



# HUMBOLDT BAY MUNICIPAL WATER DISTRICT

Board of Directors Meeting

November 2016



Lateral Valves, Collector 1

# Minutes





Minutes for Meeting of Board of Directors

October 13, 2016

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A. **ROLL CALL**

President Hecathorn called the meeting to order at 9:00 a.m. Director Rupp conducted the roll call. Directors Hecathorn, Laird, Latt, Rupp and Woo were present. General Manager Paul Helliker, Superintendent Dale Davidsen, Business Manager John Friedenbach and Board Secretary Sherrie Sobol were present. John Winzler and Pat Kaspari were present for a portion of the meeting.

B. **FLAG SALUTE**

President Hecathorn led the flag salute.

C. **ACCEPT AGENDA**

On motion by Director Latt, seconded by Director Rupp, the Board voted 5-0 to accept the agenda.

D. **MINUTES**

Director Laird requested the Minutes reflect he chaired the meeting since President Hecathorn was not able to attend. On motion by Director Rupp, seconded by Director Laird, the Board voted 5-0 to approve the Minutes of the September 8, 2016 Regular Meeting as amended.

E. **PUBLIC COMMENT**

Mr. Michael O'Connor of R.J. Ricciardi, LLP, (the District's new auditor) introduced himself to the Board. He thanked the Board for the opportunity to serve as auditor and welcomed questions at any time.

F. **CONSENT AGENDA**

Director Laird pulled Item 1, City of Blue Lake, Tap the Mad notice. He stated he would like the District to contribute towards the purchase of supplies for the Tap the Mad effort. On motion by Director Rupp, seconded by Director Woo, the Board voted 5-0 to accept the Consent Agenda.

G. **CORRESPONDENCE**

Letter to ACWA JPIA re: Dental and vision coverage for Directors

Mr. Helliker shared the District's letter to ACWA/JPIA regarding insurance. Pursuant to the discussion last month, staff notified JPIA of new dental and vision coverage for the Directors effective December 1, 2016.

H. **CONTINUING BUSINESS**

1. **Water Conservation Regulations**

Mr. Helliker provided an update on Water Conservation Regulations. Data released by the State Water Board shows that water agencies reported a savings of 18% in August compared to 2013. News articles were quick to point out the conservation level is lower than that achieved in August 2015. Mr. Helliker noted the decline in conservation is not surprising since over 80% of water agencies have demonstrated they have adequate water supply to meet demand for the next three years. He shared the summary report from the State Water Board and noted the District is one of 12 agencies that did not meet the August conservation target since use was greater than in 2013. The State Water Board staff arbitrarily assigned a zero target to all agencies whose stress test conservation targets were less than 0, and they consider the District to be in violation. He noted that we are not in violation of our conservation standards, which were defined by the stress test regulations to be -139%. Mr. Helliker added the increased usage is due to increased operations by an industrial customer.



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Mr. Helliker stated the Urban Advisory Group (UAG) met September 19 and 20 to discuss implementation options for Executive Order B-37-16. He attended the meeting and the discussion focused on updates to water shortage contingency plans, water use efficiency and water leak programs. He shared the agenda and highlights of the meeting with the Board. DWR and State Water Board staff are proposing that water shortage contingency plans include a five-year drought outlook with future actions specified to address projected conditions. Water agency representatives strongly objected to the proposal as there is a lack of relevance of the hypothetical drought to current year actions to address a water shortage, as well as potential legal complications. Water agency staff recommended the five-year drought analysis be part of the Urban Water Management Plan (UWMP) since the UWMP currently requires a three-year analysis.

In regards to water use efficiency, state staff are insisting that the Executive Order only allows the use of method 2 in SB X7-7 and are proposing new standards. The new standards include indoor water use of 55 gallons per capita per day; outdoor use standard consisting of the irrigable area times the landscape evapotranspiration rate in effect at the time it was installed; and commercial, industrial and institutional use would be the same standards as outdoor use for the landscape component. The majority of water agencies want to continue to use method 1, a percentage reduction from a baseline or method 3, a percentage reduction from hydrologic region target. The proposed method 2 will require significant time and expense to develop data on irrigable area for each parcel in a service territory and to maintain and update the complete database to address specific conditions at any account.

The leak reduction program will establish stringent audit requirements and the State Water Board is scheduled to adopt leak reduction targets in 2019. Mr. Helliker stated Mr. Davidsen and Mr. Syphanthong attended a training on the leak reduction program and it will be very time intensive.

Director Laird again discussed the issue of agricultural water use. He noted that agricultural use accounts for the largest percentage of water use and residential use only accounts for ten percent of overall water use. Director Woo agreed and Director Rupp inquired if there is any discussion regarding agriculture and their conservation? Mr. Helliker stated he will look into the conservation efforts required by agriculture. The Board concurred that all the attention on residential use diverts attention away from agriculture, the larger water user. Director Latt reiterated it would be good to ask what agriculture is doing in regards to water conservation.

2. Water Resource Planning

Local Sales

Mr. Helliker stated that Rio Dell and Fortuna are no longer interested in pursuing a grant for a pipeline south towards them. The City of Trinidad and the Trinidad Rancheria are still interested in a pipeline north to them. GHD has revised the grant proposal to focus only on going north. The Trinidad town council will be discussing if they are interested in serving as the grant recipient since the Rancheria is not eligible to receive funding as they are not a water supply provider.

Transport

Mr. Helliker requested, but has not yet received updates from Santa Clara Valley Water District regarding their discussions with Mr. Terry Spragg.

Instream Flow Dedication

The Advisory Committee met on September 20 and requested a graphic that displays the water



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flowrates that would be available for dedication at Essex to various uses. Mr. Helliker shared the graphic with the Board.

Advisory Committee Meeting

Mr. Helliker, Directors Rupp and Woo reported out on the Advisory Committee meeting. Director Rupp stated all the members were there and it was a good meeting. The three top-tier options were discussed, local sales, transport and instream flow. Mr. Helliker noted one of members inquired what the District was doing to increase local sales. Mr. Helliker stated the District is working with the Harbor District to bring in new tenants and there are some possible options with instream flow to provide revenue. There was some concern regarding drawing down the lake for instream flow or transport purposes. It was pointed out that when the two pulp mills were active, the lake was not drawn too low. The maximum amount for transport or instream flow would not be more than the mills were using therefore, there should be no difference. The AC was satisfied with the answer. Director Woo stated that in regards to instream flow, consensus was that with the water no longer being diverted to the mills, the Mad River has more species than previous and resource agencies are ok with the status quo in the lower reach of the Mad River. The committee agreed the District should move forward with an application for instream flow.

Director Rupp stated the group discussed expanding the transport area since it was clear there were no potential buyers in the north coast region. The committee was open to this provided that the District would only transport to public agencies, and not private. Director Laird inquired if the committee was made aware that the expanded area included State connections, Sites Reservoir etc. Mr. Helliker, Director Rupp and Director Woo stated yes, it was very clear.

Director Woo stated the Advisory Committee is a fairly large group of professionals and everyone's time is valuable. She suggested a more structured meeting next time to better utilize the time available. Director Laird stated he would like a Board discussion with Mr. David Aladjem regarding the implications and challenges of Mad River water rights.

3. Cannabis activities

Mr. Helliker provided an update on actions from regulatory agencies. The Regional Water Quality Control Board staff developed a scope for an aerial survey of the Mad River watershed that will provide them with specific parcels on which cannabis activity is happening. They plan to use new aerial photography as evidence for enforcement actions. Once they determine when they will do the survey and what financial assistance they need, the District will contribute towards the project. The survey will likely occur in the spring.

Mr. Helliker provided an update on an illegal grow operation above a Ruth Lake Lease Lot. As previously noted, the District's legal counsel sent the property owner a notice to stop the illegal water withdrawals from Ruth Lake. The growers appear to have harvested their crop, removed the water line and abandoned the pump in the lake. Staff will remove the pump from the lake. Mr. Helliker also shared photos of the property owner's site taken by a California Department of Fish and Wildlife officer responding to complaint about the site. The Trinity County Environmental Health Department will likely issue a cleanup order to the property owner. Director Latt stated action needs to occur prior to harvest, not after. Mr. Helliker stated the District has a strategy involving the Trinity County Sheriff for next season.

4. Ordinance 16 and Contract Changes

As previously discussed, Ordinance 16 and the Contract for Supply of Water with the Municipal Customers requires some updates. Staff prepared draft language for four areas: 1) Renewal/revision of the contract term; 2) updated calculation of the peak rate allocation (to



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address Manila's situation); 3) Revision of the limitation on capital expenditures- to reference a five-year cycle for update and Discussion of the District's Capital Improvement Plan and 4) Direction of the incremental revenue from the ReMAT contract into a pay for capital expenses. The first three items have been discussed with the Municipal Customers at the September Muni Meeting. The fourth item is an addition being proposed and the Municipal Customers have conceptually agreed on. Mr. Helliker will be attending Board/Council meetings to brief them directly on the proposed changes.

5. Certificate of Acceptance for Easement Deed-Notice of Location to be recorded by Axel Properties, LLC

At the August Board meeting Mr. Kaspari reported that Axel Properties is proposing a new development along West End Road, at the former Wayne Bare Trucking site and the owner would like to record a "Notice of Location" for the existing right-of-way versus having a floating easement. The Board authorized the Notice of Survey and the Notice of Location at the property owner's expense. Mr. Friedenbach stated that legal counsel suggested the Board approve a resolution for this as well. Director Rupp read Resolution 2016-12 Authorizing the General Manager to Issue a Certificate of Acceptance for Easement Deed-Notice of Location to be Recorded by Axel Properties LLC. The Board voted 5-0 by roll call vote to approve Resolution 2016-12.

I. NEW BUSINESS

1. Chromium 6

Last month, the Environmental Working Group released the results of their nationwide study of water systems. Their report states that water tested in Humboldt County for Chromium 6 (also known as hexavalent chromium) is far above the .02 parts per billion recommended in a public health goal for California. Mr. Helliker received a call from reporter Kym Kemp regarding the topic. He explained that the public should not be alarmed. The State of California established a maximum contaminant level (MCL) for hexavalent chromium of 10 parts per billion. Pursuant to the Unregulated Contaminant Monitoring Rule, the District has monitored for the presence of hexavalent chromium in its water supplies. The results ranged from 0.18 to 0.23 parts per billion which is significantly below the regulatory requirement. He also pointed out that chromium is a naturally occurring element in soil in California's coastal range and is present in low concentrations in rivers, lakes and groundwater. He shared the article posted by Ms. Kemp along with the fact sheet from the State Water Resources Control Board and Director Woo's letter to the Editor which was published in the Times Standard and the Mad River Union.

Director Woo points out that the public health goal for hexavalent chromium is indeed 0.02 and that it is much lower than the California regulatory requirement. She also noted that the laboratory reporting limit in a study specifically investigating hexavalent chromium water contamination is 0.1 parts per billion. The goal of 0.02 is less than the laboratory reporting limit of 0.1, indicating it is a goal that cannot be feasibly attained presently. Even if a treatment plant could be built to filter out hexavalent chromium, it could not be reliably measured. She also calls out the fact that the public health goal is "exactly that: a goal, which at this time cannot be feasibly attained."

2. Recent water legislation

Mr. Helliker provided a brief overview of several new bills recently signed into law by Governor Brown that impact California Water.

3. CLOSED SESSION- this will be the last item on the agenda

The Board went into closed session at 2:08 pm to discuss a Public Employee Performance Action Plan for the General Manager (pursuant to Section 54957(b)(1)).



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OPEN SESSION

The Board returned to open session at 2:37 pm. There was no reportable action.

J. REPORTS (from Staff)

1. Engineering

- a) Ranney Collector 1 Lateral Replacement Project (partially funded by Prop 84 NCIRWMP grant)

Mr. Kaspari provided an update on the project. The first and second laterals are in and they were hoping to get 150 feet on each of them but were only able to get about 100 feet on the first lateral and 90 feet on the second lateral until each hit a barrier. This is not an issue however since the flows are really good. Mr. Davidsen stated due to the impending storm, his crew is working 12 hour shifts and doing all they can to get the pumps back in before the wind and water levels preclude it. The wind is a big concern in regards to equipment and personnel safety. The Board thanked Mr. Davidsen and his crew for the efforts and requested Mr. Davidsen share this with his staff.

The contractor submitted Progress Payment Request #3 in the amount of \$256,500 less retainage of \$12,825 for \$243,675. Mr. Kaspari reviewed the request and recommended payment. On motion by Director Rupp, seconded by Director Laird, the Board voted 5-0 to approve Progress Payment #3.

- b) Blue Lake-FG CSD Water Line Replacement over Mad River (funded by Prop 84 NCIRWMP grant and FEMA Hazard Mitigation Grant)

Mr. Kaspari reported the amendment to the Biological Evaluation was submitted to NEPA. The amendment was required since the new design involves directional drilling under the Mad River. The results show no rare or sensitive plant species were found in the Project Study Boundary and no wetlands were present. Mr. Kaspari will strongly suggest there is no need for a consultation with resources agencies given the results of the study, if FEMA considers such a consultation.

- c) Eighth Five-Year Part 12D Safety Inspection Report, R.W. Matthews Dam

Mr. Kaspari stated the Independent Consultant completed the Eighth Five-Year Part 12D and provided a summary of the report. The inspection shows the dam is well maintained and safe for operation. The independent consultant recommended the District conduct a seismic analysis based on a Cascadia event, and also obtain the as-built drawings of the dam. Mr. Kaspari stated the report will be submitted to FERC for their review and recommendations.

- d) 12kV and Surge Tower HMG/PDM

Mr. Kaspari stated the 12kV switchgear project was rejected by the PDM grant program. They decided that the fact that the industrial system pumps would still be located in the inundation zone (even though those pumps are not critical to system operations), it was not eligible. They did not ask for clarification and simply rejected the project. The project is still being considered for the HMG grant however. FEMA is requesting information on the property site as it is owned by the NCRA, including easement information. Mr. Helliker stated he contacted the NCRA regarding an easement. They responded quickly and offered a license agreement with an initial term of thirty-years, automatically renewing after the initial term for successive five-year term intervals with an annual fee of \$1,200. Mr. Helliker noted the agreement will not be signed until it is confirmed that the District received the grant.

Mr. Kaspari stated the District has responded to a request for additional information on the





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Surge Tower as well. He is hopeful that one or both projects will receive funding.

e) Main Collector Pipeline Single Point Failure Focused Engineering Study

Mr. Kaspari stated the District currently has a single pipeline that conveys water from all of its potable water pump stations up to the Turbidity Reduction Facility (TRF) for final treatment and storage. If the pipeline fails at a single point between the Essex and TRF site, the District would have no way to provide water to its customers. The study focused on how to get a redundant pipeline and assessed four alternatives for resolving a single point failure. He stated that the single point failure issue is a problem that needs to be addressed, however it is not necessarily urgent to address it in the next few years. The District has a good maintenance program that keeps the main water line and associated valves in good working order and there are no imminent signs of failure. He discussed the four alternatives and recommended the District move forward with planning and pursuing funding for alternatives one and three. Alternative one is a connection to the City of Blue Lake/Fieldbrook Glendale waterline at an estimated cost of \$337,000. Alternative three is redundant waterline within the 1-MG Reservoir Drain Line Right-of-Way at an estimated cost of \$2,415,000. He noted that while Alternative three would be the ideal alternative to construct, it makes sense to pursue Alternative 1 as well, due to the cost effectiveness of the project. He noted both alternatives would likely be eligible for grant funding under the Hazard Mitigation Grant or the Pre-Disaster Mitigation Grant program.

2. Financial

Director Rupp provided the September Financial Report. Director Laird reviewed the bills and stated all good. On motion by Director Rupp, seconded by Director Latt, the Board voted 5-0 to approve the September 2016 financial statement & vendor detail report in the amount of \$568,449.85.

3. Operations

Mr. Davidsen provided the October Operational Report. As reported last month, a new maintenance worker Bruce Brashear started on September 1. He is doing well and is an asset to the maintenance department. Mr. Davidsen met with Mr. Helliker, Mr. Kaspari, Jessica Hall and Dr. Kate Panayotou (visiting from Australia) to discuss methods to stabilize the dunes over the District's pipeline. Director Laird inquired about the concern over the exposed pipeline given that the pipeline over the slough is completely exposed. Mr. Davidsen explained the pipelines are made of different materials. The pipeline at the dunes is more susceptible to damage from exposure because its walls are thinner than those of the pipe segment that spans the slough. Mr. Davidsen also reported that Hamanaka Painting started painting the outside of Collector 3 and the inside will be painted later either in winter or early spring. Projects underway with District staff include the TRF maintenance as they prepare to start up the TRF, replacement of the Essex septic system and the Samoa Peninsula telemetry upgrade. Training at two safety meetings included Trenching and Excavation Safety as well as Scaffolding and forklift man basket use training.

K. DIRECTOR REPORTS & DISCUSSION

1. General

Director Latt stated he would not be able to attend the November Board as scheduled. Director Laird stated he too had a conflict. The Directors agreed to move the meeting to Wednesday, November 16 with Board packets going out on November 10<sup>th</sup>.

2. ACWA – JPIA

Nothing to report.



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3. **ACWA**

ACWA Fall Conference and training

Mr. Helliker stated the ACWA Fall Conference is scheduled for November 29-December 2 in Anaheim. He inquired who would like to attend. He and Director Rupp would like to attend. On motion by Director Rupp, seconded by Director Woo, the Board voted 5-0 for appropriate staff and Directors to attend.

4. **Organizations on which HBMWD Serves: RCEA, RREDC, NCRP**

Director Rupp stated the RREDC meeting was cancelled. Director Woo stated RCEA has been very time consuming with the Community Choice Energy Program and an HR audit going on. She is anticipating several recommendations from the HR audit.

**ADJOURNMENT**

The meeting adjourned at 2:38 pm.

Attest:

\_\_\_\_\_  
Barbara Hecathorn, President

\_\_\_\_\_  
J. Bruce Rupp, Secretary/Treasurer



# Consent



U.S. Department of Homeland Security  
1111 Broadway, Suite 1200  
Oakland, CA. 94607-4052



# FEMA

September 30, 2016

Donna Rupp  
Project Coordinator  
Trinity County Resource Conservation District  
1 Horseshoe Lane  
Weaverville, CA 96093

Dear Ms. Rupp:

We have received documentation from the Humboldt Bay Municipal Water District confirming their adoption of *Trinity County Hazard Mitigation Plan* on August 11, 2016. This jurisdiction is now in compliance with the planning requirements of the Disaster Mitigation Act of 2000.

The *Trinity County Hazard Mitigation Plan* is valid for five years from the approval date, September 29, 2016, for all approved participants. The plan must be reviewed, updated and submitted to FEMA Region IX for approval at least once every five years. An updated list of the current status of participating jurisdictions is enclosed with this letter.

The approval of this plan ensures the Humboldt Bay Municipal Water District's continued eligibility for project grants under FEMA's Hazard Mitigation Assistance programs, including the Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program. All requests for funding, however, will be evaluated individually according to the specific eligibility, and other requirements of the particular program under which applications are submitted.

If you have any questions regarding the planning or review processes, please contact Alison Kearns, Lead Community Planner, at (510) 627-7125 or by email at [alison.kearns@fema.dhs.gov](mailto:alison.kearns@fema.dhs.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Jeffrey D. Lusk".

Jeffrey D. Lusk  
Division Director  
Mitigation Division  
FEMA Region IX

Enclosure

cc: Marcia Sully, State Hazard Mitigation Officer, California Governor's Office of Emergency Services  
Jose Lara, Chief of Hazard Mitigation Planning, California Governor's Office of Emergency Services

Status of Participating Jurisdictions as of September 26, 2016

Jurisdictions – Adopted and Approved

#	Jurisdiction	Date of Adoption
1	Trinity County	9/23/2016
2	Humboldt Bay Municipal Water District	8/11/2016

Jurisdictions – Approvable Pending Adoption

#	Jurisdiction



## HUMBOLDT BAY MUNICIPAL WATER DISTRICT

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### BOARD OF DIRECTORS

BARBARA HECATHORN, PRESIDENT  
ALDARON LAIRD, VICE-PRESIDENT  
J. BRUCE RUPP, SECRETARY-TREASURER  
SHERI WOO, DIRECTOR  
NEAL LATT, DIRECTOR

### GENERAL MANAGER

PAUL HELLIKER

October 25, 2016

Ms. Nancy Ward  
Governor's Authorized Representative  
California Office of Emergency Services  
3650 Schriever Avenue  
Mather, CA 95655

Dear Ms. Ward:

This letter is in response to the RFI letter from Jeffrey Lusk (FEMA Region IX) to Nancy Ward (CalOES) dated September 26, 2016. A copy of which was provided to us. The RFI letter contained the following requests:

1. The proposed location of the switchgear is on property owned by the North Coast Railroad Authority, and easements or rights-of-way would need to be obtained. Projects that are dependent on a contingent action to be feasible are not eligible for HMGP funding. Please provide details on this property purchase including anticipated purchase date.
2. The subapplication does not contain information that confirms the pumps and other equipment required to operate and monitor the pumps will not be damaged during a flood event. The application states that these components are located on the same site and potentially vulnerable to flood damage. Projects that are dependent on a contingent action to be effective are not eligible for HMGP funding. Please address how these components will be protected against flood damage to ensure operability of the entire system.
3. The benefit-cost analysis cites a customer base of 80,000 people. The documentation states that the Humboldt Bay Municipal Water District serves 80,000 people. Please include documentation that shows that the Essex Control Facility services 80,000 people.

The above requests are addressed in the following sections.

### 1. Switchgear Location and Requirement for Easement/Right-of-Way

As stated in our application, there are two proposed locations for the relocation of the switchgear. Alternative 1 is proposed on North Coast Railroad Authority property and Alternative 2 is proposed on Humboldt Bay Municipal Water District property. Humboldt Bay Municipal Water District (HBMWD or District) has been in correspondence with the North Coast Railroad Authority (NCRA) regarding the potential for locating the new switchgear on NCRA property (APN 504-201-004, shown as Alternative 1 in the attached Figure 2 from the original grant application). NCRA has provided the District with a letter (attached) stating that NCRA's Board of Directors has approved a draft licensing agreement (also attached) for locating the switchgear on the NCRA parcel. The NCRA has provided this commitment to work toward a final licensing agreement with the District for this project, and we are confident that the final agreement will be signed by December 31<sup>st</sup>, 2016. Even though we are confident that we will obtain an agreement with the NCRA for the proposed project site Alternative 1, it could still be constructed without an agreement with NCRA on project site Alternative 2. As described in the original grant application, if the District is not able to secure an agreement from NCRA to



Ms. Nancy Ward  
October 25, 2016

locate the new switchgear on the railroad bed, HBMWD will then move the new switchgear approximately 25-feet farther to the south, off of NCRA property and back on to HBMWD property (see Alternative 2 in the attached Figure 2). All other project components would remain the same.

## **2. Potential for Damage to other Essential System Components during a Flood**

The District's 12-kV switchgear provides power to the District's entire Essex facility, including all of its source water pumps, which are located on the top of the Pump Stations (PS) 1 through 4. The dam break inundation modeling that was performed shows that the existing 12-kV switchgear would be flooded in the event of a dam failure (see Figure 2), rendering all of the District's source water pumps without electricity. The District's Pump Stations (also referred to as Collectors) generally consist of 13-foot-diameter concrete caissons that extend downward approximately 70-80 feet below the ground surface. At the bottom of the caissons, there are screened laterals that project radially outward. Water is pumped through these screened laterals, up into the caisson, and into the District's system for treatment/transmission. The caissons also extend 35 to 40-feet upward from the ground surface and have various decks that contain piping, valving, pump motors, transformers, and other electrical equipment. Photos of PS-1 and PS-3 have been attached to give an example of what the Collectors look like (PS-2 and PS-4 are very similar). As seen in the Collector 1 photo (Photo 1), the pump motor deck is situated over 30-feet above the normal river level, and the transformer is another 10-feet higher than the pump motors. The same is true for PS-3 (Photo 2). While the motor deck at PS-3 is not as far above the ground as that of PS-1, Collector 3 is located on a terrace that is well above the river. All of the collectors were constructed with pump motor decks and electrical equipment significantly above the river level to prevent this equipment from being damaged in the event of large flood events. The District also has a preparedness plan in place to put into action in the event of a major emergency, such as a dam break. Although the pumps are significantly above the river level, if the dam were to break, one of the first actions the District would take would be to wrap pump motors in plastic as an added safety factor to protect them from any flooding damage. This would likely be done for Collector 1 before any of the other Collectors.

In the worst-case scenario, Collector 1 would be the only Pump Station in operation after a dam failure, as it has a dedicated underground electrical duct bank that serves it, and because the pump motors at Collector 1 are so far above the river. In this worst-case scenario, the District would have reduced capacity, but would still be able to serve water to its customers. Collector 1 is a very reliable producer, and there is currently a rehabilitation project in construction under which new screened laterals are being installed that will further increase the production capacity of Collector 1.

The District operates their pump stations via their SCADA system. The SCADA cabinets are housed in the Control Building (see Figure 2), and may be flooded and become inoperable in the event of a dam break. However, the District has the ability to operate their pumps manually and would do so if the SCADA system were inoperable, and would therefore still be able to continue to provide water to customers. The weak point of the entire system is the failure of the main 12kV switchgear, and this project would remove that weak point.

