Phormidium sp 1	um3/cm2		8.54E+03					
			Pseudanabaena mucicola	um3/cm2			3.18E+02		1.77E+02		9.70E+01
			Pseudanabaena sp 1	um3/cm2	5.90E+01						
			Synechococcus	um3/cm2				1.70E+02			
			Tychonema sp 5	um3/cm2							3.77E+05
	Ochrophyta	Xanthophyceae	Tribonema minus	um3/cm2				2.79E+05			
	Rhodophyta	Florideophyceae	Chantransia	um3/cm2		2.30E+04	6.12E+03		1.46E+04		1.23E+04

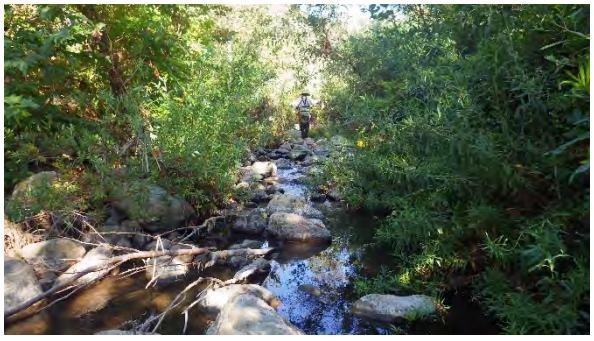
Appendix B – Photos of Sampling Sites

RSW-MC011D facing toward ocean

RSW-MC011D facing inland

RSW-MC004D facing upstream

RSW-MC004D facing downstream



RSW-MC003D facing upstream

RSW-MC003D facing downstream

Figure 7. Sampling location photos of the eight sampling sites within the Malibu Creek watershed.

RSW-MC013D facing upstream

RSW-MC013D facing downstream

RSW-MC002D facing upstream

RSW-MC002D facing downstream

Figure 7. (continued).

RSW-MC001U facing upstream

RSW-MC001U facing downstream

RSW-MC009U DRY facing upstream

RSW-MC009U DRY facing downstream

RSW-MC007U facing upstream

RSW-MC007U facing downstream

Figure 7.

INVOICE NO: LVS0321.0205
PO# 1223-OB FY21
Contact: Sara Williams

TO: **Accounts Payable**
Las Virgenes MWD
731 Malibu Canyon Rd
Calabasas, CA 91302

FROM: **Aquatic Bioassay**
29 North Olive St.
Ventura, CA 93001

PAY THIS AMOUNT: **$49,843**

DATE: **March 12th, 2021**

Invoice for tasks related to bioassessment reporting for spring 2020

Task	Contract Amount	Previous Billing	Current Billing	Billed To Date	Funds Remaining
Sampling					
Mobilization	$696	$0	$696	$696	$0
Bioassessment (9 sites, includes BMIs + attached algae)	$20,588	$0	$20,588	$20,588	$0
Laboratory Analysis					
Benthic Macroinvertebrates (8 sites)					
BMI 600 Count (Sorting and ID, SAFIT Level 2)	$8,610	$0	$8,610	$8,610	$0
BMI QC: to DF&W Rancho Cordova (1 sample)	$783	$0	$783	$783	$0
Attached Algae (8 sites)					
Diatom/Algae ID & Enumeration	$5,548	$0	$5,548	$5,548	$0
Diatoms & Algae Qualitative	$5,548	$0	$5,548	$5,548	$0
Ash Free Dry Weight (AFDM)	$464	$0	$464	$464	$0
Chlorphyll a	$742	$0	$742	$742	$0
Reporting					
CEDEN/SWAMP Reporting (Biology & Chemistry)	$1,160	$0	$1,160	$1,160	$0
Final Report	$5,705	$0	$5,705	$5,705	$0
Total	**$49,843**	**$0**	**$49,843**	**$49,843**	**$0**

Aquatic Bioassay
29 N. Olive St.
Ventura, CA 93001

April 5, 2021 JPA Board Meeting

TO: JPA Board of Directors

FROM: Engineering and External Affairs

Subject : Tapia WRF Summer Season TMDL Compliance Project: Approval of Scope Change No. 4

SUMMARY:

On April 29, 2019, the JPA Board accepted a proposal, in the amount of $207,917, from Stantec Consulting Services, Inc. (Stantec) and authorized the Administering Agent/General Manager to execute a professional services agreement for the Tapia WRF Summer Season Total Maximum Daily Load (TMDL) Compliance Project. Additional design elements and professional services, beyond those specified in the original scope of work were identified in Scope Changes Nos. 1 to 3. At this time, Scope Change No 4 is proposed to address design revisions related to the pipeline and integrate the plans and specifications for the Tapia Effluent Meter Replacement Project into the bidding documents. Incorporating the meter replacement work in the project and constructing the improvements through a single construction contract will reduce the potential for design conflicts, facilitate construction activities and minimize overall administrative costs.

RECOMMENDATION(S):

Authorize the Administering Agent/General Manager to execute Scope Change No. 4 with Stantec Consulting Services, Inc., in the amount of $17,892, for additional design and professional services associated with the Tapia WRF Summer Season TMDL Compliance Project.

FISCAL IMPACT:

Yes

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

Sufficient funds for the work are available in the adopted Fiscal Year 2020-21 JPA Budget. No additional appropriation is required.

DISCUSSION:

The project was developed in response to new nitrogen and phosphorus limits established by the 2017 Tapia NPDES Permit. Seasonal limits were established for total nitrogen (TN) and total phosphorous (TP) discharged to Malibu Creek. Winter season (November 16th through April 14th) limits of 4.0 mg/L for TN and 0.20 mg/L for TP become effective on November 16, 2030. The JPA's plan for compliance with the winter season TMDL nutrient limits will be achieved through implementation of the Pure Water Project Las Virgenes-Triunfo.

Summer season (April 15th through November 15th) limits of 1.0 mg/L for TN and 0.10 mg/L for TP become effective on May 16, 2022. On May 7, 2018, the JPA Board approved a technical memorandum selecting breakpoint chlorination and the discharge of potable water to Malibu Creek as the preferred method to comply with Tapia's summer season waste load allocation. The discharge of water to the creek is required to provide minimum flows as required by the NPDES Permit to sustain habitat for endangered Steelhead and other wildlife. This approach was deemed to be the most feasible and involves oxidizing the nitrogen present in the potable water. Recycled water will not be discharged to Malibu Creek during the summer season as the additional treatment to achieve regulatory compliance would be infeasible.

On April 29, 2019, the JPA Board accepted a proposal, in the amount of $207,917, from Stantec Consulting Services, Inc., (Stantec) and authorized the Administering Agent/General Manager to execute a professional services agreement for the Tapia WRF Summer Season TMDL Compliance Project. The scope of work involves extending an existing potable water main from the intersection of Piuma Road and Malibu Canyon Road southerly to the Tapia effluent overflow structure. Modifications would be made to the effluent structure including baffles, analyzers, chemical storage tanks and piping that need to allow sufficient contact time for breakpoint chlorination treatment in the overflow structure before discharge to Malibu Creek.

During the progress of design work, several additional design elements were discussed and prompted the need for scope changes. Following is a summary of the scope changes.

- Scope Change No. 1: Additional field topographic surveying was required and administratively approved in July 2019.
- Scope Change No. 2: Additional work was required for electrical power supply design modifications and to locate a sodium bisulfite pump at the chemical storage and feed facility. This work was administratively approved in August 2019.
- Scope Change No. 3: Additional design work and support was required for the following items: a chemical valve manifold, which will improve safety for operators and allow for easier adjustment of the valves during chemical deliveries; adjusting the pipeline alignment based on a field investigation; and to obtain a California Department of Fish and Wildlife Streambed Alteration Agreement. This work was approved by the JPA in December 2019.

In 2020, the JPA temporarily postponed the project after learning that the Los Angeles County Department of Public Works (Public Works) was proposing to replace the Malibu Canyon Road Bridge over Malibu Creek. However, Public Works recently notified the JPA of its current schedule for bridge replacement, which extends beyond the amount of additional time that can be offered by the Los Angeles Regional Water Quality Control Board for extension of the TMDL compliance deadline. As a result, staff has restarted the project with the goal of completing design and construction prior to the TMDL compliance deadline of May 16, 2022.

Scope Change No. 4 addresses design revisions related to the pipeline and allows for integration of the plans and specifications for the Tapia Effluent Meter Replacement Project into the bidding documents. Following is a summary Scope Change No. 4.

- Pipeline Revisions: Additional work is required for designing flexible expansion joints within a vault as opposed to hanging them underneath the bridge.
- Integration of Tapia Effluent Meter Replacement Project: Additional work is needed to incorporate the plans and specifications for the Tapia Effluent Meter Replacement Project and producing a single set of contract documents.