## **3. Customer Base Documentation**

The District's Essex Control Facility provides water to seven wholesale municipalities (urban water suppliers). The customers serviced by these municipalities make up the District's total customer base of approximately 80,000 people.

The District's jurisdiction area division boundary map is attached. There are five divisions. As required by the California Water Code, the District utilized the 2010 Census data contained in the Humboldt County Elections Office population data by precinct to develop the respective division boundaries. The service areas for the seven wholesale municipalities were then superimposed on the District's division boundaries. The map shows a total District area population of 90,536; however, approximately 8,000 people live in the more rural parts of the District's divisions. These people have their own water source and are not serviced by the District or its seven municipal customers. The remaining 82,536 customers figure was rounded down to 80,000 for the grant application.

Ms. Nancy Ward  
October 25, 2016

### **Conclusion**

The District's 12-kV switchgear is vulnerable to a major flood and/or dam failure event. This switchgear is the weak point at the Essex site, as the other pumps, motors, transformers, and other electrical equipment are located on the upper decks of the collectors, 30 to 40-feet above the normal river levels. If the proposed project does not occur and there is a major flood event that shorts out the switchgear, it would cause the loss of potable water service, as well as the loss of associated wastewater and firefighting services, to over 80,000 residents of Humboldt County. The NCRA Board of Directors has approved a draft licensing agreement for locating new switchgear outside of the dam inundation area on their parcel near the District's Essex Control Facility. If the switchgear were relocated out of the dam break inundation area, the District would be able to continue to serve water to its customers during this emergency.

We believe this information should address the questions posed given in FEMA's September 26, 2016 RFI letter. Please do not hesitate to contact me if there are any other questions or concerns regarding this project or grant application.

Respectfully,



Paul Helliker,  
General Manager

Cc: Joe Peterson, CalOES  
Marcia Sully, CalOES  
Katie Grasty, FEMA Region IX  
Pat Kaspari, GHD

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*e-letter*



October 19, 2016

Paul Helliker  
Humboldt Bay MWD  
Helliker @hbmwd.com  
CC: Sherrie Sobol, [sobol@hbmwd.com](mailto:sobol@hbmwd.com)

RE: ACWA JPIA Benefit Program

Dear Paul,

This letter is to confirm the addition of Directors and their dependents to the dental and vision plans at Humboldt Bay MWD, effective December 1, 2016.

Please retain a copy of this letter for your records.

If you have any questions, please do not hesitate to contact our office at 1-800-736-2292.

Sincerely,

A handwritten signature in cursive script that reads "Susan Offerman".

Susan Offerman  
Benefits Analyst II

**Shake  
Out**<sup>TM</sup>

**The Great California ShakeOut**  
*Annual Statewide Earthquake Drill*

# Certificate of Participation

presented to

**Humboldt Bay Municipal Water District**

as a registered participant of the

# 2016 Great California ShakeOut



**Kate Long**  
Earthquake and Tsunami Program, Deputy Manager  
California Governor's Office of Emergency Services



**Cal OES**  
GOVERNOR'S OFFICE  
OF EMERGENCY SERVICES



**Earthquake  
Country  
Alliance**  
*We're all in this together.*



**Mark Benthien**  
Executive Director  
Earthquake Country Alliance/SCEC

Eureka Times-Standard (<http://www.times-standard.com>)

SECTION E5, PAGE NO. 1

## Why biomass plants can't turn pot into energy

### High moisture content, low quantity compared with other resources are deterrents

By Hunter Cresswell, [hcresswell@times-standard.com](mailto:hcresswell@times-standard.com), [@eurekaTS](#) on Twitter

Thursday, October 20, 2016

Every year law enforcement seizes around 100,000 marijuana plants on average in Humboldt County and that plant matter could be turned into energy if it were feasible and efficient but right now it's not.

Redwood Community Energy, the local community choice aggregation program ran by Redwood Coast Energy Authority, is set to roll out in May of next year using more local renewable energy including mainly biomass energy before developing more local solar and wind farms.

RCEA Executive Director Matthew Marshall earlier this week told the Rio Dell City Council about plans to procure a third of the county's electricity from biomass plants, another third from hydroelectric plants and the last third from other sources. He added that at the beginning of the program, 10 percent to 20 percent of the biomass energy will be from local plants.

Bob Marino, the general manager of the DG Fairhaven Power biomass plant in Samoa, said his and other plants generate power by burning organic material — nothing pressure treated or painted — and converting that heat into energy. The plants burn non-marketable logs, saw mill residuals and plant matter directly from forests.

"Essentially you can burn anything organic, but that doesn't mean I would," he said.

Marino said the ashes left over after burning the biomass at his plant are organic and that he gives them to local dairies and farms.

"My ash products are certified organic," he said.

Marijuana can be grown organically, but there aren't stringent regulations or oversight on black market products to ensure they actually are organic. Agents raiding grow operations often find all sorts of chemicals, both household and banned. Though it's possible to burn cannabis in biomass plants for energy, without knowing that it's actually organic, Marino said he wouldn't.

"I would not jeopardize my ash program by doing that," he said.

Representatives from the biomass plants in Scotia and Blue Lake couldn't be reached for comment by the publishing deadline.

Humboldt County Drug Task Force Lt. Bryan Quenell said he and his team by law must make sure the plants are destroyed.

"Either we shred or chip it on scene with a wood chipper or bury it at various locations around the county," he said.

Quenell said it would be tough to organize with biomass facilities because his team may not get back from a raid until a biomass plant closes.

"I don't think that's a feasible way of doing it," Quenell said.

If that happens, his team would be stuck with chipping or burying the plants after a long day of raids.

"We sign a court order under penalty of perjury that the plants were destroyed in our presence," Quenell added.

RCEA senior energy specialist Richard Engel said the energy authority doesn't have any stance on marijuana and that when he was reached on Thursday, that was the first time he heard of turning seized cannabis into energy. He said he had two concerns; moisture content and quantity.

"You want stuff that's very low moisture content," he said about what goes into biomass incinerators. "Their ideal is called bone dry."

Marijuana plants ripped from the soil earlier that day don't qualify as bone dry. Engel said the amount of marijuana seized in a year, though big in terms of consuming marijuana, is insignificant compared to how much other plant matter is burned.

"It's such a tiny drop in the bucket compared to what we're talking about," he said.

But all that could change in the post-marijuana prohibition era if recreational pot is legalized in California in November.

"Who knows," Engel said.

*Hunter Cresswell can be reached at 707-441-0506.*

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URL: <http://www.times-standard.com/general-news/20161020/why-biomass-plants-cant-turn-pot-into-energy>

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*From the new book Talk Matters  
by Mary Gelinias*

Jester, Marsi, Carolyn Lukensmeyer,  
Mark, Peggy Mark, Robert Maurer, Julie O'Mara, Peter Pennington,  
Pete N. Peterson, Brenda Rasch, Kristy Regan, Jen Rice, Roxanne  
Suprina, Simeon Tauber, and Marion Vittitow.

For courage and foresight, I applaud the Board of Directors and staff of the Humboldt Bay Municipal Water District as well as members of the Advisory Group of its Water Resource Planning Process. They demonstrated what is possible and set the gold standard for public process in northern California. I'm grateful to directors Barbara Hecathorn, Aldaron Laird, J. Bruce Rupp, Kaitlin Sopoci-Belknap, and Sheri Woo as well as staff member Sherrie Sobol and former general manager Carol Rische. In addition to Rupp and Sopoci-Belknap, Advisory Group members included



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## 'Changing tides': Humboldt Bay Symposium discusses state of the ocean, coastal progress

### Humboldt Bay Symposium discusses the state of ocean, coastal progress on the North Coast

By Natalya Estrada, [nestrada@times-standard.com](mailto:nestrada@times-standard.com), [@natedoge4412](https://twitter.com/natedoge4412) on Twitter

Saturday, October 22, 2016

The Humboldt Bay Symposium at the Wharfinger Building in Eureka presented two days of updates, development and changes that have happened within the region over the last two years.

"Two days was not enough, but I feel like we put together the best group of experts that we possibly could," said Joe Tyburczy of California Sea Grant, a main sponsor of the symposium. "We put this together in six months and this event happens every two years so we have a lot of thought that goes into proving interesting and thought provoking topics when it comes to research and restoration."

Tyburczy said although there were four different sessions and nearly 30 presenters there was still so much to discuss about the constantly changing state of the ocean and coastal lands.

The topics ranged from the California drought and El Niño to Federal Emergency Management Agency (FEMA) maps and climate change within the North Coast.

A prevalent topic was sea level rise within Humboldt Bay.

Speaker Aldaron Laird talked about the vulnerability assessment as well as adaptive measures that would need to take place over the course of 50 to 100 years to guarantee safety in the coastal residential zones.

"The city of Eureka doesn't have the authority to enforce flood insurance, that's allocated for federal powers," Laird said. "How do we factor in the next 85 or so years when it comes to convincing developers to build according to future predictions of the bay? There's no precedence for that right now so we'll just have to encourage proactivity."

Hank Seeman with Humboldt County Public Works said the recently updated maps from FEMA could potentially help create a better system for predicting and preventing disasters related to flood risks which were more frequently during extreme weather.

"The communities in the most danger are Field's Landing, King Salmon, Samoa, Fairhaven and South G St. in Arcata," Seeman said. "FEMA maps provide accurate information on flood danger and intensity by presenting several risk factors like strong storms, erosion, water filled with debris and environmental problems."

Seeman said FEMA's 2016 update was monitored and certified by engineers and was now GIS based and could be accessed online.

Jennifer Kalt of the Humboldt Baykeeper presented observations of the local coast and beaches and their condition when it comes to bacteria levels.

"We've done several samplings of our beaches within the last few years and beaches like Calm Beach and Moonstone are a serious problem," Kalt said. "While Moonstone received an A this summer, it doesn't account for the next few months where water quality and cleanliness are not tested year round."



Kalt also mentioned that six creeks in Humboldt County were listed for fecal bacteria, but they have not been able to test whether or not animals or humans contributed to the rise in bacteria levels.

“We all know it’s a problem, but nobody knows what the source of it is,” Kalt said. According to the county’s water quality test results, both Clam Beaches and Moonstone Beach presented more than 300 instances of e. coli, and Mad River Beach and Luffenholtz Beach at lower but still significant levels.

Humboldt State University marine ecologist Brian Tissot highlighted the effects of warmer waters on local species through his research with the Sea Star Wasting Disease which depleted a huge chunk of sea stars on the North Coast in 2013.

“It’s a long term investigation and some sea star populations haven’t fully recovered from the disease,” Tissot said. “We tested nine types of seas stars and 10 to 25 percent of them showed symptoms of the disease.”

Tissot said seas stars were a critical part of the ecosystem and helped maintain species diversity by controlling muscle distributions and also by keeping urchin populations in check.

Disease was an outlying effect of the warming waters, but according to NOAA presenter Eric Bjokstedt said CO2 emissions also played a huge role in changing the ecosystem when it came to increasing acidic levels on the coast which caused defects and growth levels to decrease within aquatic organisms.

“Whether or not you choose to believe in climate change is not the issue,” Bjokstedt said. “This is real and is happening now.”

*Natalya Estrada can be reached at 707-441-0510.*

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URL: <http://www.times-standard.com/general-news/20161022/changing-tides-humboldt-bay-symposium-discusses-state-of-the-ocean-coastal-progress>

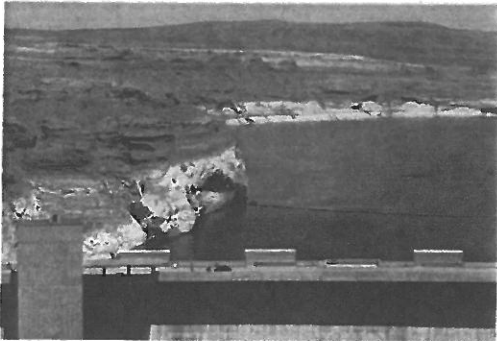
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A synthesis of 100 recent studies finds that water storage reservoirs emit as much greenhouse gases as Canada. Two of the authors explain how this happens.

WRITTEN BY Matt Weiser

PUBLISHED ON Oct. 25, 2016

READ TIME Approx. 6 minutes



Glen Canyon Dam on the Colorado River, with Lake Powell in the background, photographed on June 21, 2015. A new study has found that even North American reservoirs can be significant emitters of greenhouse gases, because biological activity is a more important factor than location. Felicia Fonseca, AP

**HYDROPOWER DAMS ARE** generally thought to be a clean source of electricity. By moving water through turbines, dams can generate large amounts of electricity almost continuously and without causing air pollution.

It's partly for these reasons that more than 3,700 hydroelectric dams are currently proposed or under construction worldwide.

But a growing body of science reveals a dark side. It turns out the reservoirs formed by dams are a significant source of greenhouse gases – particularly methane, about 34 times more potent than carbon dioxide. In the last 10 years, dozens of studies have shed light on this problem.

One is a new study, published October 5 in the journal *Bioscience*. Led by researchers at Washington State University in Vancouver, Washington, it synthesizes the results of 100 other studies to reveal that the world's reservoirs may be producing as much as 1.3 percent of all greenhouse gases caused by humans. That's more than all emissions produced by Canada.

The study considers the emissions from 267 large reservoirs around the world – the only reservoirs for which emissions have been measured. It uses these results to estimate emissions from all reservoirs – more than 1 million worldwide.

Prior research deduced that reservoirs in tropical regions are the biggest emitters. But the new study finds that isn't necessarily true. Other factors are more important, particularly aquatic nutrient activity. This means North American and European reservoirs can also be big emitters.

To understand more, *Water Deeply* recently spoke with lead author Bridget Deemer, a former research associate at Washington State and now a research ecologist with the U.S. Geological Survey in Flagstaff, Ariz.; and her coauthor, John Harrison, associate professor at Washington State's School of the Environment.

**Water Deeply: How significant are these emissions, globally, compared to other sources?**

John Harrison: They compare in magnitude to biomass burning for energy production. The importance of that statement is that human sources of methane to the atmosphere, such as biomass burning to produce energy, are included in the U.N. process for accounting for greenhouse gas emissions by each country. But reservoir emissions currently are not included in that process.

It's substantial. Maybe a better comparison, from a methane perspective, is that emissions from reservoirs are comparable to rice cultivation as a source of methane, and both of those are substantial methane sources to the atmosphere.

**Water Deeply: What did you learn about geographic effects? Does location matter?**

Bridget Deemer: We were pretty surprised about that, because some prior work had suggested low-latitude systems were the biggest emitters, especially systems in the Amazon. But our results didn't find that to be as important as some other factors.

Harrison: It's not that geography isn't important. It's that we didn't see that latitude was necessarily a good predictor of greenhouse gas emissions. We did see a linkage between how biologically productive reservoirs are and how much methane they emit.

**Water Deeply: What do you mean by biologically productive?**

Algae blooms in reservoirs, like this one at Iron Gate Reservoir on California's Klamath River in 2009, indicate heavy nutrient loading and biological activity. A new study found this is a reliable predictor of greenhouse gas emissions from reservoirs, particularly methane. Heavy nutrient inflow is often caused by fertilizer use on upstream farms. (Jeff Barnard, AP)

Harrison: There's a lot of organic matter that is being produced and decomposed in systems that are biologically productive.

You have the organic matter from the vegetation that's decomposed once a reservoir is flooded, and those can provide nutrients to support algal growth. In addition, in low-oxygen conditions, nutrients can get liberated from sediments, which can support further algal growth and decomposition, leading to greenhouse gas production. Globally, fertilizer inputs to watersheds are a major source of nutrients.

We also found that chlorophyll A in a reservoir correlates with emissions. The concentration of chlorophyll A in a reservoir is an indicator of how green a body of water is, and how much algal growth there is. So systems with higher chlorophyll have higher algal concentrations.

**Water Deeply: Does reservoir size or depth matter in terms of emission output?**

Deemer: We didn't find size or depth to be significant in our study. Other studies have found depth to be an important predictor of methane emission from lakes and reservoirs (with shallower sites emitting more methane), but we didn't find that here.

**Water Deeply: How does water level effect emissions?**

Harrison: It's something that we're working to understand better now. By reducing water level, you reduce the pressure on sediments, which keeps bubbles in those sediments. And when you lower water level, bubbles can expand, their buoyancy increases, and they get released directly to the atmosphere.

**Water Deeply: What is the state of the science on this? What don't we know?**

Harrison: Well, every reservoir in this study was emitting methane to the atmosphere. That said, we have a lot of work to do to better understand and predict how these systems emit greenhouse gasses to the atmosphere.

So we're reasonably confident they are a substantial source of methane to the atmosphere. But just how big and what kinds of systems are the biggest emitters are both areas for further investigation.

**Water Deeply: Given these findings, should we be concerned that there are 3,700 new dams at some stage of development globally?**

Harrison: Another insight from this study is that the per-area emission of methane at reservoirs is actually about 25 percent higher than other studies have suggested. That suggests the impact of every additional reservoir is likely to be greater than people had previously thought.

All we're suggesting with this study regarding those future dams is that this is a piece of the puzzle that needs to be considered when people are thinking about whether and where to construct additional reservoirs.

**Water Deeply: So, given your results, can we still consider hydropower to be a "clean and green" source of energy?**

Deemer: I think this study shows that dams as a source of energy aren't without their greenhouse gas costs. Even though it's a renewable source of energy, people should keep the greenhouse gas side of the picture in mind when making planning and policy decisions regarding dams.

**Water Deeply: Are any governments – local or national – currently measuring reservoirs emissions as a routine practice?**

Deemer: As of right now, I don't think so, not that I know of. But I know the U.S. Environmental Protection Agency is exploring the option of including some

greenhouse gas measurements in their national assessment of lakes and reservoirs. But they haven't done that yet.

**Water Deeply: Is there even an established process for measuring these emissions?**

Deemer: That's a great question. These emission measurements are actually quite challenging because of how variable emissions can be, depending on time of year, time of day, and sample location within the reservoir you're looking at. Effective measurement approaches might vary by reservoir operational type as well. There's a lot still to be done to kind of standardize methods that will give us numbers that we're comfortable with in terms of the amount of uncertainty.

**Water Deeply: You state in the study that you believe your emission estimates can be considered a "low end." Why is that?**

Deemer: We feel our estimate is conservative. It's for a number of reasons, one of which is that we're only looking at reservoir surface area, whereas we know there are some emissions associated with effects downstream of the dam, and other alternative pathways, that we just don't have enough data on to include in the synthesis.

**Water Deeply: Is it possible to mitigate these emissions, say, by operating a reservoir differently, changing project design or watershed management?**

Harrison: Just knowing that reservoirs emit greenhouse gases gives us an opportunity to mitigate in other areas to compensate for those emissions, which otherwise wouldn't be counted in national inventories.

Then, beyond that, there is this interesting relationship between biological productivity and methane emissions. So if you can prevent organic matter from getting into reservoirs or being produced in reservoirs in the first place, you might be able to both improve water quality and reduce greenhouse gas emissions.

You can reduce organic matter inputs to reservoirs by managing nutrients better on the landscape, so they don't get into reservoirs. Or by siting reservoirs upstream of potential sources of the nutrients and organic matter that lead to greenhouse gas production. And there may be other things, too, like how you manage water level could influence greenhouse gas emissions to the atmosphere, and we're actively working to better understand those.

Deemer: I think it's a ripe area for future research, because these systems are human managed. So if we can identify some ways to manage at the dam that mitigate emissions, that would be pretty exciting.

Redwood Times (<http://www.redwoodtimes.com>)

## Salmonid Restoration moves to Eureka

**Oct. 31 marks last day in Garberville**

*By Kellie Ann Benz, [kbenz@redwoodtimes.com](mailto:kbenz@redwoodtimes.com), [@TheRedwoodTimes](#) on Twitter*

Monday, October 24, 2016



Garberville-based water non-profit Salmonid Restoration Federation is pulling up stakes and moving to Eureka.

“We’re moving to better serve the needs of our state-wide initiatives,” said Dana Stolzman, executive director of the Salmonid Restoration Federation. “We intend to keep a regular presence in Southern Humboldt through our water rights clinics and we welcome public

feedback.”

Stolzman spoke to The Redwood Times by phone on Friday. Earlier that day, they issued a press release explaining their plans.

The Salmonid Restoration Federation is a statewide organization that was founded in Humboldt County, the epicenter of community-based watershed restoration. SRF was created over 30 years ago to promote restoration and recovery of wild salmon populations through education and advocacy. SRF accomplishes this through the production of the premiere salmon restoration conference in California as well as hosting regional education events, and technical symposia on restoration techniques including fish passage design, bioengineering, off-channel habitat, and other pioneering watershed restoration practices.

Since 2012, SRF has been active locally in water conservation education and flow monitoring in Redwood Creek, a 26-square mile watershed that borders the Mattole River and flows into the South Fork Eel River. They remain actively engaged in a four-year low-flow monitoring study in Redwood Creek and neighboring tributaries in the South Fork Eel River watershed. The study is currently in its final year.

Under the California Water Action Plan, the California Department of Fish and Wildlife has identified five priority watersheds for instream flow projects in California. The South Fork Eel River was identified as a priority watershed because it is key for the recovery of coho salmon and suffers from low summer flows.

Cool water tributaries that flow into the South Fork Eel provide critical refugia for juvenile salmonids and Redwood Creek include several notable tributaries including Dinner Creek, China Creek, Miller Creek, Seely Creek and Upper Redwood Creek. These tributaries historically supported coho salmon, steelhead, and Chinook salmon.

Preliminary results and updates from the ongoing Redwood Creek low flow study are continuously shared through the Redwood Creek Water Conservation Project Facebook page and the Redwood Creek Low-Flow Monitoring web page that provides weekly flow updates, status reports, technical resources, and an interactive graph where citizens, scientists, and landowners can see the weekly flows during the low-flow season.

[www.calsalmon.org/programs/redwood-creek-low-flow-monitoring](http://www.calsalmon.org/programs/redwood-creek-low-flow-monitoring)

The Federation has been doing community outreach and building capacity for water conservation strategies that would improve flows and serve as pilot projects for other rural communities. SRF is also providing technical assistance for landowners who are navigating pathways to environmental compliance on a county and state

level. They offer an online webinar to walk citizens through the Initial Filing for Water Rights and Small Domestic Use applications. Visit the webinar at [www.calsalmon.org/programs/water-rights-education/resources](http://www.calsalmon.org/programs/water-rights-education/resources).

“We came to the conclusion that we could be more effective for the people who need us if we were in a larger center,” added Stolzman. “In reality, we should be in Sacramento, but Humboldt is our home.”

Stolzman explained that the move will not result in any job loss for the local non-profit. In fact, they only just submitted a proposal to the state for a Groundwater Recharge Plan. They hope to hear good news on that proposal in spring of 2017.

Asked if the move has been prompted by Southern Humboldt’s lack of law enforcement, Stolzman said, “we have been impacted by the lack of resources in this area, but that’s not what has motivated our move.”

Stolzman wanted to assure Southern Humboldt residents that they are just as available by phone and online (only their physical address will change), and spoke of the easy access to their new Snug Alley location in Eureka’s Old Town.

As for ongoing programs, the Federation, in collaboration with Trout Unlimited, has developed an online resource for small landowners in Coastal California called “Guidance on Complying with California’s Water Laws”. This new series of web pages provides an overview of state regulatory requirements overseen by the State Water Resources Control Board and the California Department of Fish and Wildlife, as well as information on regional and Humboldt County-specific ordinances. “As water becomes more scarce in California, ensuring compliance with state water laws offers many important benefits for local rural communities and native salmon populations. Go to: [www.calsalmon.org/programs/guidance-complying-californias-water-laws](http://www.calsalmon.org/programs/guidance-complying-californias-water-laws).

“With the passage of the California Water Bond, there is the opportunity to design water conservation projects that would improve water flows in rural watersheds,” Stolzman said in her press release. “Although, SRF is moving our headquarters to Eureka, we are committed to continuing to explore ways to build capacity for community-based water conservation that could improve water quality, fire security, and habitat for threatened salmon.”

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URL: <http://www.redwoodtimes.com/general-news/20161024/salmonid-restoration-moves-to-eureka>

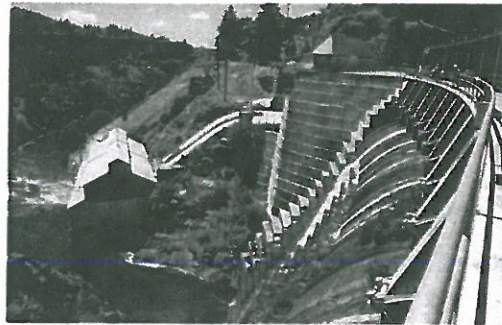
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**Removal of Klamath Dams Would Be Largest River Restoration in U.S. History**

by Molly Peterson, KQED

Wednesday Oct 26th, 2016 11:55 AM

Four hydroelectric dams may soon be demolished along the Klamath, near the California-Oregon border. Hundreds of miles of the Klamath would run free to the Pacific Ocean — opening up the largest river restoration in U.S. history.



Our metal powerboat is puttering near a bend low in the Klamath River. Morning fog pours off the hills against a flat gray sky, but we can see a fight up around a bird's nest.

"The eagles are perched up here in the tree," says Mike Belchik, a fisheries biologist for the Yurok tribe, whose lands extend 44 miles from the Pacific Coast inland. "The osprey is dive-bombing them."

Belchik claps loudly to break up the birds. "They both live around here and they fight all the time," he laughs.

People along the Klamath once fought bitterly over this river, too. But that's beginning to change.

Four hydroelectric dams may soon be demolished along the Klamath, near the California-Oregon border. Hundreds of miles of the Klamath would run free to the Pacific Ocean — opening up the largest river restoration in U.S. history.

What's made this possible is compromise, forged over years of negotiation, among upriver and downriver interests, in California and Oregon, farmers and tribes and fishery advocates.

Two incidents of deep and painful loss, in 2001 and 2002, sparked this new era. First, the federal Bureau of Reclamation cut off water supplies to almost all irrigators on the Klamath Irrigation Project upriver, to protect water flows to endangered fish, including salmon. Angry farmers who were losing their crops converged at the main irrigation canal's controls in Klamath Falls, Oregon, turning the water back on. A crowd of 18,000 cheered them on.

The next year, when irrigators once again were able to take water from the river, Belchik says the resulting low flows were deadly downriver.

"We started getting calls about dead fish," he says, standing along the riverbank. "There's tens of thousands of fish, rotting fish, big 20-pound salmon, four deep on all of the shorelines." He wrinkles his nose. "The smell more than the look. It smells like death."



Tens of thousands of salmon were killed on the Klamath in 2002 when water deliveries to farmers resulted in deadly low flows downriver. (Courtesy Northcoast Environment Center)

Now with broad political support, the power company that owns the dams, PacifiCorp, has applied to the Federal Energy Regulatory Commission to give up its licenses so that four dams, three in California, can be blasted and jackhammered away.



PacifiCorp shareholders will contribute \$200 million toward dam removal. California will contribute up to \$250 million more in Proposition 1 money, to pay for removal and river recovery, under an agreement signed in April at the mouth of the river.

Gov. Jerry Brown said the goal now is sustainability. "Not for the next election cycle but for eons and thousands of years," he said. "That's the significance here. We're starting to get it right after so many years of getting it wrong."

Like a lot of Western rivers, the Klamath has been a workhorse serving the people around it. Inland and upriver, its water goes to irrigators on a federal project, farms and grazing in two states. Over the last century four dams harnessed its energy. The oldest hydroelectric dam is Copco 1, which is 132 feet steep between rock walls trailing bright green moss.



Water spills down the mossy face of the Copco 1 Dam, on the Klamath River outside Hornbrook. *(Molly Peterson/KQED)*

Cheap, reliable hydropower made at Copco helped upriver irrigators pump water to crops and cattle. Standing atop it, PacifiCorp spokesman Bob Gravely says the company has made money for shareholders. "Removing these dams is not something that the company had set out to do," he says now.

But environmental laws put on the books after dams were built changed the equation. Gravely says PacifiCorp would have spent hundreds of millions of dollars updating dams to protect fish and water quality, in compliance with the Clean Water Act and the Endangered Species Act, among others. "This is the least cost outcome for our customers that we have," he says.

It's not often that a private company seeks to get rid of its own dams. The petition to federal regulators is kind of an end run around Congress and its politics.

Five years ago, a broad coalition of river interests agreed on a plan to allocate water resources, protect economic interests, and yes, remove dams. The deal required congressional action. But nothing happened.



Yurok Tribal Vice Chair David Gensaw, Jr. is worried about the future of salmon and trout in tribal waters near where the Klamath meets the sea. *(Molly Peterson/KQED)*

Still, it's not a done deal. FERC will receive public comment on the decision, and some of it will come from fiercely independent rural Siskiyou County, where 80 percent of voters oppose dam removal, period.

Siskiyou County Supervisor Grace Bennett says she's suspicious of the science underpinning dam removal, and the financial risks of such a major change.

"We want answers," she says. "And we want to be not held responsible when this — and I'm going to say this 'grand experiment,' which we feel we're in the middle of — doesn't turn out the way we want. And they leave us doing lots of damage to our county."

Even if the dams are removed, two major questions remain for the Klamath Basin: How to share water and how to help fish recover. Dozens of local stakeholders are starting to hash out those questions, including Oregon rancher Becky Hyde. Congressional opposition or inaction could still get in the way of compromise. But Hyde says she hopes local interests triumph.



Scott Seus (L) and Gary Derry say they're worried about their farming future in the absence of an agreement to share water along the Klamath River. Irrigators like them have rights, but so do environmental interests like fish and wildlife refuges, and tribal interests downriver. (*Molly Peterson/KQED*)

"I don't think a healthy Klamath is solely dependent on whether or not the U.S. Congress decides to pay attention," Hyde says. "We decide. We choose while we wait for them to wake up. We choose how to treat each other while we wait for them to start making wise choices."

In this basin, those choices are personal, says Oregon alfalfa farmer Gary Derry. After the water shut off in 2001, his son moved away. Now his younger daughter is weighing the same choice.

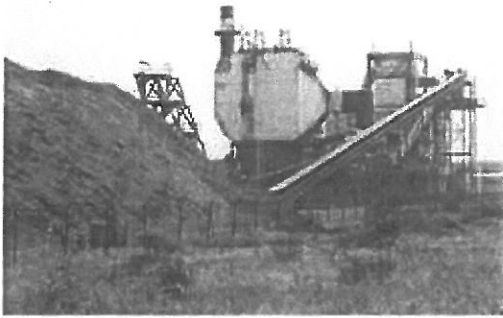
"I don't want to see my kids leave. I don't want to see anybody down the river, their kids leave," Derry says. He points out his daughter is graduating with a soil science degree. "I want to get back to where we have a river community, top to bottom, that can survive. That's what I want."

If regulators approve dam decommissioning, hundreds of miles of river would open up for fish and people. Copco 1 and the other three dams would go silent in four years.

## Local energy choice program before California Public Utilities Commission

*By The Times-Standard*

Thursday, November 3, 2016



A program that would give some Humboldt County communities a choice on their energy sources was submitted to the California Public Utilities Commission for certification Thursday, according to the Redwood Coast Energy Authority (RCEA).

The program, known formally as community choice aggregation, is a state-allowed program that lets local governments choose their energy sources and set competitive rates with local utilities, such as Pacific Gas & Electric Co. The RCEA, an intergovernmental joint-powers agency, will be administering the program with the aid of a third-party company, The Energy Authority, which will be operating the program.

“The program will be implemented with the goals of maximizing the use of local renewable energy resources to the greatest extent that we can, while also providing rate savings to customers,” RCEA Executive Director Matthew Marshall said in a Thursday statement.

“Having local control of where our electricity comes from can provide both the environmental benefits of meeting more of our energy needs with local renewable resources as well as significant economic benefits from being able to keep a significant share of the dollars we spend on electricity here in Humboldt County.”

Initially spearheaded by the county Board of Supervisors more than a year ago, the program will be available to Eureka, Arcata, Fortuna, Blue Lake, Trinidad and unincorporated areas of the county as soon as May 2017, according to the RCEA. Residents in these communities will be able to opt out of the program and continue receiving service from their local utility provider.

PG&E would still be responsible for managing billing, maintaining the power infrastructure such as power lines, and responding to outages.

“Customers will continue to just get one bill in the mail from PG&E, with the current ‘generation’ fees being replaced by the community energy program charges,” the RCEA stated in its Thursday news release.

The RCEA has previously stated it intends to utilize local biomass power and renewable energy sources if the program is certified.

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URL: <http://www.times-standard.com/general-news/20161103/local-energy-choice-program-before-california-public-utilities-commission>

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# Correspondence



**Sherrie Sobol**

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**From:** Ruth Lake <ruthlakecsd@yahoo.com>  
**Sent:** Monday, October 24, 2016 9:04 AM  
**To:** Sherrie Sobol  
**Subject:** 2016 Dock Compliance  
**Attachments:** Dock Compliance 2016.xlsx

Attached is a summary of this years dock inspection.  
All docks are in compliance with appropriate tie downs and secured for winter.

---

Steve Canale  
Ruth Lake Community Services District  
12200 Mad River Road  
Mad River, CA 95552  
Phone - 707.574.6332  
FAX - 707.574.6080



H.B.M.W.D. OCT 21 2016

EDMUND G. BROWN JR.  
GOVERNORMATTHEW RODRIGUEZ  
SECRETARY FOR  
ENVIRONMENTAL PROTECTION**State Water Resources Control Board**

Division of Drinking Water

October 19, 2016

Humboldt Bay Municipal Water District  
P.O. Box 95  
Eureka, CA 95502

Attention: Paul Helliker, General Manager

Subject: Inspection of Humboldt Bay Municipal Water District

On August 10, 2016, Mr. Craig Bunas and Mr. Scott Gilbreath of my staff conducted an inspection of the Humboldt Bay Municipal Water District (HBMWD) water treatment facility. Enclosed for your review is the inspection report, which includes the *Water System Record*, and updated chemical monitoring schedules for your source and distribution system.

During this inspection and file review, no system deficiencies, issues, or concerns were noted. The HBMWD water system appears well operated and maintained. Please note that raw water monitoring for Nitrate and Nitrite and finished water monitoring for Disinfection Byproducts (DBPs) are next due in 2017.

If you have any questions or concerns regarding this letter or the enclosures, please contact Mr. Scott Gilbreath at (530) 224-4876 or myself at (530) 224-4875.

A handwritten signature in black ink that reads "Barry Sutter".

Barry S. Sutter, P. E.

Klamath District Engineer

DIVISION OF DRINKING WATER

FIELD OPERATIONS BRANCH

SMG:lar

enclosures

System No. #1210013

FELICIA MARCUS, CHAIR | THOMAS HOWARD, EXECUTIVE DIRECTOR

# Continuing Business





**HUMBOLDT BAY MUNICIPAL WATER DISTRICT**

To: Board of Directors

From: Paul Helliker

Date: November 16, 2016

Subject: Water Conservation Regulations

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**Conservation Reporting**

Attached are some articles about the September data that was released by the State Water Board at their meeting on November 1. Also attached are some articles about actions taken by agencies to promote demand reductions. Water agencies reported a savings of 18.3% in September, compared to September, 2013. As the articles show, this was a lower conservation level than agencies achieved in September, 2015, but it was higher than the 17.5% level in August. More than 80% of water agencies have demonstrated that they have adequate water to meet demand for the next three years, pursuant to the "stress test," and rainfall in Northern California was 116% of normal in 2015-16, so it is not surprising that drought response has dropped.

Also attached is the first page of the summary report, which shows the 10 agencies that did not meet their conservation targets in September. HBMWD and Arcata (and Fortuna) are on the list just inside the list of agencies in compliance.

**Executive Order B-37-16 Implementation****Urban Advisory Group**

The Urban Advisory Group met on October 20 and the agenda is attached. The discussion focused on updates to water shortage contingency plans, more stringent long-term use reductions and water leak programs. Each topic has been the subject of other workgroup meetings, as described below. The next meeting of the Urban Advisory Group is on November 18. The draft report from DWR and SWRCB staff is projected to be released on November 4. The deadline for a final report to the Governor (which will likely include the elements of proposed legislation) is January 10, 2017.

**Water Shortage Contingency Plans**

State staff have continued to propose that, in addition to the annual supply/demand assessment (to which water agencies have agreed), a five-year drought analysis be conducted. Water agencies continued to note that such information is not useful for decisionmaking or planning purposes, and creates potential confusion in communications and legal liabilities. The rest of the proposed elements of the water shortage contingency plans are not controversial.

**Water Use Efficiency**

State staff continue to insist that the Executive Order only allows the use of method 2 in SB x7-7 (consisting of indoor, outdoor, commercial, industrial and institutional standards.) Water agencies continued to object to this limitation, due to the time and expense associated with developing and maintaining parcel-specific information. This issue is not likely to be resolved at the staff level.

**Leak Reduction**

The leak reduction program defined in SB 555 is included in the proposal. This program will establish stringent audit requirements, and the State Water Board will adopt leak reduction targets in 2019.

## October rainfall second highest on record in Humboldt County

**2nd highest rainfall recorded in first month of water year; conservation slips statewide**

*By Will Houston, Eureka Times-Standard*

Tuesday, November 1, 2016



If October in Humboldt County seemed to be more wet than normal, that's because it hadn't rained that hard in nearly 70 years.

National Weather Service Eureka hydrologist Reginald Kennedy said the station on Woodley Island recorded nearly 11 inches of rain in October, which came short of the October record of 13 inches that was set in 1950.

"We had one of our wetter Octobers," Kennedy said.

Last month's record rainfall total was well-above the 30-year average for October of 2.24 inches and as much as 218 times higher than October rainfall in recent drought years.

Humboldt Bay Municipal Water District General Manager Paul Helliker said that the increased rainfall is forecast to continue next month, with the National Oceanic and Atmospheric Administration predicting 40 percent above normal rainfall for November on the North Coast and 33 percent above normal for the entire state.

Humboldt County's main reservoir at Ruth Lake is currently at 89 percent and rising, Helliker said.

"Our prediction is that Ruth Lake should fill next week," Helliker said.

But the State Water Resources Control Board said the October rains, while encouraging, will not be enough to make up for the years of drought that still are severely impacting counties in the Central Valley and Southern California.

"The early rains are very welcome, and we'll take every drop we can safely handle," State Water Board Chairwoman Felicia Marcus said in a Tuesday statement. "But just because we're ahead in the early innings doesn't mean that we've won the game. Considering that the majority of precipitation typically occurs between January and April in any given water year, we have a long way to go before we know whether we'll make another significant dent in the drought."

Last winter, Humboldt County experienced above-average rainfall between December and March when about 39 of the 48 inches recorded in last water year fell. Kennedy said a ridge of high pressure usually deflects storms from the West Coast until December, but he said that ridge didn't show up this year and allowed the storms to arrive early.

### Water conservation

Water conservation data shows that Californians are not conserving as much as they were a year ago.

The state conserved just over 18 percent more water this September than it did in September 2013. In comparison, California residents conserved 26 percent more water in September 2015 than September 2013, according to the state.

More than 2 million acre-feet of water has been conserved statewide since June 2015 when the state implemented its first-ever mandatory water conservation program. In its Tuesday news release, the State Water Board commended residents in Eureka, Arcata and the McKinleyville Community Services District for their low daily water use, which it said “illustrates a long-term commitment to efficient water use.”

The state relaxed its drought regulations in May and is allowing water providers to set their own conservation targets. Those water providers that could show proof they had enough water for another three years of drought would not be held to any target.

All six of the large water suppliers in the county — Eureka, Arcata, Fortuna, McKinleyville Community Services District, Humboldt Community Services District and Humboldt Bay Municipal Water District — no longer have water conservation targets through January 2017.

Helliker said that Ruth Lake currently has 139 percent more water than is currently demanded by their customers.

However, residents will still be held to other rules such as not allowing runoff when watering a lawn, not watering for two days after significant rainfall, and using a spray nozzle on hoses.

Following Gov. Jerry Brown’s executive order in May, the State Water Board is working on creating permanent water savings rules and targets for communities. The new rules are set to be released in January.

*Will Houston can be reached at 707-441-0504.*

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URL: <http://www.times-standard.com/general-news/20161101/october-rainfall-second-highest-on-record-in-humboldt-county>

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## LOS ANGELES TIMES

November 1, 2016

## Water conservation improved in September but is still worse than in 2015

**Matt Stevens**

Californians halted a three-month slide in water conservation in September, saving enough to hearten state regulators who previously had expressed alarm about possible drought fatigue.

Residents and businesses cut their water consumption by 18.3% in September compared with the same month in 2013. The savings represented a slight uptick from the 17.5% reduction urban Californians managed in August.

“I am glad to see the slide stop, and even reverse a bit overall, especially as we move into traditionally lower water-use months when we would expect [savings] percentages to drop significantly,” State Water Resources Control Board Chairwoman Felicia Marcus said in a statement.

“Overall, we’re happy to see millions of Californians and many water agencies continue significant conservation,” she added. “Conversely, we’re concerned to see some agencies return to using hundreds of gallons per person per day while saving little. ... We need to keep conserving.”

conservation backsliding has been a point of concern among officials in recent months.



The drought eased up, and these Californians turned on the spigot

A [statewide analysis](#) by The Times found that water conservation slid about 9 percentage points in June, July and August of this year compared with the same period in 2015, at the height of [the drought](#).

About 93% of local suppliers saved less this summer than they did during the summer of 2015, according to the analysis.

In its statement Tuesday, the board praised many water suppliers for maintaining high levels of conservation — including some that saved more this September than in September 2015.

However, regulators also singled out a few suppliers that they said were not “sustaining significant conservation.” They listed the San Juan Water District, the supplier The Times focused on in its report, as one they were “particularly concerned about.”

At their Tuesday meeting, regulators and representatives of water agencies said it was important to look at cumulative savings numbers rather than concentrating solely on monthly savings percentages.

During the 16-month period that ended in September, Californians used 23% less water compared with 2013 benchmarks, water board staff members said.

Some agency representatives took umbrage at the notion that they are abandoning conservation.

“It’s a good news story,” said Dave Bolland of the Assn. of California Water Agencies.

He added that some media organizations are attempting to “make a story about all of California out of a few specific agency situations.”

Inland Northern California was home to some of the state’s biggest backsliders during June, July and August, according to The Times’ analysis.

On Tuesday, Amy Talbot, a representative of the Regional Water Authority for the greater Sacramento area, framed the upticks in usage as a natural consequence of moving from mandatory conservation to voluntary conservation. “We see it not as backsliding, as some articles have mentioned,” she said.

Environmental advocates, however, saw September’s 18.3% savings as a significant slip from the 26.2% savings achieved in September 2015 under mandatory conservation.

The board lifted mandatory conservation for the vast majority of California suppliers earlier this year.

“The state board has failed the people of California by letting water agencies off the hook for mandatory conservation,” said Tracy Quinn, senior water policy analyst at the Natural Resources Defense Council. “That sent a very confusing message to residents, who are wrongly being told it’s OK to water their lawns or roll back the conservation efforts they’d implemented over the past few years.”

In her statement, Quinn called for a return to mandatory conservation targets and “a suite of strong permanent conservation measures.”

The executive order that governs the current drought rules will expire in February. So water board members will need to decide whether the emergency regulations should be extended; if so, officials may choose to modify them further.

A series of storms in Northern California has gotten the state off to a good start, officials said. As of Tuesday, an eight-station index that measures rain in the northern Sierra Nevada had recorded 12.6 inches of precipitation — almost 400% of the average for Nov. 1.

Regulators wondered aloud how the rain would affect conservation during October. More rain, they said, should lead to less outdoor watering — and perhaps greater savings.

“We’re watching the weather like everyone else is,” said Max Gomberg, the water board’s climate and conservation manager. “This is an encouraging start to the water year, but there’s a long way to go.”



November 3, 2016

Exploiting our desire to conform – through reports comparing our water usage to the norm – is one tactic increasingly used by water agencies and utility companies to push the conservation message.

WRITTEN BY Tara Lohan

PUBLISHED ON NOV. 3, 2016

READ TIME Approx. 5 minutes



A water meter being installed at the site of a new home under construction in Fresno, California. Scott Smith, AP

**FOR YEARS COMPANIES** have targeted consumers with advertising that leverages social pressure – like saying seven out of 10 people prefer a certain brand of toothpaste or laundry detergent. More recently, that kind of thinking has been used not just to sell products, but also to change behavior.

“Behavioral economists assert that in the absence of price signals, policymakers can change people’s behaviors by harnessing their natural inclination to conform to social norms,” wrote Nola Hastings and Galib Rustamov in a 2015 report on customer water use messaging for the California Urban Water Conservation Council. “For example, customers make decisions based on social cues, self-image, local values and identities.”

Basically, most of us just want to fit in with our social groups. And if given a little direction on how to do so, we’ll respond.

Opower, a customer engagement platform for utilities, took this philosophy and tested it in the electric utility sector. In 2008, it began sending Home Energy Reports to its utility partners’ customers, which showed people their energy consumption and how it compared to other similar households. The company now works with over 100 global utilities and its use of “social norms messaging” has begun to gain traction with water utilities.

The first substantial research that emerged from the water world on this front resulted from a June 2012 to June 2013 pilot project between 10,000 customers of East Bay Municipal Utilities District in the San Francisco Bay Area and WaterSmart Software. Much like Opower’s model, WaterSmart Software sends Home Water Reports, which tell customers how much water they’re using, how it compares to their own past use, as well as how much water similar households and similar efficient households are using. The reports also provide information on how to increase water efficiency, available rebates or other messaging from utilities.

The project compared two groups to controls – the first being a random sample of customers and the other (referred to as the Castro Valley group) were those thought to be “good candidates” for the messaging (mostly higher income and higher water use households).

Researchers found that the random group on average increased conservation by 4.6 percent and the Castro Valley group by 6.6 percent compared to the control groups. The effects went beyond just conservation, though. They also found that households from both groups were 6.7 times more likely to participate in a water audit program and 1.7 times more likely to participate in a rebate program than those not receiving Home Water Reports.



WaterSmart Program  
123 Main Street  
Anytown, USA

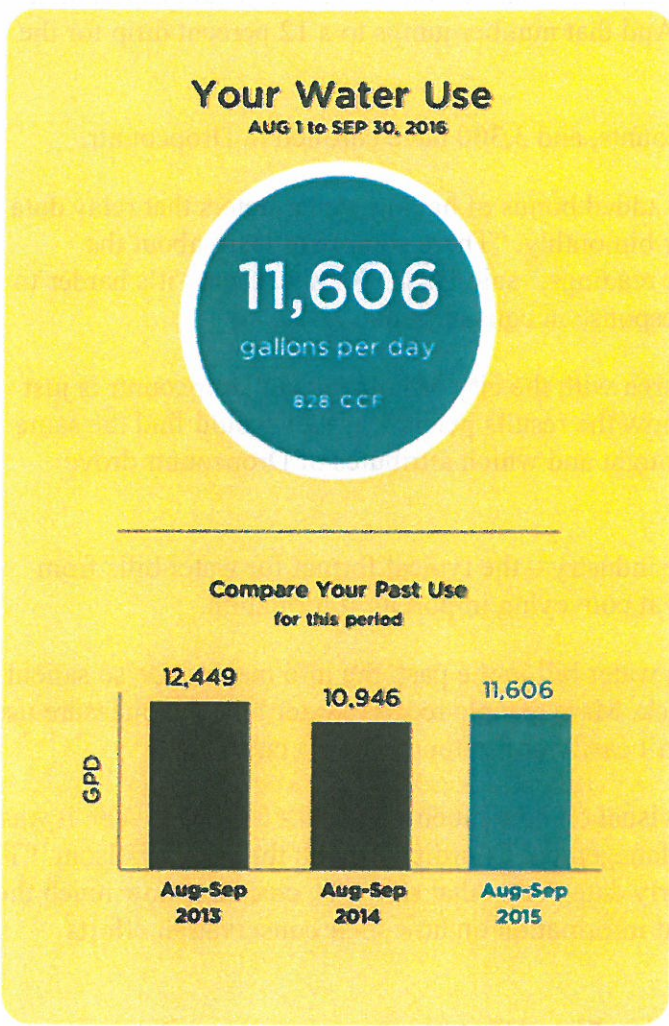
415.555.5555 info@citywater.com

### WATER REPORT FOR CAFE PARISIAN 123 UNIVERSITY AVE

THIS IS AN INFORMATIONAL REPORT AND NOT A BILL.  
ACCOUNT NUMBER: 123873124-01

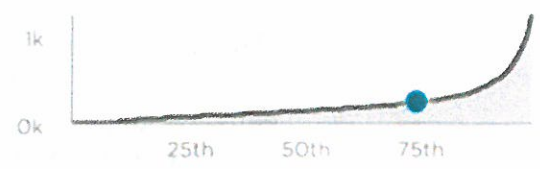
GO PAPERLESS. SEE ALL INFO & PRODUCTS AT:  
[demo.watersmart.com](http://demo.watersmart.com)

Cafe Parisian  
123 University Ave  
Anytown, USA



**Upgrades really work!**  
“I was skeptical about the new dishwasher, but I saw savings on my very next water bill. Even though we did 10% more business that month!”  
-Lisa P., restaurant owner

**Relative use for September**  
Compared to other local restaurants, you were in the **75th percentile**.



Part of what a WaterSmart Software Home Water Report could include for customers. (WaterSmart Software)

Another study is under way by Steven Buck, assistant professor at University of Kentucky. Buck is examining how customers may be changing water use behavior in the city of Folsom, California, near Sacramento.

Folsom's water agency signed up to work with Dropcountr, mobile and online application that tracks and shares water-use information. Customers in Folsom can voluntarily sign up for Dropcountr and create a customized household water budget. They'll also receive information about water usage, how that usage compares to neighbors, specific tips for reducing water use and notifications about abnormal water usage.

"We are comparing households that enrolled versus households that didn't enroll in the program and looking at what happened to consumption two months, three months, six months and 18 months after enrollment," said Buck. Because the people who enroll may be more likely to conserve already, he said they are not simply comparing the difference between the two groups but, "we are taking into account the fact that there were baseline differences between the group that enrolled and the group that didn't."

Buck's research has yet to be peer-reviewed, but his preliminary findings show that on average, those who enrolled in Dropcountr in Folsom had a 6 percent drop in their consumption since enrollment. And that number jumps to a 12 percent drop for the very highest water users.

The city has roughly 24,000 accounts, and 3,300 have enrolled in Dropcountr.