Incorporation of the effluent metering work with the contract will reduce the overall cost of administration. AECOM produced plans and specifications for metering design; however, the documents do not account for changes that will occur in the vicinity of the Tapia Effluent Pump Station overflow structure as part of the TMDL Compliance Project. Stantec will review the metering design and provide comments to avoid potential conflicts. Stantec and AECOM would each be responsible for their own design and engineering services during construction. Attached for reference is a copy of Scope Change No. 4.

Following is a summary of the scope changes and fee adjustments.

Description	Cost	Fee Adjustment	Cumulative percent change
Original Contract	$207,917.00		
Scope Change No.1	$12,400.00	$220,317.00	5.96%
Scope Change No.2	$7,450.00	$227,767.00	9.55%
Scope Change No.3	$15,609.00	$243,376.00	17.1%
Scope Change No.4	$17,892.00	$261,268.00	25.6%

Prepared by: Veronica Hurtado, Assistant Engineer

ATTACHMENTS:

Proposed Scope Change No. 4

Stantec

Stantec Consulting Services Inc.
300 N Lake Ave #400 Pasadena, CA 91101

March 23, 2020

Attention: Veronica Hurtado
Las Virgenes Municipal Water District (LVMWD)
4232 Las Virgenes Road
Calabasas, CA 91302

Reference: Change Order #4 for Tapia Water Reclamation Facility Summer Season Waste Load Allocation Compliance Design and Services During Construction Project

Dear Ms. Hurtado,

Stantec Consulting Services Inc. (Stantec) has reviewed the updated information and requirements based on the 90 percent design workshop and approval of plans by LA County Regional Planning. We understand that there are a few modifications to the design requirements for the project in order to provide benefits to LVMWD from the 90 percent design review. Some of these modifications represent a change in original assumptions from the contract scope of services and will require additional effort to complete. We have summarized the proposed scope of work and a detailed cost estimate below summarizing the changes required.

Pipeline Revisions - Scope of Services

Stantec will make the following design revisions for the pipeline:

- The flex tends on either end of the bridge crossing will be placed within vaults, with sleeves to the abutments to allow for seismic movement and vault access.
- Tee and blind flange will be relocated to south side of the bridge.

Based on approved drawings by LA County Regional Planning, the pipeline alignment and location of the pressure relief valve will be unchanged from the 90 percent design drawings.

New Flow Metering Project Review for Integration - Scope of Services

Stantec will review the Metering Project 100% plan and specifications from AECOM that were provided to Stantec and provide comments on potential conflicts with design requirements in the Tapia WRF Summer Compliance Design. Stantec is not responsible for identifying all conflicts, or any impacts of conflicts, or any impacts of integration of the Metering Project into a single construction contract. Stantec will provide a good faith effort to inform LVMWD of foreseen conflicts.

Stantec will append separate bid sheet, plans, and specifications prepared by others and provided by LVMWD into the Tapia WRF Summer Compliance Design contract documents for bidding.

Stantec will review RFIs and submittals during construction according to the original contract associated only with the scope of the Tapia WRF Summer Compliance Design project and in accordance with the plans and specs provided by Stantec. LVMWD will provide to Stantec submittal content that pertains to the Tapia WRF Summer Compliance Design project only for review.

Optional Task – Stantec can provide additional advisory services to assist in resolving questions during bidding or construction that arise due to integration of the Metering Project under the same contract. This consists of 20 hours of support and does not include modifications to design documents.

Assumptions and Exclusions

Assumptions

- The project has received a waiver for the Coastal Development permit from LA County Regional Planning. The 90 percent drawings were approved, and the pipeline alignment does not require revisions.

- 100% documents will be submitted as a bidding document set per original contract. Review and incorporation of another set of comments at 100% is not included in the scope of services.
- Revisions requiring additional quality review not included within original scope of services. Time for QA/QC for the design revisions is included herein.
- See above under New Flow Metering Project Review for additional assumptions.

Exclusions

Items not specifically identified in the Scope of Services section of this proposal are to be excluded from this work effort and would be considered additional services. Such services would include, but are not limited to, the following:

- Potholing
- Geotechnical

Client to Provide

- Record drawings for utilities in Malibu Canyon Rd for locating flex tend vaults

It is anticipated that the work will be based on the contract terms and rate schedule previously agreed to between the LVMWD and Stantec under PO#17442-OJ. The level of effort to complete the scope of work is $13,033 or $17,892 including optional services which increases the current contract amount of $243,376 to $256,409 or $261,268. Estimated hours and budgets are provided in Attachment A, using the schedule of billing rates from the executed contract, including 2021 rates escalated by 3% per the executed contract terms.