Folsom customers also have the added bonus of having water meters that relay data every day, instead of monthly or bimonthly. "There is more to learn about the usefulness of having daily water readings," said Buck. Without them "it's harder to detect a leak and hard to see a response in consumption."

And Buck stressed that his research with the city of Folsom and Dropcountr is just beginning. He wants to look at how the results persists, if they would find the same results if it were not during a drought and which attributes of Dropcountr drove the effects.

One thing is pretty certain in the industry – the typical format for water bills from many agencies aren't very good at conveying important information.

"Even though you've received a water bill in the past, the info may not be so salient or transparent to the user," said Buck. Many people receive water bills that measure use in units or cubic feet, which aren't easily understood by most customers.

"Dropcountr provides a simple visual on how much water was used and when it was used," said Don Smith, Water Management Coordinator with the city of Folsom. "The daily use graph provides 24 hourly data points that show the customer how much they use. Dropcountr provides current information on how their conservation efforts are working."

And, many people simply disengage from their bills altogether, said Jeff Lipton, director of marketing at WaterSmart Software. That's why WaterSmart sends water reports separately from bills because they are more likely to be read.

Increasing conservation and efficiency, however, isn't the only helpful result from companies that increase customer engagement with their water utilities.

"The reduction numbers of 6 percent to 12 percent are great, but are only part of the story," said Smith. "Dropcountr provides a platform for customer engagement. We can communicate through email and mobile devices with customers who use Dropcountr and we can monitor usage of all our customers."

Utilities can use these tools to communicate important information with customers – something that is especially useful during droughts, but not just limited to times of water shortage.

Portland, Oregon, for example, is using WaterSmart's Home Water Reports to try and reach low-income customers to help promote customer assistance programs and increase efficiency to reduce bills, said Lipton.

"What we see the need for in the water space is better customer education and engagement around a variety of topics and the ability to build political support for infrastructure investments so we don't have Flint, Michigan, happening all over the country," said Lipton. "In some cases the need to improve efficiency is important but there are lots of other things utilities need to address with customers."

Utilities may want to communicate about how they are spending money on new infrastructure or the costs of maintaining quality service that may help customers better understand how their rates are set and the money spent.

"Social norms messaging can be used to drive behavior in different directions," said Lipton. "It's really important the way we're able to leverage behavioral science insight to achieve measurable outcomes that utilities care about it."

### ***About the Author***

Tara Lohan

Tara Lohan is managing editor of Water Deeply. She tweets from [@taralohan](https://twitter.com/taralohan) and lives in San Francisco. You can reach her at [tara@newsdeeply.org](mailto:tara@newsdeeply.org)

## THE SEATTLE TIMES

### In California, a \$350 million social experiment over lawns

Originally published October 30, 2016 at 11:19 pm Updated October 31, 2016 at 1:13 pm



*In this photo taken Tuesday, Aug. 23, 2016, city water resources specialist Randy Barron walks through a low water use garden in the backyard of a Lomita Heights home in Santa Rosa, Calif. California water agencies that... (AP Photo/Eric Risberg)*

By

[ELLEN KNICKMEYER](#)

*The Associated Press*

SANTA ROSA, Calif. (AP) — California water agencies that spent more than \$350 million in the last two years of drought to pay property owners to rip out water-slurping lawns are now trying to answer whether the nation's biggest lawn removal experiment was all worth the cost.

Around the state, water experts and water-district employees are employing satellite images, infrared aerial photos, neighborhood drive-bys and complex algorithms to gauge just how much grassy turf was removed. They also want to know whether the fortune in rebates helped turn California tastes lastingly away from emerald-green turf.

“How well did it work? That’s really key when we’re working on historic investments,” said Patrick Atwater, a project manager at the California Data Collaborative, a coalition of utilities and other water-related entities grappling with the question.

Removing lawns may sound like a small, wonky step, compared to building dams. But the green turf in American yards actually stands as a worthy target for water

savings, a public enemy in the eyes of many during a drought such as California's five-year-old one.

The U.S. Environmental Protection Agency estimates one-third of all water used by American households goes to watering lawns and gardens. That's 9 billion gallons of water each day — enough to supply drinking water daily for nine cities the size of New York.

In 2015, after a devastatingly dry winter, Gov. Jerry Brown ordered 25-percent water conservation by cities and towns. He mandated \$25 million in state-government spending to help cover the costs of low-income California families in particular removing their grass, and putting less-thirsty, climate-suitable plants in their yards instead.

Brown set a goal of eliminating 50 million square feet of lawn. That breaks down to less than two square miles of greenery, out of what the Public Policy Institute of California think-tank has estimated at around 1,000 square miles of watered yards statewide.

But state spending proved a drop in the bucket compared to the money local water districts put into lawn rebates.

Metropolitan Water District of Southern California, a giant water wholesaler providing water to Los Angeles and more than two dozen other cities, counties and water districts, poured just over \$300 million into lawn rebates from 2014 on, removing five square miles of lawn.

MWD doubled its rebate offer to \$2 for each square foot of lawn removed, and the lawn rebates quickly became the district's most popular program ever. Workers processed as much as \$10 million in rebate applications a week at peak. In July 2015 alone, Southern Californians applied for rebates to remove the equivalent of 1,665 front lawns.

Santa Clara Valley Water District, serving Silicon Valley, provided more than \$30 million in rebates. Dozens of other water districts put a few hundred thousand dollars to several million dollars into dead-lawn bounties. Rebates ranged from 50 cents a square foot of lawn to \$4 and up.

Water districts revised rebate rules and amounts on the fly, after controversies erupted over golf courses and other properties that got millions of dollars each in rebates. Water boards imposed caps on rebates. Some districts dictated that homeowners put in California-suitable plants. Other water agencies faced criticism for allowing artificial turf, and swathes of gravel.

Now some water-district managers are nervous over political fallout if the benefits don't measure up to the rebate costs, said Chelsea Minton of OmniEarth, a Virginia-based analytics firm that is using before-and-after satellite images to help tally the effectiveness of the lawn-removal program.

Privately, some worried water officials were "saying, 'Let's wait a year or two'" to study it, Minton said

Figuring out whether California's experiment made sense economically is more involved than just totaling how much turf residents have ripped out.

Two key questions are whether households leave the lawns off for a generation or two, and whether each rebate helps turn Californian tastes away from lawns, independent of future rebates.

At Southern California's Claremont Graduate University, assistant professor Andrew Marx is drawing on infrared imagery from airplanes, normally used by farmers, to help figure out whether the rebates are changing Californians' tastes.

The state will go deeper still into the number-crunching, tallying not just water savings but spin-off savings. They range from lower energy costs for piping less water to households to reduced climate-changing pollution from lawn mowers, said Ken Frame, a project manager at California's Department of Water Resources.

In Southern California's Irvine Ranch Water District, which spent \$638,403 on lawn rebates since 2014, workers sent surveys and drove block to block to nail down just how many homeowners joined the lawn-less trend.

Irvine's pilot study found that for every three homeowners who took the rebate, at least four others converted their lawns to less water-hungry plants. Water experts say other factors besides the rebates played a part, including news reports about turf removal programs and the governor's drought-messaging.

Rebates aren't about trying "to buy up all the turf in California — that wouldn't be cost-effective," said Ellen Hanak, director of the water-policy center at the Public Policy Institute of California.

Instead, the rebates have built awareness that water-thrifty landscapes also look good, Hanak said.

In Santa Rosa, a city of about 170,000 in Northern California wine country, homeowner Trudi Schindler took the rebate to replace deep-green grass with flagstone pavers and a silvery-green groundcover with yellow flowers. Schindler wouldn't go back to grass.

"It looks beautiful and sophisticated. And just more lovely than a lawn," she said.

***ELLEN KNICKMEYER***

Data pulled October 19, 2016

**September 2016 Supplier Conservation Compliance (by missed standard %)**  
 395 suppliers reporting; non-filers on page 15

Supplier Name	Hydrologic Region	State-mandated Conservation Standard		Did Supplier Self-certify?	Applicable Cumulative Savings Achieved by Supplier* (as compared to 2013)	Missed Conservation Standard By ** Order Status	Monthly Savings (as compared to 2013)		Estimated Sep 2016 Monthly R-GPCD	Total Population Served
		Previous (3/1/2016)	Current (Effective 6/1/2016)				Sep 2015	Sep 2016		
California City City of	South Lahontan	28%	28%	No	11.1%	16.9% C	-37.2%	-28.5%	134.2	14,120
Livingston City of	San Joaquin River	29%	29%	No	13.7%	15.3% A	14.3%	6.8%	144.2	13,849
Yucaipa Valley Water District	South Coast	34%	20%	Yes	8.4%	11.6%	23.3%	12.9%	226.3	44,897
Sanger City of	Tulare Lake	26%	26%	No	17.8%	8.2%	21.6%	23.6%	130.5	25,664
Adelanto City of	South Lahontan	16%	16%	No	8.9%	7.1% C	18.2%	2.6%	64.9	29,334
Red Bluff City of	Sacramento River	33%	33%	No	26.6%	6.4%	29.1%	10.3%	156.8	14,076
Bellflower-Somerset Mutual Water Company	South Coast	20%	20%	Yes	16.5%	3.5%	20.7%	17.0%	84.7	46,300
Bakman Water Company	Tulare Lake	34%	34%	No	30.9%	3.1%	25.8%	32.6%	169.8	16,756
Fillmore City of	South Coast	26%	26%	No	22.9%	3.1%	23.9%	15.2%	132.5	15,222
San Lorenzo Valley Water District	Central Coast	12%	18%	Yes	17.6%	0.4%	29.0%	24.9%	99.5	19,000
Los Banos, City of	San Joaquin River	24%	24%	No	24.0%	0.0%	24.2%	19.2%	142.9	37,168
Humboldt Bay Municipal Water District	North Coast	4%	0%	Yes	0.1%	-0.1% A	-2.7%	5.9%	107.0	602
Atwater City of	San Joaquin River	33%	33%	No	33.1%	-0.1%	32.5%	26.3%	204.5	29,500
Colton, City of	South Coast	18%	11%	Yes	11.2%	-0.2%	22.0%	16.1%	112.1	47,429
Tehachapi, City of	Tulare Lake	25%	25%	No	25.9%	-0.9%	26.3%	19.7%	168.4	8,923
Arcata City of	North Coast	4%	0%	Yes	1.1%	-1.1%	9.2%	6.5%	60.0	18,392
Pico Rivera City of	South Coast	16%	16%	No	17.2%	-1.2%	21.6%	17.4%	82.9	39,002
Brea City of	South Coast	24%	15%	Yes	16.6%	-1.6%	32.6%	14.7%	109.6	43,328
Glendora City of	South Coast	34%	20%	Yes	21.9%	-1.9%	36.4%	22.7%	157.5	51,463
Fortuna City of	North Coast	20%	0%	Yes	2.4%	-2.4%	20.6%	4.4%	93.6	12,032
City of Newman Water Department	San Joaquin River	21%	21%	No	23.4%	-2.4%	19.0%	11.1%	162.4	10,668
Turlock City of	San Joaquin River	29%	16%	Yes	18.5%	-2.5%	26.3%	19.4%	154.7	72,050
Loma Linda City of	South Coast	30%	11%	Yes	13.9%	-2.9%	25.8%	13.8%	152.5	23,751
Porterville City of	Tulare Lake	26%	26%	No	28.9%	-2.9%	34.5%	28.4%	150.5	61,946
Monterey Park City of	South Coast	20%	14%	Yes	17.2%	-3.2%	21.6%	16.9%	98.5	62,183
Daly City City of	San Francisco Bay	8%	4%	Yes	7.5%	-3.5%	0.1%	5.1%	53.3	109,139
Exeter City of	Tulare Lake	34%	21%	Yes	24.5%	-3.5%	27.9%	20.7%	209.0	10,572
Modesto, City of	San Joaquin River	33%	20%	Yes	23.7%	-3.7%	23.9%	20.5%	146.0	223,432

\* Applicable Cumulative Savings Achieved by Supplier is used to assess compliance with conservation standard: cumulative savings through September 2016 start with June 2015 for suppliers that did not self-certify; cumulative savings are calculated starting with June 2016 for suppliers that self-certified.  
 \*\* A - Alternative Compliance Order; C - Conservation Order





## DRAFT Agenda

Water Conservation Executive Order B-37-16 (EO)  
**Urban Advisory Group (UAG) Meeting**  
 Thursday, October 20, 2016 | 9:30 A.M. – 4:15 P.M.  
 West Sacramento Civic Center Galleria  
 1110 West Capitol Avenue, 1st Floor  
 West Sacramento, CA 95691

### Meeting Objectives:

1. Review Updates to Draft Framework from Project Teams:
  - a. Eliminate Water Waste
  - b. Strengthen Local Drought Resilience
  - c. Use Water More Wisely
  - d. Reporting, Compliance, and Enforcement
2. Discuss considerations for the January 10, 2017 Report

**Meeting Materials:** (Will be posted at: <http://www.water.ca.gov/calendar/index.cfm?meeting=26372>)

### Listen-Only Webinar:

Attendee – Muted

United States (Toll-free): 1 877 309 2074

Access Code: 323-193-570

Registration URL: <https://attendee.gotowebinar.com/register/1329081237344273921>

Webinar ID: 232-638-211

Time	Item	Presenter
9:00a	Sign-in and Refreshments	All
9:30a	Welcome, Introductions, and Agenda Review	Diana Brooks, Department of Water Resources (DWR)  Stephanie Lucero, Center for Collaborative Policy (CCP) - facilitator
9:45a	EO Directive – Strengthen Local Drought Resilience <ul style="list-style-type: none"> <li>• Overview of Input from WSCP Workshops</li> <li>• Overview of Input from County Workshop</li> <li>• Status on Stages and Triggers Approach</li> <li>• Updates to WSCP Framework</li> <li>• Review and Questions</li> </ul>	WSCP Project Team Staff  UAG Public
11:45a	Lunch	<i>Lunch will be brought in for UAG members. Please bring \$10 cash if you would like the provided lunch.</i>

Time	Item	Presenter
12:45p	<b>EO Directive – Eliminate Water Waste</b> <ul style="list-style-type: none"> <li>Review of Framework for Draft Report</li> </ul>	Vicki Lake, DWR Max Gomberg, SWRCB Todd Thompson, DWR Sean Steffensen, CEC
	<ul style="list-style-type: none"> <li>Review and Questions</li> </ul>	UAG Public
1:30p	<b>EO Directive – Use Water More Wisely</b> <ul style="list-style-type: none"> <li>Updates on Targets Framework</li> <li>Revised Approaches to Reporting, Compliance, &amp; Enforcement</li> <li>Update on Previous Action Items</li> </ul>	Erik Ekdahl, SWRCB Peter Brostrom, DWR
	<ul style="list-style-type: none"> <li>Review and Questions</li> </ul>	UAG Public
3:30p	<b>Draft EO Report</b> <ul style="list-style-type: none"> <li>Updates</li> </ul>	Diana Brooks, DWR
	<ul style="list-style-type: none"> <li>Discussion</li> </ul>	UAG Public
4:00p	<b>Next Steps</b>	Stephanie Lucero, CCP
4:15p	<b>Adjourn</b>	

**PLEASE NOTE:**

- Written comments may be submitted at [wue@water.ca.gov](mailto:wue@water.ca.gov)
- Time will be allotted at the end of each agenda item for public comment. The exact time will be left to the discretion of the facilitator.
- Breaks will be taken throughout the day at the discretion of the facilitator and as discussed with the UAG.
- Please note parking is in the Event Parking site.

**HUMBOLDT BAY MUNICIPAL WATER DISTRICT**

To: Board of Directors  
From: Paul Helliker  
Date: November 16, 2016  
Subject: Water Resource Planning (WRP) – Status Report

.....

The purpose of this memo is to summarize recent activities and introduce next steps for discussion.

**1) Top-Tier Water Use Options****a) Local Sales**

GHD has revised the grant proposal to focus only on going north. I have requested an update from the Trinidad town manager about the schedule for discussion with the Town Council whether or not they would be interested in serving as the grant recipient.

**b) Transport**

The Transport Committee met on November 4, and discussed next steps. The following actions are planned:

- Send a letter to Governor Brown, noting our support of his efforts to secure and diversify California's water supplies, and our interest in transferring water (draft attached)
- Schedule meetings at the ACWA fall conference with representatives of the Sites Reservoir Joint Powers Authority, Metropolitan Water District, San Luis and Delta Mendota Water Authority, and Kern County Water Agency, to discuss transfer opportunities and our term sheet
- Contact ACWA and Sonoma County Water Agency to solicit information on potential sources of federal funding to defray costs associated with water transfer infrastructure

Attached are various articles relating to Sites Reservoir, California WaterFix, desalination and the Colorado, to provide perspective on issues associated with transfers.

**c) Instream Flow Dedication**

The Instream Flow Committee requested that we have a discussion with David Aladjem at the November 16 meeting about the tasks and schedule for preparing an instream flow dedication. Attached is the schedule that he prepared previously.

Draft letter to Governor Brown

Honorable Jerry Brown  
Governor  
State Capitol  
Sacramento, CA 95814

Dear Governor Brown:

On behalf of the Board of Directors of the Humboldt Bay Municipal Water District, I would like to commend you on your efforts to ensure that Californians have adequate and sustainable water supplies, and that the natural environments of our state's rivers, lakes and streams are healthy and protected. The work that you and your Administration do to address the impacts of global warming and assist local water resources managers such as our District are laudable and helpful.

Our District was formed sixty years ago to provide reliable, high-quality water supplies for the residents and businesses of the Humboldt Bay area. We are fortunate to have robust water supplies in the Mad River watershed – in fact, during the past four years, our storage reservoir at Matthews Dam has filled in each of the last four years. We expect it will do so again in the next few weeks.

As a result of the changes in the economy of Humboldt County, the two pulp mills in Eureka that used 75% of the water supplies that we have available closed down in the 1990's and 2000's, and we have been evaluating options in the intervening years to make beneficial use of these supplies. Our primary alternatives include developing additional local uses, dedicating some of the water to streamflow enhancement and habitat protection, and water transfers to other public water agencies in California.

Our District has supported a number of your initiatives to improve water resources management in California, including the Proposition 1 water bond in 2014, the Sustainable Groundwater Management Act, and the current work underway to implement elements of your Executive Order B-37-16. We have also opposed this year's Proposition 53, because we share your concern that it could hamper the ability of local agencies to meet future infrastructure investment needs.

As we develop our plans further for the best mix of uses for our available water supply, we will work with the various relevant agencies in your administration to secure their support and approval. We hope that you will lend your support, as well.

Sincerely,

Barbara Hecathorn  
President

Oroville Mercury Register (<http://www.oroillemr.com>)

## Sites Reservoir has a new website, logo and more than enough investors

*By Heather Hacking, Chico Enterprise-Record*

Sunday, October 23, 2016



Maxwell >> Last week, folks who are in the inner circle of the plans for Sites Reservoir held a get-together in Maxwell to show off the group's new office and new logo. Also new is a [website](#), that talks about all things Sites Reservoir — a construction schedule, facts sheets and a list of interested participants (see sidebar).

The next big step is money, particularly through a proposal to get a chunk of the \$2.7 billion of bond funds available from California's Proposition 1.

The Sites Reservoir committee won't be able to apply for that funding until around the middle of next year.

The plan has been to ask the state to finance about half of the estimated \$4.4 billion construction cost. That would mean that half of the benefits from the project would go toward "public" benefits.

Yet, if the state doesn't vote for half the funding, more than enough investors are ready to pay the tab, said Jim Watson, Sites Reservoir general manager.

Although investors are signed up from outside the Sacramento Valley area, only members within the Sacramento Valley will be the owner operators. That's been the plan from the beginning, Watson said.

### Crunching numbers

The estimate is that the completed reservoir would provide, roughly, 500,000 acre-feet of new water a year, depending on what happens with weather. If the state invests half the money, 250,000 acre-feet would go to public benefits. That leaves 250,000 acre-feet for water user/investors.

First dibs were given to Sacramento Valley investors, and 19 signed up for differing amounts.

Another 15 groups could receive water in the Bay Area, San Joaquin Valley and south of the Tehachapis, Watson said this week via phone.

Other groups may be involved with the planning but not necessarily signed up for water.

Metropolitan Water District, for example, is not signed up. However, the largest water district in the nation owns [Diamond Valley Lake](#) and will be able to offer expertise on how the Sites group might proceed, he said.

"We had a similar proposal by Placer County Water Agency, with a partnership with the City of Roseville. They are interested in learning how more public benefits could be achieved from Folsom Reservoir," which would be linked to Sites Reservoir via the [Central Valley Project](#).

He said the state Water Commission is also “trying to come up with a portfolio of projects that get the most bang for the buck” for statewide water needs.

Visit the new Sites website at [www.sitesproject.org](http://www.sitesproject.org) to see who has signed up to be a participating entity.

#### Water waiting list

“We ended up with enough requests that we have a waiting list,” Watson said. Groups have said they would like to sign up for 370,000 acre-feet, but right now only 250,000 is available.

“If the state participates at less than 50 percent,” those on the waiting list could take part.

“What I don’t want to do is have the state come in and say they only want to participate at 35 percent and then have 15 percent of that pie,” and need to find investors, Watson said. “My job is to try to present to the state that they should participate in the maximum amount, but I recognize there are other projects that are equally worth.”

#### Time to start paying

Meanwhile, groups that have pledged to take part are being asked to pay \$60 for every acre-foot of water they hope to receive each year. The money pays for environmental studies and the work to complete the project application to the state. Way down the road, it is estimated the cost of actually receiving the water will be about \$600 an acre-foot.

#### Next steps

State water leaders will soon come out with regulations that define how the application process will work for state bond funding, Watson explained. The timeline is no later than mid-January.

Next, the state will call for proposals. After that, he expects it will take four to six months while the proposals are evaluated. A decision on funding for Sites could arrive by late next year.

The group also expects lawsuits challenging the project for environmental impacts.

#### What’s an acre-foot?

For perspective, one acre-foot of water is 325,851 gallons, or enough water to fill two Olympic swimming pools. Based on the most recent [Chico water use rate](#) of 177.3 gallons a day, five people use one acre-foot of water a year. With those figures, 1.25 million people would use the equivalent of 250,000 acre-feet of water.

Contact reporter Heather Hacking at 896-7758.

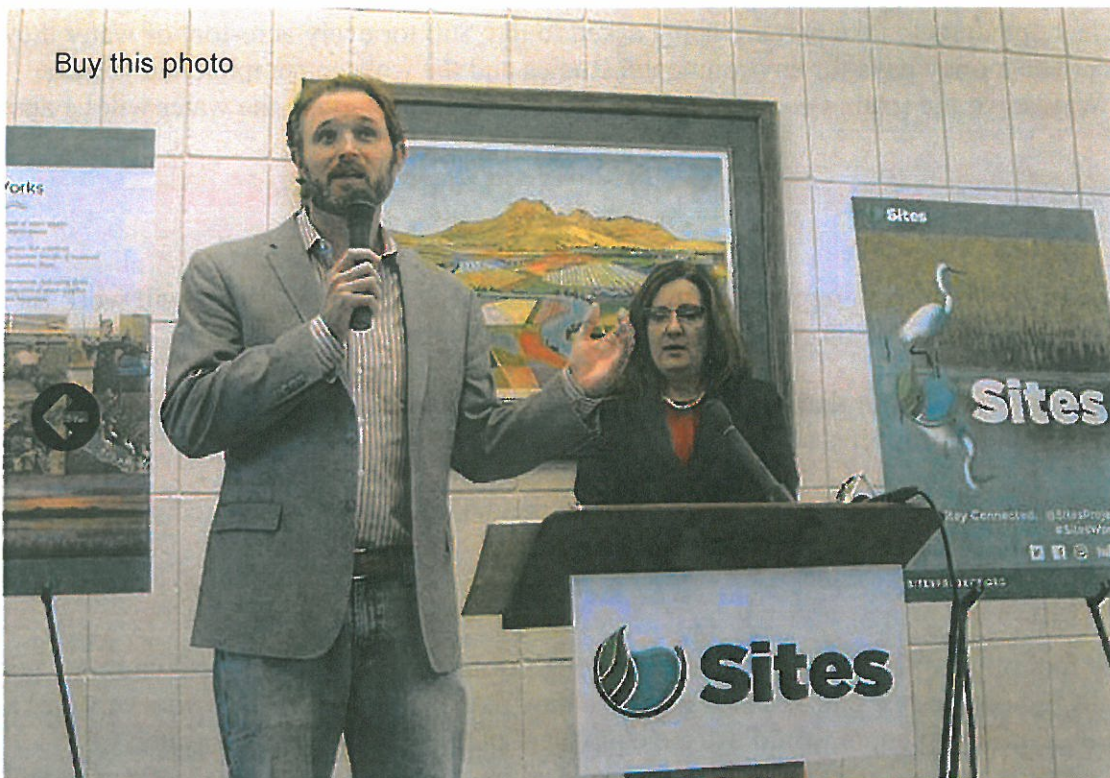
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URL: <http://www Orovillemr.com/general-news/20161023/sites-reservoir-has-a-new-website-logo-and-more-than-enough-investors>

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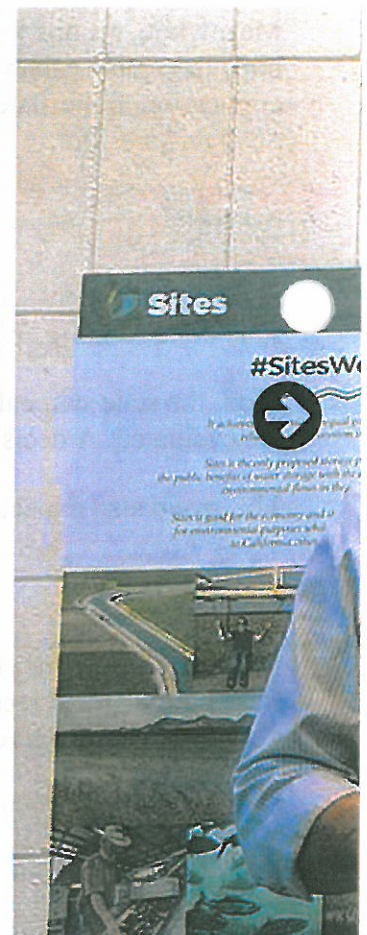
# Sites Reservoir backers prepare to seek bond money

Tim Hearden • Capital Press  
Published on October 24, 2016 1:49PM



TIM HEARDEN/CAPITAL PRESS

Assemblyman James Gallagher (left) and Colusa County Supervisor Kim Vann discuss the Sites Reservoir proposal during an Oct. 21 presentation in Maxwell, Calif. The Sites project will apply next year for Proposition 1 water bond funds.