After approval by the JPA Board and subsequent notice to proceed for this change, the updated schedule for 100% drawings and specifications for bidding to LVMWD is six to eight weeks from notice to proceed, and review comments on the Metering Project is two weeks from notice to proceed. If you have any questions, please contact Zakir Hirani at (626) 568 6093.

Thank you for your consideration of this change order request.

Sincerely,

Stantec Consulting Services Inc.

Zakir Hirani, PE
Project Manager (626) 568-6093
zakir.hirani@stantec.com

Attachment A: Fee Estimate & Updated Rates

Las Virgenes - Triunfo JPA - Tapia WRF Summer Season Waste Load Allocation Compliance Design and Services During Construction														
		$318.27/hr	$259.92/hr	$238.7/hr	$223.85/hr	$196.27/hr	$167.62/hr	$145.34/hr	$128.37/hr					
Task	Activity Description	*Principal-in-Charge*	*Supervising Engineer - I*	*Supervising Engineer - II*	*Professional Engineer - I*	*Professional Engineer - II*	*Associate Engineer - I*	*Associate Engineer - II*	*Junior Engineer*	*TOTAL HOURS*	*Labor Charge*	*Other Direct Costs (ODCs)*	*Subcontractor*	*Total Charge*
1	Project Management						10			10	$1,676			$1,676
2	Data Collection and Review									0	$0			$0
3	Detailed Design (Change Order #4 - Pipeline Revisions)		3		4		4	14	11	36	$5,793			$5,793
3	Detailed Design (Change Order #4 - Metering Project Review)		4		4	3	6	14		31	$5,564			$5,564
4	Bid Phase Support									0	$0			$0
5	Engineering Services During Construction									0	$0			$0
6	Permitting									0	$0			$0
	TOTAL	**0**	**7**	**0**	**8**	**3**	**20**	**28**	**11**	**77**	**$13,033**	**$0**	**$0**	**$13,033**
	OPTIONAL TASKS													
A	Change Order #4 - Advisory Services due to Metering Project Integration	10					10			20	$4,859			$4,859
	OPTIONAL TASKS SUBTOTAL	**10**	**0**	**0**	**0**	**0**	**10**	**0**	**0**	**20**	**$4,859**	**$0**	**$0**	**$4,859**
										TOTAL				**$17,892**

April 5, 2021 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

Subject : Multi-Site Battery Energy Storage System Project: Authorization for SGIP Funding Application Deposit

SUMMARY:

On October 5, 2020, the JPA Board authorized the Administering Agent/General Manager to execute a professional services agreement with TerraVerde Energy, LLC (TerraVerde); issue a Request for Proposals; and apply for Self-Generation Incentive Program (SGIP) funding for the Multi-Site Battery Energy Storage System Project. Two proposals were received in response to the Request for Proposals. The most viable and cost-effective project proposal was submitted by Tesla, Inc. for a combination of battery storage and solar improvements at three JPA facilities: the Rancho Las Virgenes Composting Facility, Tapia Water Reclamation Facility and Recycled Water Pump Station.

To best position the JPA to obtain limited SGIP funding available for the project, the Administering/General Manager executed a Memorandum of Understanding (MOU) and Non-Disclosure Agreement (NDA) with Tesla, Inc., to allow them to submit an SGIP funding application on behalf of the JPA in a timely manner. The MOU and NDA identified the need for ratification by the JPA Board and were approved as to form by JPA Counsel.

Staff recommends that the JPA Board ratify the Administering Agent/General Manager's approval of the MOU and NDA; authorize the payment of a 5% refundable SGIP funding application fee; and approve an additional appropriation, in the amount of $50,000, to prepare environmental documentation for the Multi-Site Battery Energy Storage System Project.

RECOMMENDATION(S):

Ratify the Administering Agent/General Manager’s execution of a Memorandum of Understanding and Non-Disclosure Agreement with Tesla, Inc., to secure Self-Generation Incentive Program (SGIP) funding; authorize the Administering Agent/General Manager to deposit a 5% refundable SGIP funding application fee, in the estimated amount of $168,645, with Tesla, Inc.; and approve an additional appropriation, in the amount of $50,000, for the Multi-Site Battery Energy Storage System Project.

FISCAL IMPACT:

Yes

ITEM BUDGETED:

No

FINANCIAL IMPACT:

The total cost of this action is estimated to be $168,645 for the SGIP funding application deposit, which is entirely refundable if the Board decides not to pursue the project or SGIP funding.

DISCUSSION:

The CPUC's Self-Generation Incentive Program (SGIP) provides large financial incentives to support existing, new and emerging distributed energy projects that are installed on the customer's side of the utility meter. There is currently a very high demand for the limited SGIP incentives. Only contractors or energy system developers are eligible to apply for SGIP funding on behalf of their public agency clients. To authorize the submittal an SGIP funding application on behalf of a public agency, most energy system developers require the execution of a memorandum of understanding and non-disclosure agreement.

Terra Verde was able to expedite the Request for Proposals process for the JPA. Two proposals were received and evaluated by Terra Verde representatives and JPA staff. Based on the evaluation, Tesla was identified as providing the proposal with the greatest long-term cost-savings to the JPA. As a result, TerraVerde recommended that the JPA expeditiously execute a Memorandum of Understanding (MOU) and Non-Disclosure Agreement (NDA) as soon as practical to initiate the SGIP funding application and initiate negotiations on the potential terms of a project agreement for consideration of the JPA Board. The MOU and NDA do not obligate the JPA to award project development activities to Tesla, Inc.

The proposed project consist of installing battery storage improvements at the Rancho Las Virgenes Composting Facility, Tapia Water Reclamation Facility and Recycled Water Pump Station. In addition, the project would include a 1.2 MW solar installation at Rancho, east of the existing digesters. The purpose of the project would be to reduce SCE demand charges, while also providing a degree of energy resiliency during Public Safety Power Shutoffs (PSPS) events. The total estimated cost of the project would be $3.8 million, which would be partially offset by $2.6 million in SGIP funding, resulting in a net project cost of approximately $1.2 million.

Initial financial projections developed by TerraVerde based on the Tesla's proposal indicate that the project would have a 5-year payback period. After accounting for the $1.2 million investment, the total estimated net cost-saving to the JPA would be 7.5 million over the project lifespan. For the purpose of the analysis, the battery storage facilities were assumed to have a 15 year life, while the solar facilities were assumed to have a 25 year life. No escalation in SCE rates was included when calculating the cost-savings, so the figure provides a conservative estimate.

Once staff receives confirmation that the SGIP funding application has been submitted by Tesla and that the associated funds are reserved by SCE, staff will initiate the preparation of the necessary environmental document to comply with the California Environmental Quality Act. In addition, staff and TerraVerde representatives will negotiate with Tesla on the final

terms for the project development, which will be presented to the JPA Board for approval.

Prepared by: Doug Anders, Administrative Services Coordinator

ATTACHMENTS:

MOU
Tesla NDA

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding is made on March 25, 2021, by and between Las Virgenes Municipal Water District (herein referred to as "District") and Tesla, Inc. (herein referred to as "Contractor"), for the purpose of establishing specific objectives related to the California Self Generation Incentive Program ("SGIP Program").

WHEREAS The District is interested in exploring the opportunity to capture the value offered by the California SGIP Program that provides funding for installations of non-residential battery energy storage systems; and

WHEREAS The Contractor has provided the District with a project proposal (appended to this Memorandum as Exhibit A) to provide and install certain battery energy storage systems ("Systems"); and

WHEREAS The District and the Contractor desire to enter into a Memorandum of Understanding, establishing a framework for the SGIP incentive application submittal process, and implementation of potential battery energy storage project(s).

THEREFORE, it is mutually agreed upon and understood by the District and the Contractor that:

1. The Contractor has provided the District with a project proposal (appended to this Memorandum as Exhibit A) to provide and install certain battery energy storage systems ("Projects").

2. The Contractor will prepare and submit applications for the applicable SGIP Incentives (as indicated in Exhibit A), on behalf of the District for the Projects, subject to the District's timely provision of necessary information and consents which includes the District executing the Reservation Request Form, as described in Section 5.4.1 Section 1 of the Handbook and SGIP Customer Resiliency Attestation.

3. Contractor shall promptly notify District of the SGIP administrator's notification to Contractor of Project or Projects receiving assignment to an incentive step. For all applications receiving notifications of incentive assignment, the Contractor shall be solely responsible for paying the "SGIP Application Fee(s)," equal to 5% of the requested incentive amount, as described in the Handbook, Section 5.4.1, Section 2, Application Fee. District hereby agrees to reimburse Contractor the aforementioned SGIP Application Fee(s) within sixty (60) calendar days following Contractor's written notice to District of payment requirement thereof in the form of an invoice, subject to authorization by the District's Board of Directors. It is understood that in the event that the District's Board does not authorize reimbursement of the SGIP Application Fee(s), District shall not be liable to Contractor for reimbursement of the SGIP Application Fee(s). In such event, Contractor may terminate this MOU in accordance with Section 7, cease pursuit of the SGIP Incentives for the Projects and seek refund of the SGIP Application Fee(s) from the SGIP Program. Per the terms of the Handbook, the application fee(s) will be refunded by the SGIP Program to Contractor upon completion and verification of the installed project(s). Upon receipt of refund, Contractor shall reimburse the SGIP Application Fee(s) to District (to the extent paid by the District to Contractor as required in this Section) within thirty (30) days of receipt from the SGIP Program. Contractor cannot guarantee any particular refund value and shall not be responsible for portions of the SGIP Application Fee not refunded.