MAXWELL, Calif. — Backers of the proposed Sites Reservoir west of here believe they have plenty of momentum going into next year's application period for Proposition 1 water bond funds.

The number of agencies signed on to participate in the project has grown from 14 to 34, including from the San Francisco Bay area and San Joaquin Valley, said Jim Watson, general manager of the Sites Authority.

And the Legislature recently passed Assembly Bill 2553, a bipartisan measure that will give flexibility in construction methods to help speed the project.

SECTION H2a, PAGE NO. 6

"With what we've put together now, we are on track to making the Sites Reservoir a reality," said Assemblyman James Gallagher, R-Yuba City, who authored the bill.

The \$3.6 billion Sites Reservoir project is one of several around the state that have been identified for potential funding under Proposition 1, the \$7.5 billion water bond approved by voters in 2014. The bond sets aside \$2.7 billion for large storage projects.

The California Water Commission is set to take applications from projects in the first half of 2017, determine the eligibility of projects late next year and determine funding in the spring of 2018, according to the agency's website.

Language in the initiative had called for the commission to hand out money as early as this December. But an initial timeline set out by the commission called for projects to be funded as late as 2019, Watson said.

"In May, we supported the commission's decision to accelerate the schedule, and they pulled a year off the schedule," he said. "We believe it's critical that these projects move forward."

Another project expected to seek funding is the \$2.5 billion Temperance Flat Reservoir near Fresno, for which the newly formed San Joaquin Valley Water Infrastructure Authority has begun planning its application.

The bond tasks the water commission with funding the public-benefit portion of storage projects, which could include flood protection, ecosystem restoration, recreation or water quality benefits. Local agencies that would benefit from additional water would need to partly fund projects.

Both the Sites and Temperance Flat projects would be aided by the passage of AB 2553, which will allow several steps in construction, such as designing and building, to happen concurrently.

The bill passed 78-2 in the Assembly and 36-1 in the Senate and was signed by Gov. Jerry Brown.

"We don't agree on everything," said state Sen. Jim Nielsen, R-Gerber, referring to the governor. "We're fighting over the tunnels. But we agree on this."

Planning for Sites has had a significant head start over other projects. The U.S. Bureau of Reclamation, the state Department of Water Resources and other agencies have been studying the workability of the planned 1.8 million acre-foot reservoir since before the CALFED Bay-Delta Program's record of decision in 2000 listed Sites as a potential project.

A joint powers authority was formed in 2009 and has been gathering commitments from those that would benefit from the additional water supply. The Sites Authority recently opened a new office in Maxwell and launched a new information website.

The moves follow a DWR report last year that Sites could generate as much as 900,000 acre-feet of additional water storage during drought years. An acre-foot is enough water to serve a family household for a year.

rancher Mary Wells, whose 500-acre property is in the center of the proposed reservoir in western Colusa and Glenn counties, supports the project because she understands the need for additional water storage, she said. She also farms rice and almonds near Maxwell and could benefit from the project.

"This project is different because it will have a whole different impact on the locals," Wells said, noting that plans call for Sites to be built by local companies. She credits the authority for dealing directly with affected landowners.



Wells touts what proponents see as the project's environmental benefits, as up to half of its stored water will be dedicated to increasing Sacramento River flows to improve water quality in the Sacramento-San Joaquin River Delta at certain times of the year.

SECTION H20, PAGE NO. 7

"The world has changed," she said. "California has changed. As much as farming, we deal with the environment."

# Some critics of California's Delta water tunnel project say allowing flooding to occur again in the San Joaquin Valley is a better alternative to the costly and controversial water infrastructure plan.

WRITTEN BY Matt Weiser

PUBLISHED ON Oct. 24, 2016

READ TIME Approx. 5 minutes



An almond orchard in Stanislaus County was experimentally flooded in 2015 to test groundwater recharge and crop tolerance. This kind of water management may be possible on as much as 3.6 million acres (1.5 million hectares) in the state. John Westberg, Modesto Bee

**WHEN CALIFORNIA OFFICIALS** got serious about building two giant tunnels to divert freshwater out of the Sacramento-San Joaquin Delta, it didn't take critics long to propose alternatives.

One of the first was a grassroots scheme that, at first, seemed radical and counterintuitive: Let winter floods retake vast parts of the San Joaquin Valley – the very farmland that needs those Delta water diversions. The floods would recharge depleted groundwater that could then be used to irrigate the farms, preventing the need for Delta water exports.

The idea came in 2007 from Tom Zuckerman, then an attorney for the Central Delta Water Agency, one of many groups still battling the tunnel project. Zuckerman drafted it in the form of a 26-page “white paper” that he presented to the Delta Vision Blue Ribbon Task Force, a panel appointed by then-Governor Arnold Schwarzenegger.

The proposal was later incorporated by Restore the Delta, another group opposing the tunnels, into its broader “[Sustainable Water Plan for California](#).” And then it largely faded from view.

“I have been kind of a voice in the wilderness on this subject,” said Zuckerman, who is now retired. “I talk about it constantly. And to this day I haven't had any person or any entity say this is not a feasible approach.”

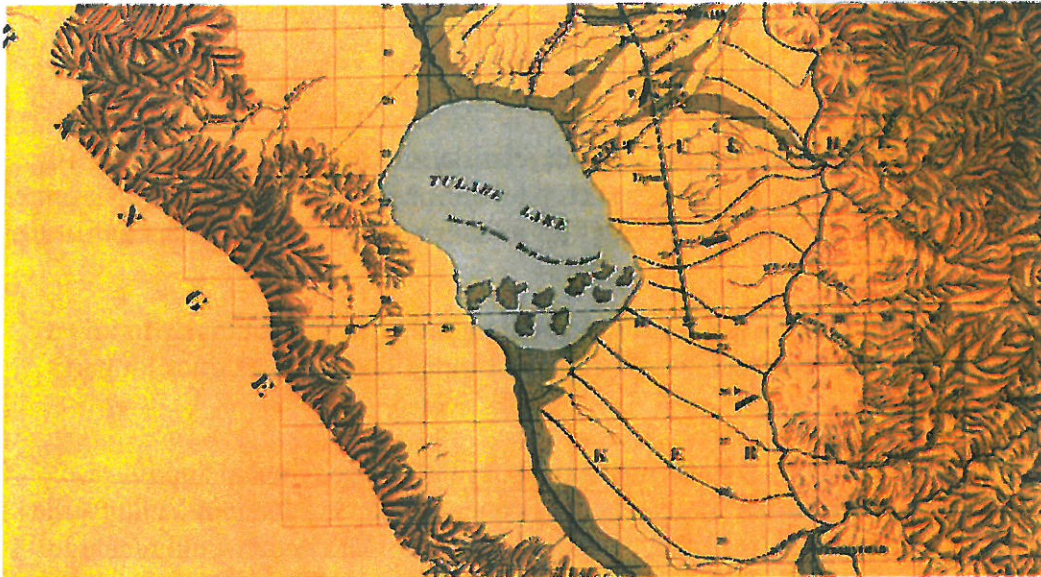
In recent years, other developments have focused fresh attention on California's serious groundwater problems: The state's ongoing drought, passage of the

Sustainable Groundwater Management Act in 2014 and new scientific research into floodplain restoration and groundwater recharge.

As a result, Zuckerman's idea no longer seems outlandish.

"That will not solve everything. There will be no silver bullet," said David Gutierrez, executive manager of the Sustainable Groundwater Management Program at the California Department of Water Resources. "But it's a combination of these ideas together that will help us do better than we've been doing in the past."

Zuckerman's proposal centers on reviving the historic Tulare Lake, located in the Southern San Joaquin Valley between Fresno and Bakersfield. Before California was settled, it was the largest natural freshwater lake west of the Mississippi River, fed by snowmelt from numerous streams pouring out of the Southern Sierra Nevada.



The historic Tulare Lake, as shown on a map from 1873, was once the largest natural freshwater lake west of the Mississippi River. Some advocates believe that allowing periodic floods to revive the lake could ease water shortages in the San Joaquin Valley. (David Rumsey Historical Map Collection)

He proposes to bring the lake back by strategically breaching levees and directing winter snowmelt back into the Tulare Basin.

The same process could be used further north in the San Joaquin Valley to recharge other aquifers, Zuckerman said. In this way, over time, the region could become self-reliant for its water needs.

"You start adding up these opportunities throughout the state, and you could drive the diversions from the Delta down, probably, to a quarter of what they are now," he says. "Historically, diversions at that level have not proven injurious to the Delta environment."

Gutierrez agrees the idea has merit. But he said it will never displace a significant amount of Delta water diversions. That's because groundwater depletion in the San Joaquin Valley is so severe that it will take a very long time to bring back. And flood-producing storms are actually somewhat rare in the San Joaquin Valley – on the order of once every 20 years.

In other words, he says, the region needs Delta water exports for a long time to come. Which is where the \$15 billion tunnel project comes in. Known as California WaterFix, it proposes improved infrastructure to divert Delta water to the San Joaquin Valley and the Los Angeles region.

“We’re not going to recharge the groundwater without some support from northern water,” Gutierrez said. “Both WaterFix and groundwater recharge are two tools that are going to have to be instituted.”

In many areas, the flooding Zuckerman proposes would not require any changes in land use, and would not harm existing crops.

In 2015, a University of California team published a study on groundwater recharge potential throughout the state. It was based on an analysis of soil conditions capable of absorbing large amounts of floodwaters, and crop types that could withstand flooding.

The study found there are 3.6 million acres (1.5 million hectares) of suitable soils with “excellent” or “good” potential for groundwater recharge. Crops identified as being tolerant of flooding include wine grapes, pears, prunes, walnuts and some types of almonds.

In total, the study concluded these lands could absorb as much as 1.2million acre-feet (1.4 billion cubic meters) of water per day. Five days of recharge at that rate would exceed a year’s worth of Delta water diversions.

The research team subsequently made their findings available in a web-based mapping tool.

“I really think it’s doable – politically and economically – to do this as soon as people catch on that water on the floodplain is not a bad thing for agriculture,” said John Cain, director of conservation for California flood management at the environmental group American Rivers.

“This stuff is not theoretical,” he said. “People are jumping on board, and there are multiple projects to breach levees and create floodplains.”

One such project will reroute levees on Paradise Cut in the south Delta to create a new floodplain for the San Joaquin River near Lathrop. It was recently awarded \$2.1 million in grants by the Delta Conservancy.

The state Wildlife Conservation Board also recently funded two other floodplain restoration projects along the San Joaquin River near Firebaugh and at Great Valley Grasslands State Park.

Another motivation for these projects, Cain says, is flood protection. As old levees age, they become increasingly expensive to maintain, and the demand for state and federal funds to help with these projects increases. So local governments and levee agencies are looking for alternatives – including restoring floodplains to absorb the water instead.

The obligation to restore endangered fish species is another motivation. By refilling aquifers, rivers can remain wet longer through the year because their surface flow is naturally connected to groundwater.

Instead, many California rivers today are considered “losing” streams: Groundwater is so depleted that rivers flowing on the surface are constantly losing huge volumes of water to the aquifer. Yet it’s not enough to refill those aquifers, because groundwater is still getting pumped out too fast.

Gutierrez says the Sustainable Groundwater Management Act is poised to change this game. As the law takes effect over the next two decades, many water agencies will be required to find ways to recharge groundwater, especially in the San Joaquin Valley, where most aquifers are known to be in critical condition. He’s certain the solution in many cases will be floodplain restoration.

But it won’t work for all aquifers, because a century of land development has cut off their connection to floodwaters. For aquifers near levees, the solution is simple: Open the levee where water can spill onto the most porous soil. In other cases, new water diversion channels may have to be built. These costs will be passed on to water users, which could make the recharged groundwater very expensive.

Although Cain is a leading advocate for such projects, he said there probably aren’t enough groundwater recharge opportunities to offset a significant share of Delta water exports.

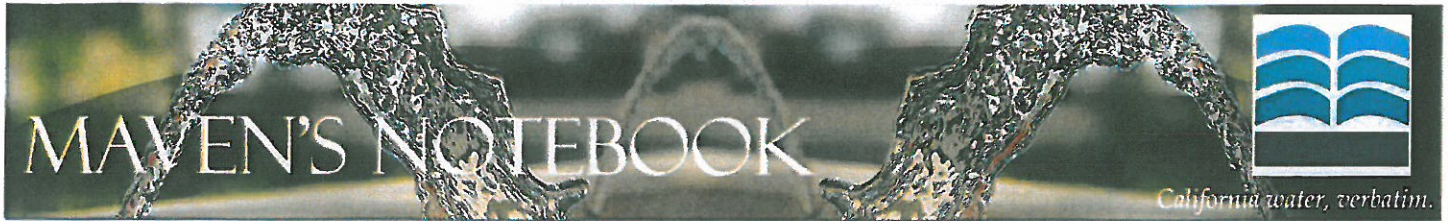
“It’s hard to believe you’re going to meet large fractions of their demand,” he said. “I think it could be really quite good for some basins.”

### ***About the Author***

**Matt Weiser**

Matt Weiser is a contributing editor at Water Deeply. Contact him at [matt@newsdeeply.org](mailto:matt@newsdeeply.org) or via Twitter at [@matt\\_weiser](https://twitter.com/matt_weiser).

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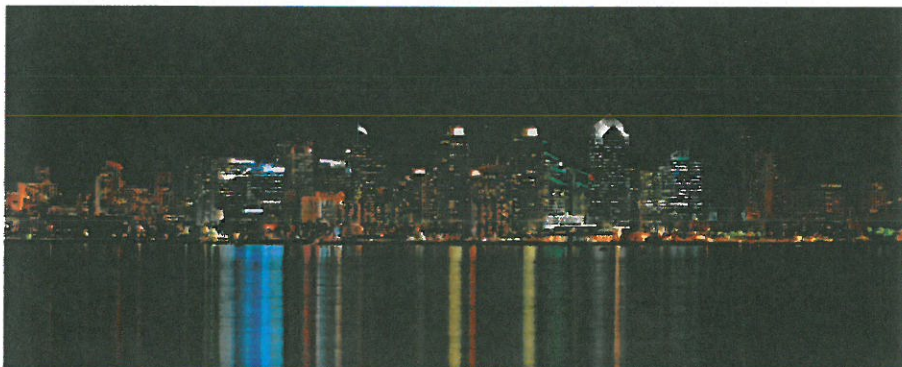


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## CALIFORNIA WATER FIX: Dr. David Sunding defends economic benefits of the tunnels to the San Diego County Water Authority

[October 31, 2016](#) [Maven](#) [Meetings](#)



### Dr. Sunding says California Water Fix is 'essentially like an insurance policy' to prevent erosion of existing water supplies

At the October meeting of the Imported Water Committee of the San Diego County Water Authority, Dr. David Sunding, Professor at the Department of Agriculture and Resource Economics at UC Berkeley and perhaps more importantly, an economic consultant for the state who has produced economic analyses for the Natural Resources Agency on the California Water Fix. In light of the release of [a draft economic analysis report a few](#)



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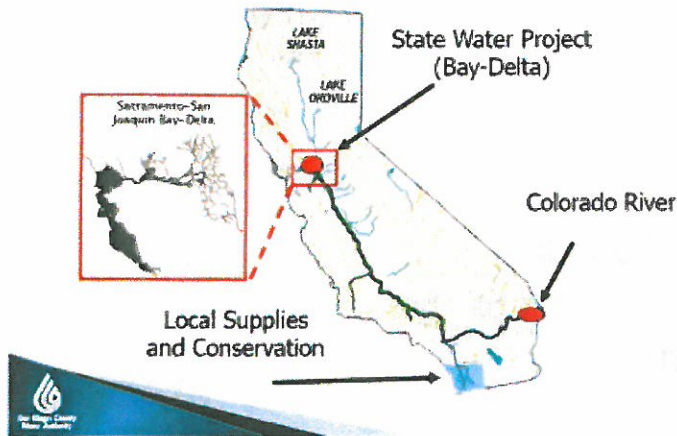
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months ago by the tunnel opposition group. Restore the Delta, Dr. Sunding was requested to speak before the Committee.

Amy Chen, Metropolitan Water District Program Manager, began the meeting by outlining the San Diego County Water Authority's position on the Bay-Delta, pointing out that because a portion of the Water Authority's water supply comes from the Delta, this board has always taken an

### Bay-Delta's Relevance to Water Authority



interest in an active role on the Bay Delta activities and has had a long history of supporting a sustainable Bay Delta solution. San Diego legislators

were instrumental in getting the 2009 Delta Reform Act passed, the Board adopted Delta policy principles in 2012, and an intensive 18-month multi-disciplinary staff team review of the Bay Delta Conservation Plan, she noted.

"The Board ultimately did not take a position because some of the key information was missing, mainly how much supply the Water Authority would receive from this project and at what price," she said.

Since 1990, the San Diego County Water Authority has reduced its dependence on Metropolitan (and therefore the Bay Delta) from almost 673,000 acre-feet to just 187,000 acre-feet in 2016, a reduction of 72%. "In 2035, we are projecting that we'll take less than 100,000 acre-feet, so representing about 13% of what we took from Metropolitan in 1990," she said.

At the same time, a number of things are occurring that could potentially impact the supply benefit of California Water Fix, such as the abandonment of the habitat conservation plan approach (Section 10) and instead, utilizing a Section 7 approach. "What that means is the permitting requirement would be similar to those that would be operating under the existing State Water Project," said Ms. Chen. "It's a specie-by-specie approach, so if a potential listing comes up, the permitting scheme may be changed. And this causes the supply reliability to be less dependable."

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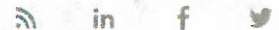
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MORE WAYS TO STAY IN TOUCH



UPCOMING CALIFORNIA WATER EVENTS

NOV

8

Tue

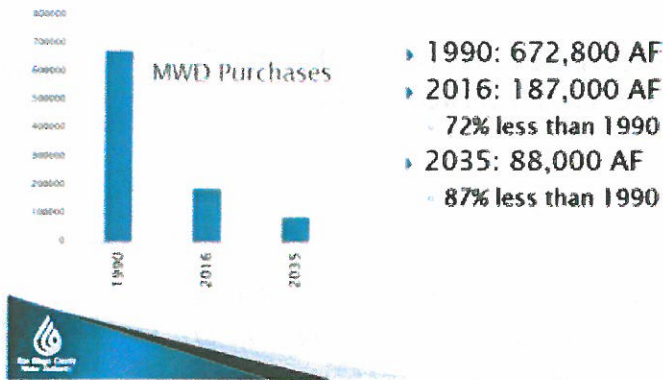
(https://mavensnotebook.com/calendar/action-one-day/event\_date~11-8-2016/)

all-day General Election  
(https://mavensnotebook.com/event/general-election/?instance\_id=155)

1:30 pm Delta Independent Science Board  
(https://mavensnotebook.com/event/delta-independent-

Other events that could potentially impact Cal Water Fix supplies are the invalidation of the Delta Stewardship Council's Delta Plan and the proceedings on the permit applications at the State Water Resources Control Board.

### Reductions in MWD Purchases – Sole Source of Bay Delta Water



There have also been economic analyses prepared. "In August 2016, the Center for Business and Policy Research, University of Pacific, Dr. Jeff Michael, did a benefit-cost analysis and in his analysis," she said. "He basically found that Water Fix benefit at .23 to .39 for every dollar spent. Last month, an AP news report, disclosed a draft economic analysis prepared for the Natural Resources Agency that placed a potential need for about \$4 billion of federal funding in order the project to make sense for agricultural contractors."

"The difference between the two reports, I think it's critical to understand, it's the assumption of the baseline," she said. "But nonetheless, the analysis prepared for the Natural Resources Agency identified a need for federal subsidies and the issue with that is the water code actually requires water contractors to pay for the conveyance facilities. So there's the conflict – if that doesn't make sense for some of the ag contractors, how would the difference be made up."

The California Water Fix faces audits of planning costs, both from the state and the federal government. "This board would recall, our delegates were very concerned about Met's willingness to front costs of without securing other beneficiaries' financial commitments, including their recent purchase of the Delta Wetlands of almost \$200 million by Metropolitan itself," she said.

"So in conclusion, the Water Authority's delegates have been advocating to Metropolitan that basically we have no interest in speculative water ventures," Ms. Chen said. "Water costs in Metropolitan's 2015 IRP, it talked about water costs could create opportunities for new markets and

science-board-8/? instance\_id=540)

NOV  
9  
Wed  
(<https://mavensnotebook.com/calendar/action-one-day/event-11-9-2016/>)

12:00 pm  
Webinar:  
Managing the Groundwater...  
([https://mavensnotebook.com/event/webinar-managing-the-groundwater-surface-water-interface-under-californias-new-groundwater-law/?instance\\_id=518](https://mavensnotebook.com/event/webinar-managing-the-groundwater-surface-water-interface-under-californias-new-groundwater-law/?instance_id=518))

1:30 pm  
Interagency Ecological Program (...  
([https://mavensnotebook.com/event/interagency-ecological-program-iep-2016-quarterly-stakeholder-meetings-2-2-2/?instance\\_id=180](https://mavensnotebook.com/event/interagency-ecological-program-iep-2016-quarterly-stakeholder-meetings-2-2-2/?instance_id=180))

5:30 pm  
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partnerships, and the Water Authority is not interested in those types of ventures. Again, this Board is well aware of the Water Fix's cost allocation, and how the costs will be applied to member agencies is a great concern with us."

## DAVID SUNDING, Professor at the Department of Agriculture and Resource Economics at UC Berkeley

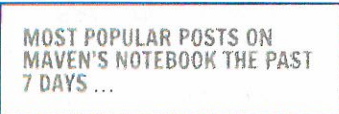
Dr. David Sunding began by summarizing what he would be saying in his presentation.

"As you know, California WaterFix is an evolving planning process that has yet to produce a final project and a final cost allocation mechanism that I or any other economist could approach with a formal cost benefit analysis," he said. "This presentation along with previous presentations and drafts represent a snapshot in time based on information that's available currently."

"After looking at this over many years, what seems clear to me now is that there's a very substantial benefit of investing in this project as compared to the status quo, which would lead to continued deterioration in water supply reliability over time. The information and environmental analysis that I've been provided to date suggests an improvement in water supply reliability for the State Water Project and Central Valley Project from Water Fix in the range of 1 MAF per year; the comparison with and without Water Fix would be in range of 1 MAF per year. A further decline in reliability without investment in Water Fix appears to be foreseeable given how both projects are under a formal re-consultation under the Endangered Species Act."

"From either an urban or agricultural perspective, California Water Fix will cost approximately \$400 per acre-foot of improved water supply," he said. "From an urban water supply perspective, this is dramatically lower than the cost of an array of local alternatives available to Southern California and the Bay Area—even when taking into account the costs of conveyance and water treatment. For agriculture in the San Joaquin Valley, there is no water supply alternative such as desalination. The valley will be acutely impacted by the imposition of groundwater management in the future, and I believe this is certain to decrease groundwater yields and increase the importance and the value of reliable surface water supplies."