4. Contractor will use commercially reasonable efforts to advance the SGIP applications within the SGIP Program to obtain Conditional Reservation Letter(s), subject to the District's timely provision of necessary information and consents.

5. In the event one or more of the applications is awarded Conditional Reservation Letter(s) (as described in the Handbook), the District will enter into contract negotiations with the Contractor to procure and install the Projects (Nothing herein prevents the Parties from pursuing contract negotiations for one or more Projects prior to the issuance of the associated Conditional Reservation Letter(s).). If Contractor and the District have not executed a definitive contract for a Project within 180 days after issuance of the Conditional Reservation Letter for such Project, either party shall have the right to discontinue negotiations with respect to such Project, without liability. In such case, Contractor shall pursue a refund of the SGIP Application Fee and will remit or direct any such refund to the District in full (to the extent paid by the District to Contractor as required in Section 3); provided that Contractor cannot guarantee any particular refund value and shall not be responsible for portions of the SGIP Application Fee not refunded.

6. Whether or not one or more of the District's applications are awarded Conditional Reservation Letter(s), the District has no obligation, and makes no commitment to enter into an agreement with the Contractor with respect to such Projects; and makes no implied or written commitment to the Contractor for the reimbursement of any costs incurred by the Contractor associated with the application submittal process (except for the SGIP Application Fee as provided herein). Contractor cannot guarantee any particular refund value and shall not be responsible for portions of the SGIP Application Fee not refunded.

7. This Memorandum of Understanding may be terminated at any time by either Party, with or without cause; or will terminate when all Projects receiving Conditional Reservation Letters have either been negotiated to a mutually executed final contract or are no longer being negotiated, or in the event none of the District's Projects receive Condition Reservation Letters. Upon any such termination, the last sentence of Section 5 shall apply as if added to this Section 7.

District	**Contractor**
Las Virgenes Municipal Water District	Tesla, Inc.
By: DocuSigned by: David W. Pedersen 12C6BE2E4EC44E2...	By: _____
Name: David W. Pedersen	Name: _____
Title: General Manager	Title: _____

Tesla, Inc. Project Proposal

Tesla, Inc. proposes to submit SGIP applications to the SGIP Program for battery energy storage systems to be installed at certain Las Virgenes Municipal Water District sites as described in the table below (the "Projects") for the SGIP Budget incentives indicated below, all as set forth in the Memorandum of Understanding.

For any submitted applications that receive incentive step assignment by the SGIP Program, and subsequent notice of Conditional Reservation, Tesla, Inc. and the District will enter into contract negotiations for the procurement and installation of the Projects possessing Conditional Reservations, all as set forth in the Memorandum of Understanding. The value of the approved SGIP incentives and the Total Project Costs are outlined below.

In the event of any conflict between this Exhibit A and the Memorandum of Understanding, the Memorandum of Understanding will prevail.

Site Name	SAID	Service Address	SGIP BUDGET	SGIP INCENTIVE ($)	Total Project Cost ($)	Battery Size (kWh)	Inverter Size (kW-AC)
Composting Plant	3-004-5165-46	3700 LAS VIRGENES RD, CALABASAS CA 91302	Large Scale Budget, + Resiliency Adder	$624,300	$753,708	1251.6	625.8
Tapia TP	3-000-4368-56	731 MALIBU CANYON RD CALABASAS CA 91302	Large Scale Budget, + Resiliency Adder	$1,579,600	$2,283,886	4648.8	2216.5
JPA Recycled Water Remote Pumping Station	3-031-4500-42	4232 LAS VIRGENES RD CALABASAS CA 91302	Large Scale Budget, + Resiliency Adder	$1,169,000	$1,327,934	2682.0	1341.0

Mutual Non-Disclosure Agreement

Effective Date: March 17, 2021	**Tesla Contact: Nick Weber**

This Mutual Non-Disclosure Agreement ("NDA") is entered as of the Effective Date between the Tesla entity ("Tesla") and the company or individual ("Company") identified below. Tesla and Company agree as follows:

1. Purpose. Each party hereto or its Affiliates (each, a "Discloser") may disclose Confidential Information to the other party or its Affiliates (each, a "Recipient") in order to consider a potential business relationship with each other or fulfill the objectives of such relationship ("Purpose"). "Confidential Information" means information disclosed by Discloser that is marked as confidential or proprietary, or identified as confidential or proprietary at the time of disclosure (e.g. if disclosed orally or visually).

2. Confidentiality. Subject to Section 3, Recipient may not: (a) use Discloser's Confidential Information for any reason except the Purpose; or (b) disclose Confidential Information to any individual or third party except to its personnel, directors, consultants, professional advisors, and Affiliates, or (to the extent expressly approved in writing by Discloser) other unaffiliated third parties, in each case that (i) have a "need to know" such Confidential Information for the Purpose and (ii) who are informed of the confidential nature of the Confidential Information and directed not to use it other than for the purposes described above (collectively, "Authorized Recipients"). Recipient shall implement and maintain appropriate organizational, technical, and administrative security measures, exercising the same degree of care to protect Discloser's Confidential Information that it uses for its own confidential information of a similar nature, but in no event less than reasonable care. Promptly after learning of any unauthorized use or disclosure of, and/or unauthorized attempt to access or modify, any Confidential Information in Recipient's (or its Authorized Recipients') custody or control, Recipient shall notify Discloser in writing and cooperate with Discloser to investigate and mitigate any adverse effects. Recipient shall be responsible for any unauthorized use or disclosure of Confidential Information by its Authorized Recipients.

3. Exceptions. The obligations of Section 2 shall not apply to information that: (a) is already known to Recipient or its Authorized Representatives at the time of disclosure without obligation of confidentiality, (b) is or becomes publicly known through no wrongful act or omission of Recipient, (c) is rightfully received by Recipient from a third party without obligation of confidentiality, (d) is approved for release by written authorization of Discloser, or (e) was developed by Recipient independently and without the use or benefit of any of Discloser's Confidential Information. A disclosure that Recipient is required to make pursuant to any order or requirement of a court, administrative agency, other governmental agency, stock exchange, or otherwise required by law, or is a "public record" as that term is defined by California Government Code section 6252 that is required to be disclosed pursuant to the California Public Records Act, will not be deemed a breach of Sections 2 or 5 of this NDA, provided that Recipient has to the extent permitted by law: (x) promptly notified Discloser in writing of such order or requirement, (y) given Discloser an opportunity to challenge or limit the disclosure requirement or seek an appropriate protective order, and (z) cooperated with Discloser to narrow the scope of such disclosure to only that portion of the Confidential Information that is necessary to fulfill the order or requirement. A disclosure which complies with a U.S. Federal Acquisition Regulation permitting disclosures to the government concerning government contracts or with the California Public Records Act will not be deemed a breach of this NDA. Tesla hereby acknowledges, understands, and agrees that Company is a California Special District and as such is subject to then current provisions of the California Public Records Act. Each party is hereby given notice of the immunity set forth in 18 USC § 1833(b).

4. Anonymous Data. Tesla may share de-identified or anonymous data which does not directly identify the data subject(s), such as individuals, vehicles, products, or entities. Company may not, and may not attempt to, identify any data subject.

5. No Publicity. Except as provided in Section 3 above, or otherwise required by law; each party agrees that it may not make any public disclosures relating to the existence of this NDA or the Purpose without the other party's prior written consent.

6. Ownership. All Confidential Information and derivations thereof remain Discloser's sole property, and no license or other right to Confidential Information or intellectual property is granted or implied in this NDA or by any disclosure. This NDA does not require either party to disclose any information.

7. Affiliate. "Affiliate" means an entity which either controls or is controlled by a party or is under common control with a party, where "control" means the power to direct or cause the direction of an entity's management and policies through ownership or control of at least 50% of its voting securities or ownership interest.

8. As-Is Disclosures. Discloser warrants that it has the right to disclose the Confidential Information to Recipient. No other warranties are made whether express, implied, or statutory. All Confidential Information is provided on an "AS IS" basis. Discloser disclaims any and all other representations, warranties, or assurances concerning the Confidential Information, including as to accuracy, performance, completeness, suitability, or third-party rights.

9. Current and Future Development. Nothing in this NDA prohibits each party from developing, or having developed, or purchasing and implementing products or services that, without violation of this NDA, compete with other parties' products or services. Neither party may be presumed to have violated this NDA solely because it purchases, installs, uses, makes, has made, or offers products or services which compete with the other party's products or services.