"Valuing California Water Fix for agriculture remains a subject of intense and important discussion," he said. "I would suggest though that an important piece of data to inform this discussion is the rapidly rising value



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### CALIFORNIA WATER FIX: Update on endangered species permits, cost allocation

*of farmland in the San Joaquin Valley—even after eight years of drought in the past decade. These property values represent a current expectation of a net income in the range of approximately \$900 per acre on average. This is significant amount of net income, yet so is the cost of water also significant. If the property value and water cost trends continue, given the agricultural productivity of the San Joaquin Valley, California Water Fix will be quite positive for agriculture."*

*"I did not value climate change in the draft analysis that we are about to walk through, but it is noteworthy and important to consider," he said. "Sea level rise and its impact will only enhance the economic value of California Water Fix. Our current water system is not at present remotely prepared to cope with the effects of climate change. California Water Fix effectively mitigates the effects of climate change on the state's water supply. It is not easy to attach a cost/benefit value to climate change at present because the timing and severity are subject to considerable uncertainty. But it is an increasingly important factor that as directors with an eye towards to long-term, I would suggest that you should play extremely close attention to."*

*"Your staff report includes an attachment of an early draft analysis that I prepared for the Resources Agency. Up front, I would like to address an assumption in that analysis of a potential federal contribution toward the capital cost of California Water Fix. That was an assumption, a conjecture that I made in a draft document rather than an economic imperative as California Water Fix has evolved, so let's make sure we are clear about what that is. The state, and Director Cowin up at Metropolitan last week said definitively that there is no federal contribution needed to move Water Fix forward."*

*"Understanding more about the precise cost allocation method is important to provide a formal analysis," Dr. Sunding said. "An outside contribution by the state or federal governments does not appear to be an economic imperative. There certainly is a strong economic and political argument to have a public contribution to pay for the modest portion of the overall project for the public wildlife refuges in the San Joaquin Valley. But that is a narrow issue that I'm sure will be addressed over time."*

*"As we go through this presentation, the bottom line is that the difference in water supply reliability between investing in this project and risking billions of dollars in public investment is significant. This difference appears to be overwhelmingly likely to increase over time. And this will only increase the prudence of investing in California Water Fix from both an urban and agricultural perspective."*

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from the  
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the Metropolitan's Special  
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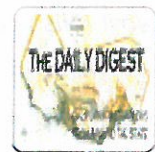
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Weekly water and climate  
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effort to counter sea level  
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With that said, Dr. Sunding then turned to his power point presentation, noting that the goal of the draft economic analysis prepared for the Resources Agency was to quantify the benefits and the costs of the project to the South of Delta contractors. *"It's looking at CVP contractors south of the Delta and the State Water Project contractors; excluded from the analysis are some other groups that get water from the Delta, namely the Exchange Contractors, the Friant system, and then the federal wildlife refuges, who all told, they get between 25 and 30% of the water that comes out of the Delta. That was outside the frame of reference of the study that we're going to go through today."*

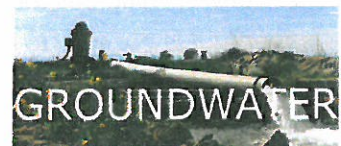
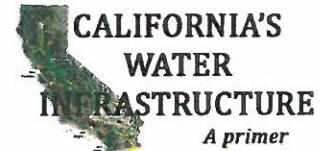
The approach used by economists to do a cost benefit comparison for a large capital project like this is to compare water supplies with and without the project, he said. *"You're comparing some state of the world to the status quo – what are water supplies with investment versus without. The reason you do that is to get an apples-to-apples comparison of what are you paying versus what are you getting for it. Sometimes we call that an incremental analysis; we're looking at incremental costs of the water versus incremental benefits because it's based on a comparison."*

*"This is water, so everything has to get complicated,"* Dr. Sunding said. *"Water Fix is a long-term project, so the baseline is dynamic, it's not static. We can't just look at conditions today because the project will last a long time; we have to look out into the future and think about what might the world look like with and without the Water Fix in place. After a lot of thought and a lot of empirical analysis, I settled on what is sometimes called the 'eroding baseline' to isolate the effects of the tunnels and to incorporate the potential or likely outcome of future re-consultations under the current project."*

*"In particular, what I did was I looked at operating criteria for the Water Fix and used those same operating criteria to calculate yields under the current infrastructure. What that does is it isolates the effects of having the tunnels, so it tells you what is going to be the incremental benefit of having the tunnels. This is a very important assumption."*

This is wherein the disagreement with Dr. Jeffrey Michael's analysis lies. *"Believe it or not, Dr. Jeff Michael and I actually agree on more things than we disagree on. He's a very good economist; I've known him for a long time. This is an issue that we don't agree on. He prefers to look at the status quo; my argument is that if the status quo were guaranteed going forward, we wouldn't be having this conversation now. This whole project is about protecting against future declines."*

At present, about 4.7 MAF is exported from the state and federal projects combined; modeling suggests post Water Fix yields would go up to 4.9



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MAVEN'S TROPHY CASE

MAF.

"Where Dr.  
Jeff Michael

and some  
opponents  
of the  
project

come from  
is that they  
say, 'you are  
only getting

200,000

acre-feet

out of a \$15

billion investment, that doesn't seem reasonable,' and that's where they  
get the .25 benefit cost ratio," Dr. Sunding explained.

"My perspective on this is that if you incorporate the likely effects of future regulations and the outcome of future reconsultations, then yields are actually likely to decline to the neighborhood of 3.9 MAF. This is different than the EIR-EIS No Action Alternative, but the EIR EIS No Action Alternative is not meant to be used in a benefit cost analysis. The restrictions about how that alternative is put together that I think make it not very useful for this particular purpose, when we're trying to evaluate the benefits from an investment."

Dr. Sunding noted that the 3.9 MAF No Tunnel eroding baseline incorporates the effects of future regulations. "The nice thing about it from an analytical perspective is that it isolates the impacts of investments in new conveyance. So all of this together implies in my view that Water Fix results in incremental yields in the neighborhood of 1 MAF, just a little less than a 1 MAF in an average year. It's important to recognize most of this is supply preserved and not new supply created, so it's essentially like an insurance policy rather than all being new water coming on to the system."

On the issue of climate change and California Water Fix, Dr. Sunding said there's been hydrologic modeling done of how the system performs under existing conveyance and under the Water Fix, incorporating the effects of sea level rise. "I've made reference in my study to modeling assuming 140 centimeters of sea level rise, which used to be on the high end of all the likely future outcomes; now it's kind of at the midpoint. It's about 3 feet of sea level rise. Under those conditions, State Water Project yields are with the tunnels about 2.5 MAF, very close to current levels; without the tunnels they decline by almost half to 1.3 MAF and the reason

## Water Supply

- **At present: 4.7 maf**
  - EIR/EIS No Action Alternative
- **Post-WaterFix: 4.9 maf**
  - Combined CVP and SWP at Early Long Term
- **No-tunnel eroding baseline: 3.9 maf**
  - Incorporates effects of future regulations
  - Isolates impacts of new conveyance
- **Implies incremental yields of ~1.0 maf**
  - Most of this is supply preserved and not new supply created



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The Switzerland of  
California water.

*is that the pumps in the Delta are very close to sea level, and with a little bit of sea level rise, they get inundated more frequently."*

*"So as climate change evolves over the coming decades, without some new conveyance in the Delta, the state is at risk of losing just under half of all the supplies coming out of the State Water Project," he said. "The tunnels envisioned in Water Fix essentially eliminate this risk completely and keep yields at roughly their current levels. Because of the uncertainty of the magnitude of sea level rise and the exact timing of it, I didn't monetize this in the economic analysis, so the climate mitigation benefits are incremental to anything that I've monetized."*

Dr. Sunding said the engineering cost estimates he was presented with had a present value cost of \$13.9 billion, including construction, design, planning, mitigation, land, and ongoing operations and maintenance. He explained why the numbers for cost are sometimes different: *"There are different ways of talking about cost that makes sense in different settings. For an investment analysis or for an economic cost benefit analysis, the way we do this is to compare the present value of the costs to the present value of the benefits because you have both costs and benefits occurring as streams over time. So to make those things comparable in an apples-to-apples sense, we pull it all back to a present value and then compare on that basis. And I think on that point, there's really no disagreement among any economists that I'm aware of; this is not some technique I made up for this study, this is how economists look at investments."*

Of the \$13.9 billion in present value costs, about \$10 billion under a proportional allocation would be assigned to the south of Delta contractors, he said, explaining that this was the assumption made in the draft analysis. *"The remaining \$3.9 billion are assigned to these other groups that are outside the scope of the analysis: Friant, the Exchange Contractors, and the wildlife refuges,"* he said.

Dr. Sunding then explained how he derived the cost of \$400 per acre-foot for California Water Fix, clarifying that the \$400 figure is for water at the Delta, before conveyance and before treatment. *"Let's start with the present value cost of the south of the Delta contractors of \$10 billion, and let's assume that the project produces in the neighborhood of 1 MAF of improvement in water supply. That implies a present value cost of right around \$11,000 per acre-foot, because I'm dividing by something that's a little less than a million. So present value cost of \$11,000, I'm going to assume a 3% real rate of interest that's recommended by the federal government for analysis of projects like this. The question is what is the annual payment that will produce a present value of \$11,000 at a 3% real rate of interest, and the answer is \$400. And so it's a very convenient way*

## Incremental Cost

- Present value cost to SOD contractors is \$10.0 billion.
- Assume project produces ~1 maf of improvement in water supply
- Implies a present value cost of \$11,000 per acre-foot
- Assume a 3 percent real rate of interest
- What is the annual payment that will produce a present value of \$11,000 at a 3 percent real rate?  
Answer: \$400
- Levelizing costs makes them easy to compare

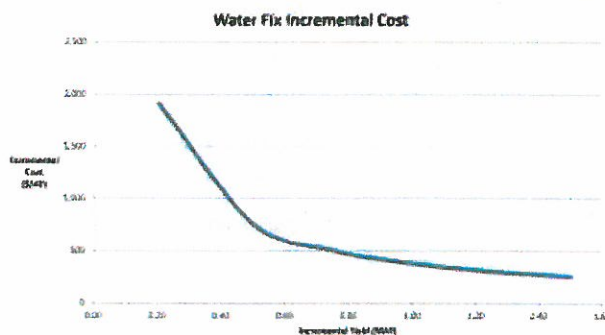
of comparing costs, because it presents them on a levelized incremental basis."

Another analysis one might want to do is to look at what

other alternatives could be build besides Water Fix to make up for supplies lost over time, he said. "To do that, you have to take that \$400 that's untreated at the Delta, and you have to add costs of conveyance and treatment to put it on an apples-to-apples basis with desalination or recycling," he said. "That means Water Fix incremental costs vary by agency. If you're closer to the Delta like Santa Clara is, or in the ag areas like Westlands or even Kern, conveyance costs are less and farmers don't need treated water, so the incremental cost to the agency varies depending on where the agency is located and what quality of water they need."

Dr. Sunding pointed out that the yield assumption s are very important in this analysis. He presented a chart and said, "This is a simple mathematic

## Incremental Cost vs. Yield



al analysis where I looked at the incremental cost of Water Fix varying the amount of yield it produces," he said. "In my base case analysis, Water Fix preserves about 1 MAF per year. There's uncertainty about what that number ultimately is. Suppose it's only 500,000. What this chart tells you

*is that if Water Fix only produces an incremental 500,000 acre-feet, then the cost is more like \$750 at the Delta. If Water Fix produces 1 MAF, we know the cost is about \$400; if the number goes to \$1.2, then the number goes down a little bit."*

*"This is important, because the project has moved from Section 10 of the ESA to Section 7, and that introduces some uncertainty about what the yields will actually be in the future, and that's something that has to be considered in an investment analysis," he said.*

Turning to urban benefits, Dr. Sunding said he did a numerically intensive computer based economic analysis based on Cal Sim II modeling runs and that's is the hydrologic inputs that go into the model, and I calculated the value of what the shortages that result from investment in Water Fix. *"What the analysis shows is that the value of shortages that are avoided by implementing Water Fix for all urban agencies together that get water from the State Water Project is about a little more than \$1400 per acre-foot, so that's the benefit side," he said. "That compares favorably in my view to the incremental cost of Water Fix, even factoring in costs of conveyance and treatment; I'd add that \$1400 per acre-foot also compares quite favorably to the cost of most water supply alternatives. I don't see a lot of projects out there anymore that have a produced water cost of less than \$1400."*

## Agricultural Benefits

- **Land price is a good indicator of farm water value**
- **Assuming land price of \$18,000/acre**
  - **implies annual net income of \$900/acre using a 5 percent capitalization rate**
- **Assuming water use of 2.5 af/acre implies annual value of \$360/af**
  - **Measured at the place of use**
  - **Less at the Delta (~\$300/af)**
  - **Less than the incremental cost of WaterFix**

It's a much closer call for agriculture, Dr. Sunding said. *"I did this analysis using a very complicated computer modeling framework that is used commonly*

*by the Bureau of Reclamation and other agencies, but rather than go through that, I want to walk you through a numerical exercise. Let's assume a land price of \$18,000 per acre, which is pretty close to an average over the area of the valley which gets water from the Delta. Using a 5% capitalization rate, that implies an annual net income of about \$900 per acre. Now assuming an average water use of about 2.5 acre-feet per acre provides an annual value of water of about \$360, so \$900*

*divided by 2.5 is \$360; it's about an average value of water in agriculture, and that number compares pretty favorably with what you see on water markets across wet and dry years. Prices can be much higher than that in dry years, but they can be lower in wet years."*

*"Now that's a value measured at the place of use, so if we want to construct a value at the Delta like we've been doing, you have to back out the cost of conveyance, so let's say the value at the Delta is around \$300 on average in this example. Well, that's less than our \$400 of incremental cost of Water Fix."*

*"What I think this very simple analysis summarizes is the results of some much more sophisticated modeling that suggest that trade-off in agriculture is really between investing in Water Fix and maintaining the land base," Dr. Sunding said. "The only real alternative that I see out there in the future for agriculture if Water Fix doesn't occur and the pattern of yields evolves the way I think it will, is that there's just a lot less agriculture in the San Joaquin Valley than there is at present. That has impacts for farmers, for farm owners, it also has community impacts of farm workers, and all sorts of businesses that transact with agriculture."*

Dr. Sunding then turned to costs and benefits. In an aggregate analysis that includes urban and ag, State Water Project and Central Valley Project – all the south of Delta contractors, he found the benefits in the range of \$16 billion and costs in the range of \$10 billion. *"In my view, based on the information I had last fall, Cal Water Fix in aggregate passes a cost benefit test."*

Digging in a little deeper to see how things compare for different groups, Dr. Sunding then split the contractors into three groups: State Water

## Comparing Costs and Benefits

- **Disaggregated costs and benefits**
  - Assuming a proportional cost allocation:
    - (\$0.6) billion for SWP ag
    - (\$1.0) billion for CVP ag
    - +\$7.6 billion for SWP urban
- **Once the cost allocation and financing plan is complete, can recalculate benefits and costs for various groups**

Project agricultural contractors, Central Valley Project agricultural contractors, and State Water Project urban contractors. *"The pattern I found here was striking and to be honest, somewhat concerning," he said.*



"For State Water Project ag, the benefit cost comparison I came up with, assuming just a simple proportional cost allocation was negative \$600 million in present value; for Central Valley Project ag, it was a little bit worse, negative \$1 billion, where for State Water Project urban users, the benefits were in excess of the costs by about \$7.6 billion, so you have quite a dramatic pattern here."

"As I understand it, this is part of what the State Water Projects contractors have in mind as they work through potential cost allocation plans," Dr. Sunding said. "Once they complete that process and a cost allocation and financing plan is complete, then I could go back and recalculate all of these benefits and costs for different groups, and see what we come up with once we have a final project defined."

"I will leave it here; I'm happy to take any questions."

## DISCUSSION HIGHLIGHTS

**"You mentioned Section 10 and Section 7 and going from a 50-year fixed reliability on the environmental to a year by year, species by species, and that kind of gets me back to your Slide 9, the graph," said Committee Chair Mark Watton. "You also mention sea level rise on your slide 5, which seems to have a dramatic effect. So what time period are you thinking that that 3 feet, or incrementally, that's going to go up. What is the effect of that and how does that interact back with your slide 9?"**

"The connection you made between Section 10 and Section 7, and the graph that I showed with the different costs, that was the connection that I wanted you to make – that uncertainty about the supplies is, other things equal, not something that favors investment," Dr. Sunding replied. "The more uncertainty there is in this deal, the harder it is to make a positive decision on it. It's been decided now that an advantage of the Section 10 approach is that it does provide some degree of regulatory assurance. Going forward, there's not a lock down guarantee, there's not ironclad sideboards, but there is an overall framework about how the project would be adjusted going forward, but that was not something that the state was able to permit, so they are now looking at Section 7. The only thing I would say about that is the uncertainty about the level of deliveries that you have under Section 7 is something that I would recommend you take into consideration. I am not an environmental attorney, so there are certainly others that you would want to hear from on this, but it is something that as an economist, I say should be kept in mind."

"The other question was about sea level rise," continued Dr. Sunding. "For sea level rise, the modeling that we used was actually based on 2100 conditions, but there is a feeling that 140 centimeters of sea level rise

*might be occurring faster than that. The increase already is happening somewhat outside the bounds of what scientists thought possible even a decade ago. So I can't give you an exact answer about when this is likely to occur, except to say that I think there is pretty much consensus that these levels of sea level rise are possible, but exactly when it would happen, I don't know. And that's why I didn't monetize it in the analysis because the benefits are very sensitive to the timing, so this is something that we continue to look at, but as of last fall and even as of right now, I don't have a monetary value of this. But I do think it's significant to note that the State Water Project might lose half of its supplies if this occurs."*

**"There is the State Board conversation right now on river flow minimums, again they are looking at flow out through the Golden Gate," said Mr. Watton. "It would be interesting to know if you would do an update, or is someone going to be commissioned to do an update with the Section 7, will the sea water rise within the scope of this project affect it, and if the State Board puts these river flow regulations in, how does that work?"**

*"You raised a third issue there which is very important, the flow criteria on the San Joaquin and Sacramento Rivers," said Dr. Sunding. "What I understand about that through the lens of Water Fix is that say more flow on the San Joaquin River increases both the with and without project yields, so the increment is relatively unaffected, because they both go out, so the difference is the same, approximately."*

**Committee member Jim Madaffer asks Dr. Sunding about the draft report in the board packet. Is this the latest one?**

*"The one that's in your board packet I believe is November, 2015," replied Dr. Sunding. "There were at least four or five drafts after that. There was a draft as late as this July. About 5, 6, 7 drafts of this report have been done."*

**"Are you making these changes or is somebody directing you to make these changes?," asked Mr. Madaffer.**

*"I make all these changes," responded Dr. Sunding.*

**"With climate change, the Sierra mountains have become not as reliable of a water storage source as they once were," said Mr. Madaffer. "Have you done an analysis to forecast out 25 years from now as to whether or not this is a reliable expenditure compared to let's say, we built 15 desal plants and came up with better conveyance to get the water into the system? It seems to me if we can build a desal plant for less than a billion dollars here that produces a reliable every single day of the year water supply compared to this thing, which is unreliable, based on the Sierra mountains. Have you done any analysis there?"**

"A couple of points in there that I'd like to address," responded Dr. Sunding. "First the question about climate change and the underlying reliability of the CVP and the State project. The modeling that I went through today with the 140 cm of sea level rise; that also includes assumptions about the change in the rain/snow mix, and again the target date for that study was 2100. Those effects are real, and they've been modeled by us and a number of other people. They are included in the numbers that you see there, and that's part of what causes the almost 50% decline in State Water Project yields, but again, with the Water Fix in place, what the hydrologic modeling suggests that those declines would not occur, but the current level of deliveries on the state system could be maintained."

**"Has an analysis been done comparing this to perhaps something more reliable, such as a desalination plant or a series of plants that could be located that would serve both ag and the needs of the State Water Project?," asks Mr. Madaffer.**

"I agree completely that when you are comparing a desal project to an investment in something like Water Fix that doesn't have a certain yield every year, you have to make an adjustment for reliability," said Dr. Sunding. "That's something that I've written about as an academic and something that I've worked with a number of agencies in Southern California on how to develop methodologies to do that. The analysis that I did for Water Fix does incorporate reliability criteria, and all things equal, if you have two investments with the same expected amount of water delivery, one is reliable, one is not, you are going to go for the reliable one. Cal Water Fix is not as reliable, but there's also a lot of storage on the system, so the operation of storage both in the state system and terminal reservoirs in Southern California – that all figured into the benefits analysis that I did."

**"The Water Fix addresses the reverse flow problems, we know that it does that, but the conversation that we've been hearing recently a lot about, particularly from the State Board, is on the outflow issue," said Committee member Fern Steiner. "In 2016, additional summer outflow was required by the fish agency the federal one, and then the resiliency plan that we've had some presentations on also has additional outflow requirements, so looking at your analysis, is that already taken into account, that there might be additional flow required?"**

"No it's not," said Dr. Sunding. "One of the essentially a frustration of doing an analysis like this over such a long period of time is things keep changing. When a lot of this numerical work was done a year or two ago, the State Board was not as far along on the hearings for the San Joaquin

*and Sacramento River, so that is not included in here. But what I've done in the last few months is gone back and talked to the hydrologic modelers about if those things did occur in the way the State Board is envisioning, what would be the impacts on Water Fix, would it fundamentally change the economic analysis? And the answer I got back was that the increment, which I think is important to focus on from an investment point of view the difference in yields with and without Water Fix in place would be relatively unaffected by the outcome of those proceedings, because it would change both the with and without project condition in roughly the same way."*

**"Recently, DWR Director Cowin told the MWD board that the Water Fix is a no-brainer for urban agencies, but it was a tougher call for agricultural contractors because of the commodity prices," asked Director Michael Hogan. "When I'm looking at the slides regarding urban and ag benefits .. does the project pencil out only if the urban contractors pay four times more than the ag contractors pay? Does it pencil out?"**

*"I made a number of assumptions to get to the disaggregated analysis," said Dr. Sunding. "The assumption I made and a reasonable one at the time was that every unit of water coming out of the Delta pays the same rate, so no one is subsidizing anyone. What I concluded was under that very simple cost allocation on average for the State Project ag contractors and CVP ag contractors is that it did not pencil out. Now there are a lot of ways that could be resolved. One way would be to reallocate costs differently; I'm not sure in the urban areas of California that there is much appetite for that. I think there are some other proposals to say if an agency is willing to pay less for reliability, and agencies do have different levels of willingness to pay for reliability, then they would get less reliability out of the project, so the water would get reallocated along with the costs. That's a possibility too. There are a lot of other possibilities, and those are discussions that are happening now among the contractors. Once they come up with a plan, then we can all take a look and see at a disaggregated level how benefits and costs compare."*

**"If you were advising the ag contractors based on these numbers, what kind of advice as an economist would you give them?," asked Mr. Hogan.**

*"Let me say first, and I have talked quite a bit to Kern, Westlands, and others, particularly the State Water Project ag contractors, that it's important to remember too that agriculture is not a monolith," said Dr. Sunding. "There are some farmers that are out there right now on the water market out-competing any city I know of. They are making a lot of net income growing highly valued specialty crops with very highly capitalized operations. That's one end of the scale. Then at another end*

*of the scale, there are still come cotton growers or farmers growing hay or other grain crops, much lower on the value scale, so there's not a one-size fits all answer for the ag contractors. On average, this is how the numbers came out, but the message that I would convey to them is really largely the same is what I've conveyed here today: There are certain costs, there's a profile of benefits, you need to take a look at your own operations and see if this makes sense or not, but the prospect of a 1 MAF at \$400 an acre-foot from a statewide view is pretty enticing."*

**"On an earlier report, you mentioned the fact that \$3.9 billion was needed by federal subsidies for it to pencil out for the ag contractors, and I looked at your analysis and power point and tried to figure out where that comes in," said Board Chair Mark Muir. "I noticed you had a slide up there for Friant and the refuges for \$3.9 billion. Is that the same number or is that a coincidence? Who is that group and have they agreed to the costs?"**

*"That is the same number, the \$3.9 billion," replied Dr. Sunding. "The assumption I made is that every unit of water coming out of the Delta pays the same cost for Water Fix, so by most definitions, that's a no subsidy environment, every unit pays the same. What I was looking at in this study was costs and benefits from the perspective of the state and federal contractors, but then there's this other group. The exchange contractors, Friant, and then the wildlife refuges which uses water coming out of the Delta, so those three groups have a benefit profile that is different than what I've analyzed here, and it's not something that I monetized. I assigned a \$3.9 billion cost share to them because that's their proportional costs, but then the benefits to them are outside the scope of this analysis. As far as I know, they have not agreed to pay \$3.9 billion, I don't think anybody's agreed to pay anything for Water Fix, but that's outside the scope of what I've done. ... That's a separate analysis that's going to have to be done at some point, and if they ultimately conclude that is not something they want to pay for, then the costs will have to get reconsidered. So this is part of the overall picture that has to come into focus before I think we really know what we have here."*

**"There was an emphasis on various disasters, and scenarios such as earthquakes as interruptions to the Delta supply, and I think I read somewhere, those benefits don't really exist because of the amount of time it would take to restore the water, the deliveries wouldn't justify the cost of the twin tunnels," said Mr. Muir.**

*"The number I have in here for seismic risk reduction benefits that factors into that \$16 billion is actually pretty modest, right around \$500 million," replied Dr. Sunding. "That's the average of a whole range of scenarios that I looked at. It is worth noting that, this is another question that is*

complex. If you have an outage of some given duration, to figure out the impact of it, you also have to know what kind of water environment you are working in. A six month outage in a wet year might not be something you'd even notice at the end of the system. A six month outage in a year like 1991 when storage is already depleted, that would be painful, so what I did in the analysis is I looked at how wet year, dry year hydrologic conditions interact with different outage durations. For the purposes of the benefits analysis, I settled in on a number of \$500 million, which was a mean figure and not a large part of the overall \$16 billion, but there are conditions under which the benefits could be much greater."

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One comment

# Desalination: Why Tapping Seawater Has Slowed to a Trickle in California

[www2.kqed.org/science/2016/10/31/desalination-why-tapping-sea-water-has-slowed-to-a-trickle-in-california/](http://www2.kqed.org/science/2016/10/31/desalination-why-tapping-sea-water-has-slowed-to-a-trickle-in-california/)

By David Gorn

Once thought to be the wave of the future, turning seawater into drinking water is proving to be a tough sell in California.