10. Return or Destruction. Confidential Information, and all copies thereof, remain Discloser's property. Upon Discloser's written request, Recipient shall promptly return to Discloser all documents, presentations, and other tangible items of Confidential Information or, at the request of Discloser, certify in writing that all such Confidential Information has been destroyed; provided, however, that Recipient may retain and use such Confidential Information if and to the extent permitted by a license or similar right under a separate agreement which shall include but is not limited to any resulting contract(s), or ownership and operational information resulting from the Purpose. Recipient shall also use reasonable efforts to delete all electronic copies of Confidential Information under its control to the extent it is legally permissible for it to do so. If it would be unreasonably costly or burdensome for Recipient to immediately delete copies of Confidential Information from its routinely-made backup or disaster-recovery systems, then Recipient will not be required to do so until the next regularly-scheduled destruction of such copies in the usual course of business and in compliance with a reasonable back-up retention policy adopted by Recipient, provided that such copies remain subject to the requirements of Section 2 so long as they remain in Recipient's custody or control. If data is restored to Recipient's production systems from a backup or disaster recovery system after Confidential Information was otherwise required to be returned or destroyed, Recipient will make reasonable efforts to ensure that the restoration does not include any Confidential Information which should otherwise have been returned or destroyed or, if such Confidential Information is included in the restoration, securely delete such Confidential Information promptly after the restoration.

11. Termination. This NDA is effective as of the Effective Date and will expire 3 years thereafter. Either party may terminate its participation in this NDA for any or no reason by giving 60 days' prior written notice to the other parties. Expiration or termination will not affect a party's rights or obligations with respect to Confidential Information disclosed before such expiration or termination, and such rights or obligations will continue as long as Recipient has custody of or control over Confidential Information, but not longer than the term of this NDA. Sections 2–6 and 9–13 hereof will survive for 5 years after the expiration or termination of this NDA.

12. Disputes; Venue. This Agreement and the rights of the parties under this Agreement shall be governed by and enforced in accordance with the laws of the State of California. Venue of any action brought hereunder will be in Los Angeles County, California. Each party will be jointly and severally responsible for the acts and omissions of its Affiliates and each of their respective Authorized Recipients. The rights of and damages incurred by a party's Affiliate will be deemed to be rights of and damages incurred by such party. The parties shall discuss in good faith a resolution to any conflict or dispute under this NDA. The parties, for themselves and their respective Affiliates and Authorized Recipients, hereby waive any challenge to venue and jurisdiction in such courts.

13. Miscellaneous. This NDA constitutes the entire agreement between the parties regarding its subject matter and supersedes all prior agreements, representations, and understandings between the parties regarding its subject matter. If any provision hereof is held by a court of competent jurisdiction to be illegal or unenforceable, such provision shall be changed and interpreted so as to best accomplish the objectives of the original provision to the fullest extent allowed by law and the remaining provisions of this NDA shall remain in full force and effect. This NDA is written in the English language, and the English version shall prevail over any translation thereof. A waiver of any right hereunder does not imply a waiver of any other rights. No waiver, alteration, modification, or amendment of this NDA shall be effective unless in writing and signed by all parties. This NDA may be signed in duplicate originals or in separate counterparts, each of which is effective as if the parties signed a single original, and a facsimile of an original signature or electronically-signed version transmitted to the other party is effective as if the original was sent to the other party. Any notice required or permitted by this NDA shall be made in writing and be deemed delivered upon verification of delivery to the other party. Each party agrees that it shall not assign, transfer, or otherwise convey or delegate any of its rights or duties under this NDA (except to Tesla, Inc. or to the successor in a merger, acquisition, or corporate reorganization of the assigning party) without the other party's prior written consent, and any attempt to do so shall be void.

Tesla and each Company execute this Mutual Non-Disclosure Agreement through their duly authorized representatives.

Tesla: **Tesla, Inc.**

Signed:

Printed: RJ Johnson

Title: Sr. Director, Energy Operations

Date: Mar 17, 2021

Contact Information:
Legal Department
PO Box 15430, Fremont CA 94539, USA
Phone : +1-650-681-5000
Governing Law: California
Venue: Los Angeles, California

Company: **Las Virgenes Municipal Water District**

Signed: David W. Pedersen
DocuSigned by:
1206BE2E4EC44E2...

Printed: David W. Pedersen

Title: General Manager

Date: March 22, 2021

Contact Information:
Name/Dept.: John Zhao
Address: 4232 Las Virgenes Road, Calabasas
Phone: (818) 251-2230