Desalination of ocean water has long held promise, but the dream of sticking a straw in the ocean and getting unlimited clean water by simply opening the spigot of technology — that's looking less and less likely here.

Scarcely a decade ago, when "desal" was relatively new to the state and optimism was high, there were 22 different proposals for plants up and down the California coast. Since then, plans have been scrapped in Marin, Santa Cruz and other coastal cities. A tiny desal plant has been constructed in Sand City, north of Monterey, but only one significant project has been completed.

It's in Carlsbad, 30 miles north of San Diego, and it's the [largest desal plant in the nation](#), built and operated by Boston-based [Poseidon Water](#). Peter MacLaggan looks up at the giant building like it's a monument to common sense.

"If you don't plan for the future and ensure you have an adequate supply," says MacLaggan, a senior vice president with Poseidon, "you're going to find yourself in a crisis that costs a lot more than if you plan ahead and do it right."

He says one of the reasons the San Diego area managed to get a desal plant built is because of its location at the tail end of the state's water pipe.

"When you look at San Diego and where it's located in the water supply system in California, it's at the end of a very long plumbing system, 500 miles from its nearest source," MacLaggan says.

That intensified the need for another water supply, he says. This plant supplies about 10% of the San Diego area's water needs.



The sprawling Carlsbad desalination plant is the nation's largest. It's been online for less than a year but has been cited several times for environmental violations. (Adam Keigwin/Poseidon Water)

## Environmental Costs

MacLaggan and other proponents hold up Carlsbad as proof-positive that desal works. But just 60 miles up the coast from Carlsbad, you get a different view on a white expanse of sand at Huntington Beach, where [another one of these gigantic plants](#) is proposed to go.

Ray Hiemstra says this spot is the poster child for why desal *doesn't* work.

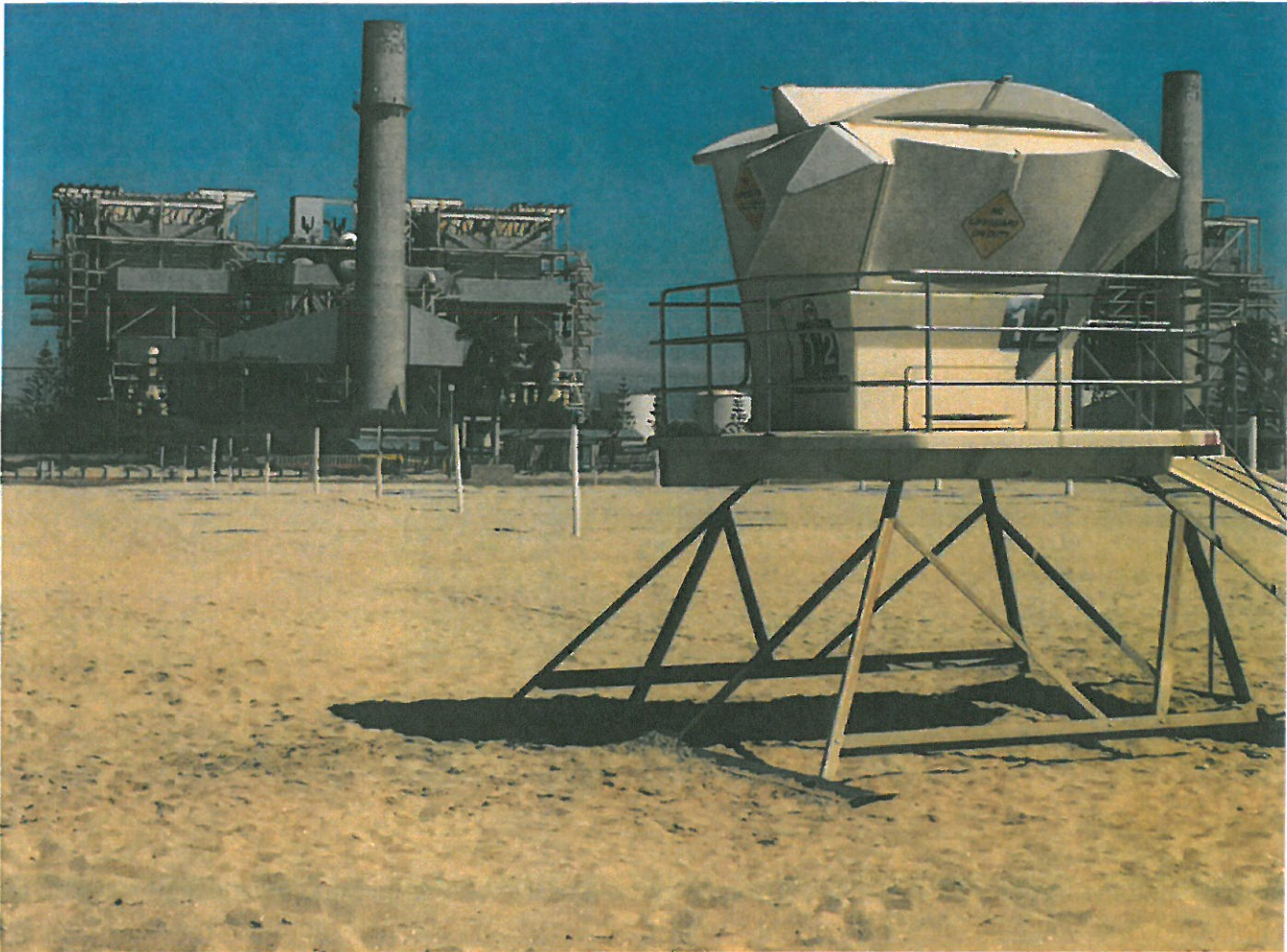
"It's going to kill marine life, pollute your water, increase your rates and most importantly we don't need it," he says.

Hiemstra works for [Orange County Coastkeeper](#), a South Coast environmental watchdog. He starts to run out of fingers as he enumerates all the other reasons to reject the proposed plant at Huntington Beach: there's an active earthquake fault here. Plus it's in a tsunami zone. And it's elevation is so low that rising seawater levels might inundate the proposed site.

One of the big problems with taking salt out of seawater, says Hiemstra, is what to do with the salt after it's removed; that highly concentrated brine typically goes back into the ocean. At Huntington Beach, you can see the outflow pipe just a thousand feet offshore.

"It's right there," he says, squinting and pointing at the surf line. "There's a couple of surfers out there, right by it."





The proposed Huntington Beach desal plant would use the outflow pipe from the AES power plant (background) to deposit salt residue (known as brine) back into the ocean.

When you increase the level of salt in the water, he says, even diluted to low levels, it disrupts marine life all around that spot.

“Anything that comes through here and realizes that brine plume and higher salinity, even a little bit higher salinity, it’s just going to move away.”

That area of less sea life and the water at the outfall can drift south, he says, affecting the food supply of the California least tern, a threatened bird living nearby.

And there’s another problem with putting water from a desal plant back in the ocean: it may have residue from the chemicals used to treat the water, such as chlorine.

‘There are some people who still hold onto it as the Holy Grail.’ *Heather Cooley, Pacific Inst.*

The Carlsbad plant isn’t even a year old but state officials have cited it a dozen times for environmental violations. That includes what they call “chronic toxicity,” from an unknown chemical used in water treatment that has been piped into the ocean. The company is still trying to identify, isolate and clean it up.

### Expensive Water

But the environmental concerns aren’t the main barrier.

"In general, one of the big challenges has really been the cost," says Heather Cooley, an analyst with the Pacific Institute in Oakland. The nonpartisan research group recently issued a lengthy report on the state of desal in California.

Beyond the environmental cost is the actual price tag: the plant in Carlsbad cost \$1 billion to build, with a rough estimate of \$50 million a year for the power to run it. The estimated cost of the water to San Diego is about \$2,300 dollars an acre-foot — more than double the cost that most Southern California cities pay for water. (An acre-foot is enough water to supply one-to-two California households per year.) And ratepayers need to pony up for that water even during rainy seasons when the price of water from more traditional sources plummets.

Cooley says the expense is the main reason communities have turned away from desalination.

"As many of these projects sort of went through the process and started looking more seriously at the cost," she says. "There started to be concern that that was too high, that there very likely were other options."

Those options include treating wastewater and putting it back into the water table, catching stormwater runoff, or simple conservation efforts. That's the future most agencies are pursuing in California.

Cooley says desal used to be high on the list of possible water sources, but now it's closer to the last choice on the list.

"There are some people who still hold onto it as the Holy Grail," she says, "that thing you're seeking that's going to solve our problem."

Now, six years into the drought and counting, the demand for water sources is only liable to intensify. That could set the stage next year for yet another fight over approval for the Huntington Beach desal plant.

# Water Crisis: The Colorado River Is Drying Up, And The Next President Needs To Work Fast To Stop A Major Drought

BY CLARK MINDOCK ..... ON 11/02/16 AT 12:44 PM

No matter who wins the White House Tuesday, the next president's administration will likely immediately face a pressing issue that gets very little national attention: What to do about the drying Colorado River that supplies water to millions of people in the American Southwest.

The next commander-in-chief will need to take immediate action and show leadership to ensure that the millions of people living in areas from Phoenix to Southern California continue to have access to water from the Colorado River now and in the future, a new study published Monday by the Colorado River Future Project (CRFP) at the Getches-Wilkinson Center for Natural Resources, Energy and the Environment at the University of Colorado at Boulder suggests. CFRP interviewed more than 65 important players interested in management of the river, including water managers, municipal and agricultural customers, conservationists and government officials from the Congressional, state and tribal levels.

## ADVERTISING

"What we're seeing here is the impact of 16 years of drought and increasing demand throughout the system," Anne Castle, a former U.S. Department of Interior secretary for water and science and a senior fellow at CFRP, told International Business Times in a phone interview. "For all intents and purposes it's about a 50-50 chance that we will see actual reductions in" water deliveries starting in 2018, she said.

Whether that happens depends on if water levels in Lake Mead, which helps supply water for 25 million people across Nevada, Arizona and California, drop even a just little bit. The study findings show that, after decades of

population and agricultural growth in the Southwest, there just doesn't seem to be enough water in the river to honor promised allotments to states in the region. Reductions, including a potential 11.4 percent ration cut for Arizona and a 4.3 percent cut for Nevada, may be necessary. California, under current agreements made between the stakeholders, would be spared. If that happens, people could be affected differently. Depending on the individual municipality or area, those cuts could manifest in a variety of forms, including governments encouraging residents to only water lawns at times when water use is lowest or utilities raising prices for consumers who use the most water. In California, which has already been hit by a severe drought, past policies to curb water consumption at the local level have included the threat of stiff fines for failing to meet reduction goals. The decision to cut consumption for states and municipalities is made according to previous agreements between hundreds of water rights holders in the region, including states, municipalities and tribal governments. The process is overseen and organized, but not controlled, by the federal government.

The current agreement, which is being renegotiated, will make cuts if the water level in Lake Mead — which sits above the Hoover Dam on the border between Arizona and Nevada — drops below an elevation of 1,075 feet above sea level. The levels vary naturally and at one point this year dropped to its lowest point in recent history below 1,075 feet, according to NASA Earth Observatory measurements. Castle said the Bureau of Reclamation, which monitors the water for the stakeholders, has estimated there is a 48 percent probability that official measurements will drop below that level next year in August when the bureau performs an annual analysis. Water advocates, noting there is no guarantee that Lake Mead will be replenished even with those cuts, have argued for reducing access for stakeholders earlier so that the reservoir can have a chance to replenish.

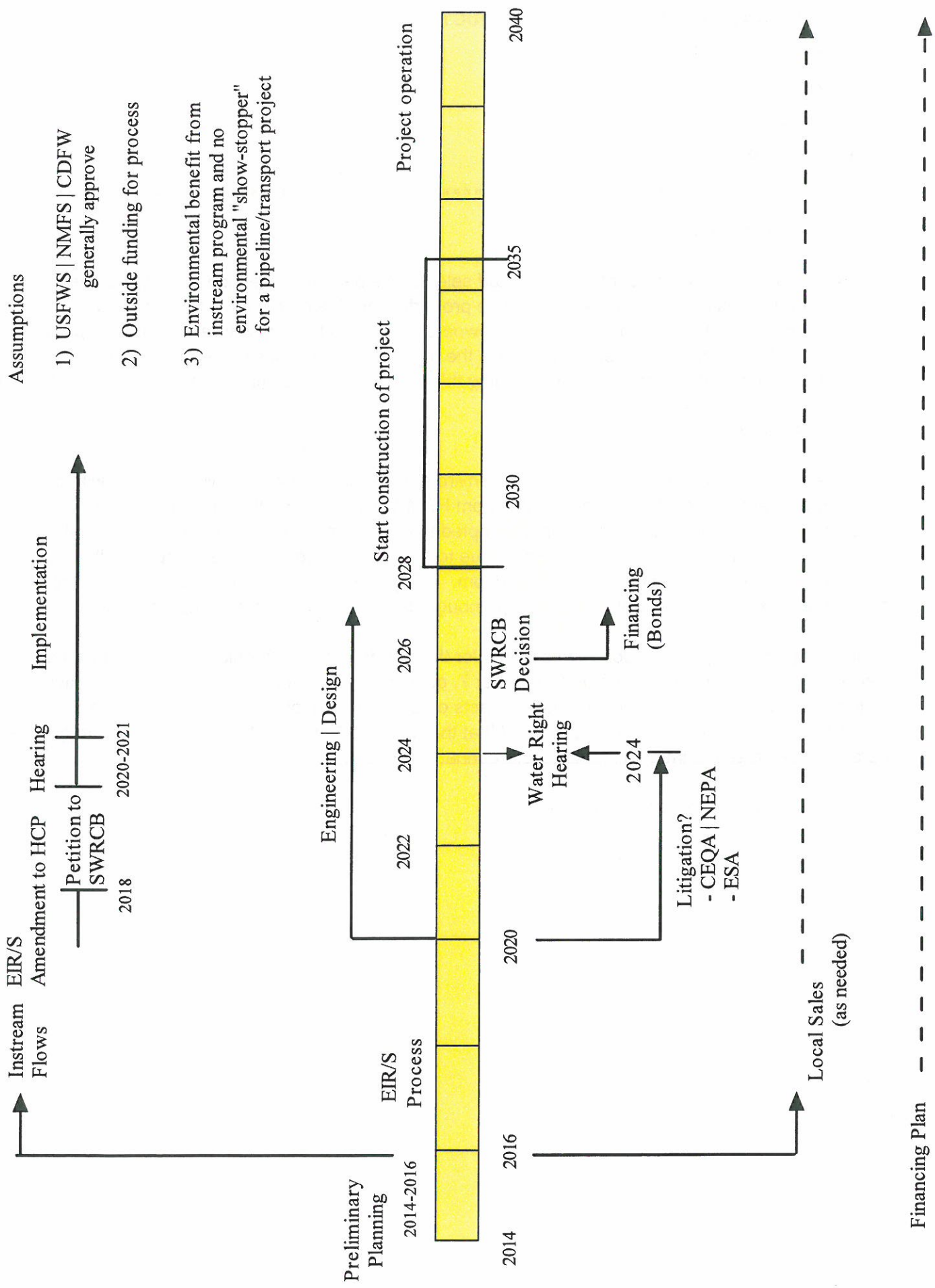
The two leading presidential candidates have made some pretty different comments on water scarcity in the West, though it is not sure how either would address the Colorado River water levels. Democrat Hillary Clinton has offered vague proposals in California to help with a drought there by investing in new water systems infrastructure. Republican Donald Trump, on the other

hand, has dismissed claims that the California drought even exists and has called climate change a "hoax," which many scientists say has exacerbated the situation in California. The state's drought recently entered its sixth straight year and has broken records there, leading to drastic reductions in reservoir levels, increasing vulnerability to devastating wildfires and billions of dollars in agricultural infrastructure damages.

The United States and local stakeholders are also currently renegotiating with Mexico a treaty to share and manage the Colorado river, which needs to be renewed by 2017. Renewing or renegotiating the treaty — which the new study suggests should be a high priority of a presidential administration alongside figuring out new cutoff thresholds for the states mentioned above — would allow Mexico to continue storing some of its water in American reservoirs and allows the U.S. to reduce water deliveries across the border in times of extreme shortage.

Either way, the Southwest is facing dry years ahead and the necessity to implement smart policies to survive those conditions. But, it's not all bad news for municipalities hoping to keep on growing. Castle said that, while water cuts may sound horrible, in the Southwest those limitations definitely can and do work alongside big population growth. For instance, Las Vegas, which has implemented water reuse and conservation policies that are seen by many as a sterling example of what thirsty cities can do.

"In Nevada, the Colorado River flows through the Las Vegas area and, even though the population there has grown considerably, they're not using any more water and maybe even less water than they did several years ago," Castle said, referencing water recycling and conservation efforts taken in the city that have been met with acclaim. "There are ways for municipalities to grow their populations without using more water than they should be."



**HUMBOLDT BAY MUNICIPAL WATER DISTRICT**

To: Board of Directors  
From: Paul Helliker  
Date: November 16, 2016  
Subject: Cannabis Update

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**Regulatory Agencies**

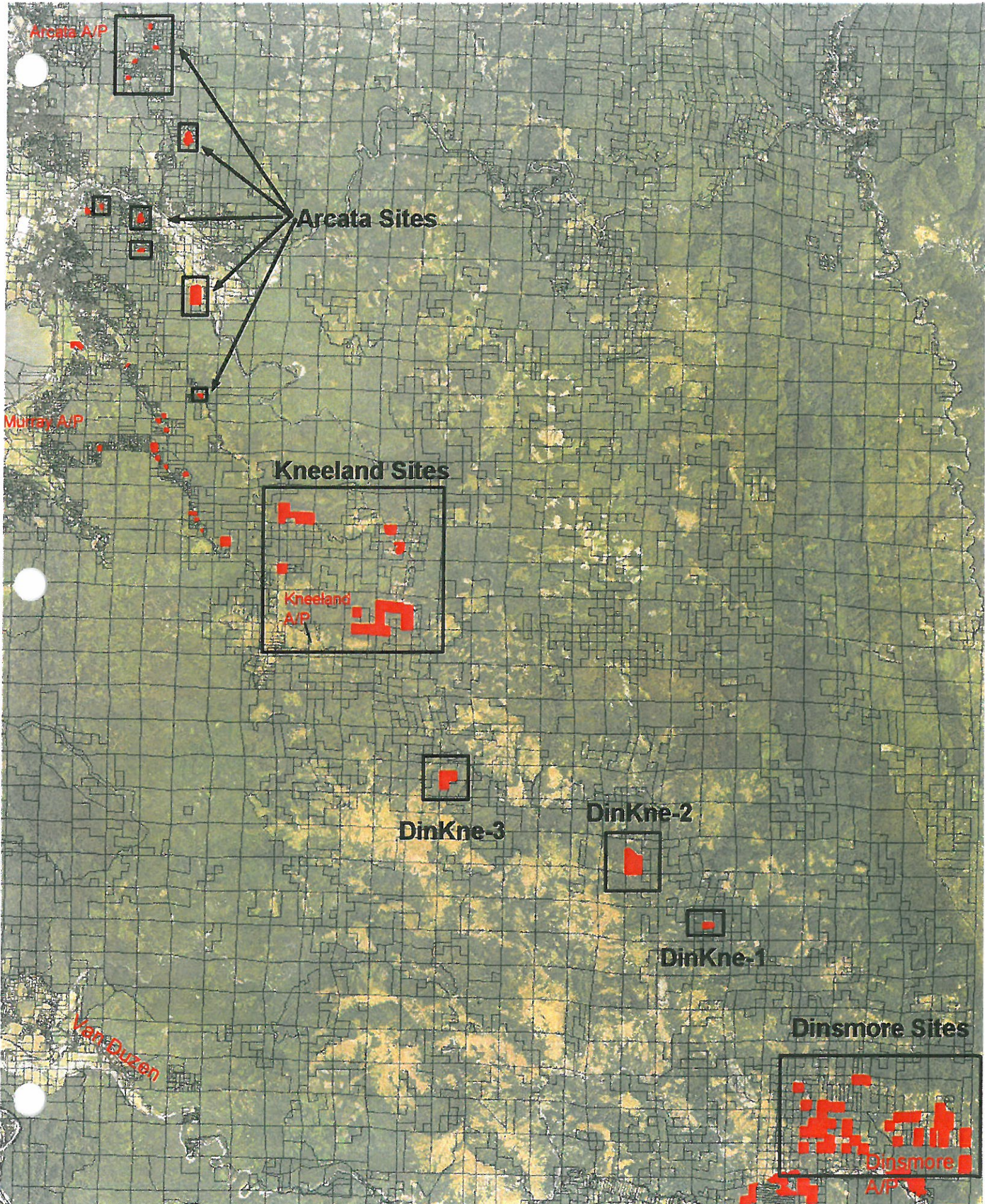
The Regional Water Quality Control Board staff selected 69 parcels in the Mad River watershed to survey with detailed aerial photographs. These properties are their top priority for follow-up enforcement action (because of the failure by owners to enroll in the agricultural compliance program), beginning with enforcement orders. Attached is the map of the properties in the Mad River that are being photographed this month. We are funding this work for the Regional Board, at a cost of \$10,300.

**HBMWD Actions**

We received confirmation from Trinity County environmental health that they will follow up with cleanup requirements at the Brett Iles property (uphill from HBMWD property on the west side of Ruth Lake). Dale Davidsen and members of his team attempted to retrieve the pump from the lake before the water level rose last month, but were unsuccessful, due to the size and weight of the pump, and the extent to which it had sunk into the mud on the lake bottom. HBMWD staff will return to the location in the spring or summer next year, when water levels drop enough to allow access to the pump, to retrieve it.

Lauren Hepler, a Bay Area reporter who writes for the San Francisco Chronicle and other publications, visited Essex and interviewed me on November 7, concerning cannabis activities in the Mad River watershed, water diversions and potential impacts on our water supplies. She also met with Scott Bauer from CDFW, and will follow up with staff at the regional Water Quality Control Board, to get their perspectives on environmental impacts from cannabis production.

Other articles on this topic are also attached.





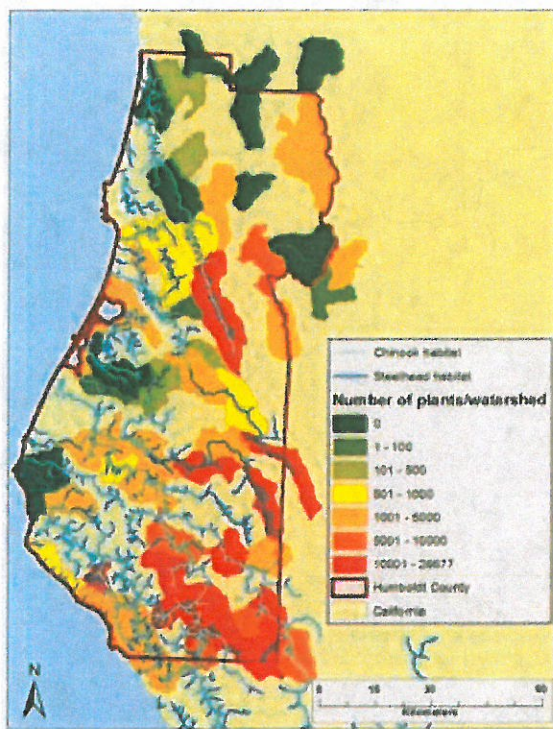
## Marijuana's hidden price: Environmental impact

*Date:* October 19, 2016

*Source:* Ithaca College

*Summary:* A new survey of marijuana grow sites in California demonstrates the potential environmental impact of marijuana farming and provides an example of the survey and analysis needed as farming expands.

### FULL STORY



This chart from Brenner's study shows the number of plants per watershed and location of critical habitat for steelhead trout and Chinook salmon.

*Credit: Image courtesy of Ithaca College*

"It's just a plant" is a common refrain from those who want to legalize the leaf, but a recent study of cannabis production argues that the environmental impact of marijuana farming must be considered -- especially as more states move toward further legalization this election season.

The study was conducted by Jake Brenner, an assistant professor in the Department of Environmental Studies and Sciences at Ithaca College, and Van Busic, a specialist at the University of California Cooperative Extension. It was published earlier this year in the journal *Environmental Research Letters*.

The study also highlights the lack of published, peer-reviewed empirical research on all aspects of cannabis agriculture, which is already a multi-billion dollar industry in the United States despite still being listed as a Schedule 1 drug by the federal government.

### **Location, location**

The amount of land and water used for growing cannabis has not traditionally been a concern, especially when compared to other agricultural products grown in California. But where the cannabis is grown has potential ecological consequences.

Brenner and Bustic examined grow sites in three northern California counties and found that their usual placement had potentially negative impacts on two threatened fish species.

That's because the sites are typically placed on remote plots of land in forested areas, many on steep slopes. Access roads need to be created and swaths of land cleared for production, regardless of whether the cannabis is grown outdoors or in a greenhouse; that increases potential for soil erosion and chemical run-off into streams in which the Chinook salmon and steelhead trout live.

The fish are also susceptible to harm from a decrease in water flow as a result of the cannabis agriculture.

"Siting grows in areas with better access to roads, gentler slopes, and ample water resources could significantly reduce threats to the environment," Brenner and Bustic write. "Future cannabis policy should take into consideration the potential for mitigating environmental impacts through land-use planning."

### **Know before you grow**

Brenner and Bustic say their study, which covers the watersheds of northern California's Humboldt County, is an example of the sort of survey and analysis that could be done -- and is necessary -- anywhere cannabis agriculture takes place.

And while California is taking efforts to encourage local governments to create land-use policies for cannabis agriculture, they argue that more research on marijuana farming needs to be done.

"Land-use science on cannabis agriculture lags behind research on other crops, but advances in the field will be crucial for predicting future cannabis expansion and moderating its impacts," they write.

That multi-billion marijuana production industry is only going to grow: This November, voters in Arizona, California, Maine, Massachusetts and Nevada will decide whether to allow their states to legalize and tax recreational marijuana; while voters in Arkansas, Florida, Montana and North Dakota will head to the polls to determine whether their states will allow medicinal uses of marijuana, joining the 25 other states that already do so.

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### **Story Source:**

Materials provided by **Ithaca College**. *Note: Content may be edited for style and length.*

## Marijuana Business Daily

October 25, 2016

### California readies landmark water rules for cannabis cultivators



**By Bart Schaneman**

California is preparing **landmark water regulations** for the state's marijuana growers to safeguard the environment and encourage conservation.

The California Department of Food and Agriculture is drafting the water-use rules, which are expected to increase growers' paperwork and costs in areas such as water storage.

Nevertheless, industry officials welcome the move, which is expected to require up to 50,000 growers to get permits to use irrigation water.

The regulations represent one of the first times a state has attempted to oversee water used for legal marijuana cultivation, which is expected to grow in California in coming years – particularly if voters approve adult-use cannabis next month.

Casey O'Neill, acting board chair for the California Growers Association, said "encouraging farmers to store more water and limit their use" is a step in the right direction.

"Nobody's a fan of regulation. But at the end of the day, industrial agriculture has not worked on the landscape. It's damaging. It's denigrating," O'Neill added. "As they draft new rules for this industry, they're sort of getting a crack at what they'd really like to do to Big Ag."

#### **Part of the licensing process**

The rules, which stem from a law signed by Gov. Jerry Brown in June, will be released in 2017 and incorporated into the state food and agriculture department's licensing process for marijuana growers in January 2018.

In addition to managing growers' use of irrigation water, the new law, **SB 837**, is intended to protect the state's water quality and wildlife habitat.

The measure – which fleshes out California's 2015 **medical marijuana regulatory act** – also will allow cannabis growers to store water for the first time. Initial indications suggest cultivators will have to spend money on water storage equipment such as tanks, as well as regulatory red tape, among other things. The exact costs will depend on the wording of the final rules.

Under SB 837, growers will be able to get small irrigation permits. The permits will allow cultivators to store up to 6 acre-feet of water during high stream flows for use when supplies are scarce. An acre-foot is equivalent to one foot of water covering an acre of land, or about 326,000 gallons.

### **Water use in the West**

Water use will be an ongoing issue in the marijuana industry – particularly in the West, where supplies are limited in states such as Arizona, California, Colorado and Nevada. A mature marijuana plant consumes an estimated six gallons of water per day.

In California, some large-scale marijuana operations have dried up streams and decimated wildlife populations, according to a 2015 report from the state's Department of Fish and Wildlife.

The new rules will direct the State Water Resources Control Board and Department of Fish and Wildlife to create a task force to assess environmental damage from marijuana cultivation.

In addition, applicants for cultivation licenses will need to identify the source of their water, among other requirements, and apply for a permit from California's new Bureau of Medical Marijuana Regulation.

The permitting process won't apply to individual patients growing medical marijuana for their own use on 100 square feet or less, or caregivers growing for five patients or less on no more than 500 square feet.

The state's food and agriculture department, meanwhile, is preparing an environmental impact report to give local and state government agencies information about the potential environmental effects linked to new statewide MMJ cultivation regulations.

### **New model for agriculture**

"We're going to have to figure out more efficient and effective methodologies for interacting with the ecosystem," said O'Neill, of the California Growers Association. "I would definitely see this as a model, or a new paradigm, for 21<sup>st</sup> century agriculture."

Matt Cohen, founder and CEO of TriQ Systems – an Oregon-based industrial greenhouse engineering firm serving cannabis growers – has operated many different MMJ businesses in California. He said he sees a lot more water being used on crops other than cannabis.

"Fair's fair as long as cannabis growers are being regulated the same as other growers," Cohen said.

Cohen added that a lot of the water issues reflect illegal marijuana grows. Modern, legal grows have their water use dialed in to make it as efficient as possible, Cohen said.

To that point, O'Neill added that the California Growers Association has been encouraging the transition to drip irrigation, heavy mulching and other water conservation practices.

"A lot of producers are already doing a pretty good job of not using tremendous amounts of water," he said. "In terms of the amount of water the industry uses, it's a drop in the bucket compared with overall agriculture industries."

Still, O'Neill doesn't make much of the argument that the water regulations fairly or unfairly target marijuana producers.

"To me, the subject is kind of a moot point," O'Neill said. "There's a lot of people who want to get fired up about that. This has not been treated as a normal agricultural product ever. Not in 75-80 years. That's all part of the whole prohibition arena. We're not going to be treated like all other ag. It's going to take time to get there."

Hezekiah Allen, executive director of the California Growers Association, views the water regulations as a way to foster commerce with a conscience. He thinks an economy becomes unsustainable when water consumption and use get out of balance.

"We're using more water than we have," he said. "Great civilizations rise and fall on how they manage water."

Allen sees cannabis cultivation as a good example of how a developing industry can transition to sustainable agriculture.

"It's a unique opportunity to do something better," he said.

*Bart Schaneman can be reached at [barts@mjbizdaily.com](mailto:barts@mjbizdaily.com)*

# New Business



## HUMBOLDT BAY MUNICIPAL WATER DISTRICT

To: Board of Directors  
From: Sherrie Sobol  
Date: November 10, 2016  
Subject: Board Vacancy

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Director Laird plans to retire prior to the end of his term. The Board has the option to hold a special election (approximate cost of \$10,000 per Elections Office) or appoint someone to fill the position. The District went through the appointment process in 2005, 2010 and 2015.

Government Code 1780 outlines the options for filling a Board vacancy. If the Board decides to appoint, it must do so within 60 days after the date on which the District is notified of the vacancy or the effective date of the vacancy, whichever is later.

- The County Elections department is notified of vacancy.
- Board authorizes posting of a Notice of Vacancy (sample attached). The notice must be posted in three or more conspicuous places within the vacated Division for at least 15 days before the Board makes an appointment. The notice can ask the potential applicants for this position to submit a letter of interest and a resume. Posting locations could include Arcata City Hall, Arcata Library, Blue Lake City Hall, District website and Facebook page, Times-Standard, and the Mad River Union.

Although not required per Code 1780, in the past the District has accepted applications for the vacancy and:

- Applications will be accepted through the 15 days of posting (per posting requirements).
- President can appoint a screening/nominating committee. The committee makes recommendations to the Board, the Board decides which candidates to interview.
- The Board can receive and review the nominating committee's recommendations and conduct interviews at a Regular or Special Board meeting.

If the Board does not appoint or call for an election within 60 days, the County Board of Supervisors shall make the appointment, or call for an election for the vacant position (per Government Code 1780)

- The County Elections Department is notified of the outcome.

**RECOMMENDATION:**

Staff recommends the Board appoint a new Director and approve a schedule for the process.





**NOTICE OF VACANCY  
BOARD OF DIRECTORS – DIVISION 5  
HUMBOLDT BAY MUNICIPAL WATER DISTRICT  
828 7<sup>TH</sup> STREET  
EUREKA, CALIFORNIA 95501**

The Humboldt Bay Municipal Water District has a vacancy, effective January 13, 2017, for its Division 5 Director. The term expires December 4, 2018, with the election for this position during November 2018. The person appointed to fill this vacancy would serve through December 3, 2018.

Anyone interested in being considered to fill the vacancy must reside within the boundaries of Division 5, which is comprised primarily of the Arcata area and extends east through Blue Lake. A map and legal description are available for inspection at the District's Eureka office. Contact the County's Election Division (445-7481) to confirm residency within HBMWD's Division 5.

If you are interested in applying for this position, please submit a letter of interest and resume to the District no later than the close of business (5 p.m.) on \_\_\_\_\_, 2016. You may mail the information to: PO Box 95, Eureka 95502-0095, deliver it directly to 828 7<sup>th</sup> Street, Eureka, or email to: office@hbmwd.com.

The Board will determine which candidates to interview for the position. If selected as a candidate, you will be notified.

An overview of the District and summary of Director responsibilities are available at the District's office or its website ([www.hbmwd.com](http://www.hbmwd.com)). For any additional information about the Director position, call 443-5018.

Paul Helliker, General Manager                      Posted \_\_\_\_\_

PLEASE KEEP POSTED UNTIL \_\_\_\_\_ (must be at least 15 days)

# Engineering



**CHANGE ORDER**PROJECT: Humboldt Bay Municipal Water District  
Collector 1&1A Rehabilitation ProjectChange Order No.: 5Date: 11/03/16Page No.: 1 of 1

CONTRACTOR: Layne Christensen Company

## DESCRIPTION OF CHANGE:

Under this Change Order, and per the email from Layne to Patrick Kaspari dated Oct. 5 16, 2016, Layne will temporarily provide the crane and an operator to assist the District in resetting the pumps in Collector 1. Hours for the operator were 23, all at an Over Time Rate of \$140/hr. Rental charges for the crane were not requested since the crane remained on site.

Adjustment of contract sum		Adjustment of contract completion dates	
Original Contract Sum	\$2,024,500.00	Original Contract Completion Date	Oct .07, 2016
Prior Adjustments	(\$111,691.00)	Prior Adjustments in Calendar Days	85
Contract Sum Prior to this Change	\$1,912,809.00	Adjustment in Calendar Days for this Change Order	0
Adjustment for this Change	\$3,220	Revised Contract Completion Date	Dec.31, 2016
Revised Contract Sum	\$1,916,029.00		

**NOTE:** CONTRACTOR WAIVES ANY CLAIM FOR FURTHER ADJUSTMENTS FOR THE CONTRACT SUM RELATED TO THE ABOVE-DESCRIBED CHANGE IN THE WORK.

RECOMMENDED BY:

Engineer

DATE: 11/03/2016

APPROVED BY:

Owner

DATE: \_\_\_\_\_

ACCEPTED BY:

Contractor

DATE: 11/03/16

**CHANGE ORDER**PROJECT: Humboldt Bay Municipal Water District  
Collector 1&1A Rehabilitation ProjectChange Order No.: 6Date: 11/03/16Page No.: 1 of 1

CONTRACTOR: Layne Christensen Company

## DESCRIPTION OF CHANGE:

Due to safety concerns, Layne has removed the existing valve stems in both Collector 1 and Collector 1A. The valve stems were originally installed in the 1960s and were no longer in use. The connections were corroded and loose and presented a falling hazard for the valve stems. A unit price for this work was included in the original bid under Additive Bid Item A-5 (Removal of old valve stems, actuator lines, vacuum lines, and other unused piping and materials). Layne's bid unit price for this work was \$650/hr, and 18 hours total were spent removing valve stems from the collectors as documented by Layne and confirmed by inspection reports.

The vertical portion of the siphon pipe in Collector 1A was directly in the way of Layne setting up their jacking platform, and would have also prevented Layne from setting up their jacks in the location required for installing new laterals in the locations as shown on the project plans. For these reasons, the down portion of the siphon pipe was torched off and removed by Layne. Per the email from Mike Hartman to Pat Kaspari on 10/31/2016, removal of the siphon pipe would also be paid for at the unit price given in Additive Bid Item A-5 (\$650/hr). Layne spent 16 hours removing the down portion of the siphon pipe in Collector 1A, as documented by Layne and confirmed by inspection reports.

In total, Layne spent 34 hours on the work required under Additive Bid Item A-5 at a unit price of \$650/hr, for a total change order amount of \$22,100.

Adjustment of contract sum		Adjustment of contract completion dates	
Original Contract Sum	\$2,024,500.00	Original Contract Completion Date	Oct .07, 2016
Prior Adjustments	(\$108,471.00)	Prior Adjustments in Calendar Days	85
Contract Sum Prior to this Change	\$1,916,029.00	Adjustment in Calendar Days for this Change Order	0
Adjustment for this Change	\$22,100.00	Revised Contract Completion Date	Dec.31, 2016
Revised Contract Sum	\$1,938,129.00		

**NOTE:** CONTRACTOR WAIVES ANY CLAIM FOR FURTHER ADJUSTMENTS FOR THE CONTRACT SUM RELATED TO THE ABOVE-DESCRIBED CHANGE IN THE WORK.

RECOMMENDED BY:

\_\_\_\_\_  
EngineerDATE: 11/03/2016

APPROVED BY:

\_\_\_\_\_  
Owner

DATE: \_\_\_\_\_

ACCEPTED BY:

\_\_\_\_\_  
ContractorDATE: 11/03/16



# CHANGE ORDER

PROJECT: Humboldt Bay Municipal Water District  
Collector 1&1A Rehabilitation Project

Change Order No.: 7  
Date: 11/03/16  
Page No.: 1 of 1

CONTRACTOR: Layne Christensen Company


**DESCRIPTION OF CHANGE:**

Under this Change Order, Layne will core and install a fourth port in Collector 1A in the location as discussed with Scott Helton in the field, pointed northwest toward Collector 1, directly between and above two B-level laterals in Collector 1A. As discussed in the 11/01/2016 construction meeting, the cost for installing the fourth port while installing the other ports will be \$8,000. This is consistent with the cost that was provided in the letter from Layne to Patrick Kaspari dated 8/16/2016. The work will include coring, providing and installing a new port, grouting the port into place, and providing a blind flange over the port. If this port is eventually used, an additional change order will be written to cover additional costs for the use of a digger head, 10-foot blank, valve, etc.

Adjustment of contract sum		Adjustment of contract completion dates	
Original Contract Sum	\$2,024,500.00	Original Contract Completion Date	Oct .07, 2016
Prior Adjustments	(\$86,371.00)	Prior Adjustments in Calendar Days	85
Contract Sum Prior to this Change	\$1,938,129.00	Adjustment in Calendar Days for this Change Order	0
Adjustment for this Change	\$8,000.00	Revised Contract Completion Date	Dec.31, 2016
Revised Contract Sum	\$1,946,129.00		

**NOTE:** CONTRACTOR WAIVES ANY CLAIM FOR FURTHER ADJUSTMENTS FOR THE CONTRACT SUM RELATED TO THE ABOVE-DESCRIBED CHANGE IN THE WORK.

RECOMMENDED BY:

  
\_\_\_\_\_  
Engineer

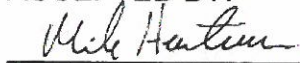
DATE: 11/03/2016

APPROVED BY:

\_\_\_\_\_  
Owner

DATE: \_\_\_\_\_

ACCEPTED BY:

  
\_\_\_\_\_  
Contractor

DATE: 11/03/16

Humboldt Bay Municipal Water District  
 Collector 1 & 1A Rehabilitation Project  
 November 4, 2016

Layne Invoice #39759-04  
 PAYMENT REQUEST #4

**INVOICE TO:**  
 Humboldt Bay Municipal Water District  
 828 Seventh Street; PO Box 95  
 Eureka, California 95502-0095

**Mailing Address:**  
 Layne Christensen Company  
 P.O. Box 677801  
 Dallas, Texas 75267-7801

**Shipping Address:**  
 Layne Christensen Company, Inc.  
 6360 Huntley Rd.  
 Columbus, Ohio 43229  
 Phone: (614) 888-6263  
 E-mail: Mike.Hartman@layne.com

**Wire Transfer/ACH Info:**  
 Bank: PNC Bank, N.A.  
 ABA: 031 207 607  
 Swift: PNCCUS33  
 Account Name: Layne Christensen  
 Account Number: 8026317547

**From:**  
 Layne Christensen Company, Inc.  
 6360 Huntley Rd.  
 Columbus, Ohio 43229  
 Phone: (614) 888-6263  
 E-mail: Mike.Hartman@layne.com

**Shipping Address:**  
 (Counter, UPS, FedEx)  
 Layne Christensen Company  
 1200 East Campbell, Suite 108  
 Richardson, Texas 75081

Item	ORIGINAL CONTRACT		THIS PERIOD		PREVIOUS PERIODS		TOTAL COMPLETED	
	Quantity	Unit Cost	Total Cost	%	AMOUNT	%	AMOUNT	%
Mobilization & Demobilization	1	LS	160,000.00	0%	\$ -	65%	\$ 104,000.00	65%
Caisson Dewatering	1	LS	131,000.00	0%	\$ -	70%	\$ 91,700.00	70%
Site set up, Well 1A	1	LS	142,000.00	100%	\$ 142,000.00	0%	\$ -	100%
Site set up, Well 1	1	LS	172,500.00	0%	\$ -	100%	\$ 172,500.00	100%
Installation of ports	5	LS	22,000.00	0	\$ -	2	\$ 44,000.00	2
F&I, Develop laterals	750	FT	1,350,000.00	0	\$ -	190	\$ 256,500.00	190
Install SS Gate Valves	5	EA	9,600.00	2	\$ 19,200.00	0%	\$ -	2
Final performance test, Well 1	1	EA	49,000.00	0%	\$ -	0%	\$ -	0%
Initial & Final perf tests, well 1A	1	LS	75,000.00	0%	\$ -	30%	\$ 22,500.00	30%
			1,900,000.00					

**Change Orders**

CO #	Description	Quantity	Unit Cost	Total Cost	%	AMOUNT
CO #1	is reflected in the items shown above					
CO #2	- added 85 days to schedule					
CO #3	- chain link fence install, rent and remove	1	LS	4,809.00	0%	\$ -
CO #4	- install additional port in Well 1	1	LS	8,000.00	0%	\$ -
CO #5	- Crane Operator Labor	1	LS	3,220.00	100%	\$ 3,220.00
CO #6	- Remove old Valve Stems/Siphon	34	HR	650.00	100%	\$ 22,100.00

**Additive Bid Items**

Description	Quantity	Unit Cost	Total Cost	%	AMOUNT
Installation of port and 10' blank		EA	39,000.00	0%	\$ -
F&I, Develop laterals		LF	1,300.00	0%	\$ -
F&I, 12" SS gate valves, with tags		EA	17,500.00	0%	\$ -
Remove and Reinstall support flooring at		EA	74,000.00	0%	\$ -
Remove old valve stems, actuator lines, etc		HR	650.00	0%	\$ -

**TOTAL PROJECT COST**

Original Contract	\$ 1,900,000.00
Change Orders	\$ 22,100.00
Additive Bid Items	\$ 91,550.00
<b>TOTAL PROJECT COST</b>	<b>\$ 1,938,129.00</b>

Respectfully Submitted: *Mike Hartman* 11/04/16  
 Layne Christensen, Remy Collector Wells

Reviewed by: *Patrick Kasparin PE*  
 GHD Engineering

Retainage (5%)	\$ 96,906.45
Net Due to Date	\$845,545.70
Previously Invoiced	\$665,351.70
<b>Due This Period</b>	<b>\$177,194.00</b>

Approved: \_\_\_\_\_  
 Humboldt Bay Municipal Water District

Engineering Item C: 1MG Reservoir Roof Replacement & Painting

Plans and Specs are located on District Website:

[www.hbmwd.com](http://www.hbmwd.com)





Job #11125093

October 13, 2016

Ryan Chairez, Maintenance Supervisor  
Humboldt Bay Municipal Water District  
828 Seventh Street  
Eureka, CA 95501

RE: Collectors 1, 2 &amp; 4 Trolley Car Inspections

Dear Mr. Chairez,

As per your request and our Agreement No. 52-TC-1 we are pleased to provide you with this report on our inspection of the trolley cars at Ranney collector wells 1, 2 and 4 at the Essex facility. This report serves as a focused engineering study to provide necessary information for maintenance and repair of the District's infrastructure and to provide input to the District's Infrastructure and Capital Improvement Plan. Our inspection was performed on August 2<sup>nd</sup>, 2016 with a follow up visit on September 23<sup>rd</sup> for additional field measurement of cable diameters. In attendance were Brian Crowell (GHD), Ryan Chairez (HBMWD) and Dale Davidsen (HBMWD) at the August 2<sup>nd</sup> visit.

Various past inspections of the trolley cars have been performed by Stephen Peacock (GHD) including reviews in 1981, 1989, 1991, 1994, 1995 and 2006. As part of the 1981 inspection, new trolley car assemblies were designed and built with a 600 pound load capacity. The wire rope cables supporting the trolleys are original, dating back to the 1960's construction of the Ranney collector wells. Based on our conversation with Ryan and Dale at HBMWD, annual maintenance and inspection of the trolleys includes application of penetrating lubrication and rust inhibitor to the wire ropes.

In general the trolley cars, cables, support connections and trolley houses were all observed to be in well maintained working condition. Photographs of various components at the three trolleys are included at the end of this report. HBMWD should continue with their maintenance and lubrication schedule to ensure good condition and continued longevity of the trolleys. Engineering inspection of the trolleys should be performed approximately every five years to help monitor the condition of the system, or as needed if changes in conditions arise.

One maintenance item that should be addressed soon is the trolley car wheels. The existing wheels consist of high density plastic. The exact age of these wheels is unknown and the wheels are a component of the system that will most easily wear over time/use. Although no immediate failure of the wheels was observed, given the unknown age, a source for replacement wheels should be contacted and it would be reasonable to replace all existing wheels at a single time in the near future. The wheel replacement date should be logged and the next replacement date should be scheduled based on the wheel manufacturer recommendation on operational life expectancy.



Another item of discussion regarding operational life expectancy is with regard to the steel wire rope cables. Literature discussing life expectancy of wire rope generally focuses on the common use of the rope in extreme corrosive environments such as naval uses, as well as in high fatigue load application such as in lifting rigging or elevators. The HBMWD trolleys do not represent this kind of use. The frequent lubrication of the ropes has significantly aided in minimizing corrosion of the ropes. The trolley car load limit as well as the cyclic elongation and shrinking of the rope due to temperature fluctuation do not represent cyclic fatigue loading of the cables as they are not loaded to anywhere near their actual yield stress. Diameter measurements were taken at each end of the ropes, at mid-span of the drapes, at loose ends and along the Crosby clip fastenings at the ends. The smallest diameter at each point was logged. Across all three trolleys this diameter varied from a minimum of 1.03 inches along the lengths of the rope, to 1.06 inches at loose ends of the ropes (unloaded portion outside the Crosby clips). This extremely small variation in diameters is indicative of ropes that have settled into their at rest tight original condition. Significant localized corrosion issues would likely become apparent by a swelling of the cable, followed by a reduction in diameter as the cable stretches due to a decrease in effective cross sectional area. Individual broken strands of wire are another common sign of significant wear in wire ropes. Neither of these types of wear were observed at the three trolleys. Therefore the wire ropes can be expected to be continuing to perform at their design capacity and factor of safety without a current need for replacement. Trolley cars currently operate without dragging or clipping the trolley houses or railing at collectors. Should the trolleys begin to contact any parts of the structures it could be a sign of anchorage movement or wire rope stretch. If this happens, we advise scheduling an immediate engineering review.

Thank you for the opportunity to assist you with this project. Please let us know when the trolley wheels are replaced so that we can add that information into our inspection files. Should you have any questions regarding our findings please do not hesitate to contact us.

Sincerely,  
GHD Inc.

A handwritten signature in black ink that reads "Brian Crowell".

Brian Crowell, SE

Senior Structural Engineer

707-443-8326



REFERENCE PHOTOS – AUGUST/SEPTEMBER 2016 INSPECTIONS



Photo 1 – Trolley #1 Trolley House



Photo 2 – Trolley #1 Rear Wheel



Photo 3 – Trolley #1 Cable Drape Exiting Trolley House



Photo 4 – Trolley #1 Cable Drape at Collector Looking Back



Photo 5 – Trolley #1 Cable Connection at Collector Well



Photo 6 – Trolley #1 Cable Connection at Collector Well



Photo 7 – Trolley #2 Rear Wheel



Photo 8 – Trolley #2 Cable Connection at Collector Well



Photo 9 – Trolley #4 Rear Wheel



Photo 10 – Trolley #4 Trolley House











# Property Report

City of Arcata Community Development Department  
736 F Street, Arcata, Ca. 95521  
(707) 822-5955

## Property Report for Assessor's Parcel Number: 507-382-001

### Property Details

Owner Name: JOHNSON MARDIANE SUCTR  
Mailing Address: 1315 HEDGE ROSE CT, MCKINLEYVILLE CA, 95519  
Site Address/City/Zip: 5900 WEST END RD ARCATA, 95521  
Latitude/Longitude: 40.909375 -124.06981  
Section/Township/Range: SECTION 16 T6N, R1E  
Parcel Size in Sq Ft (GIS Computed): 167982.9  
Parcel Size in Acres (GIS Computed): 3.86  
Recorded Document: 2013R 22798  
Google Map Link: <http://maps.google.com/maps?f=q&hl=en&geocode=&q=40.9093750991,-124.06981528&ie=UTF8&h&z=16&wloc=addr>  
Assessor Parcel Map Link: <http://co.humboldt.ca.us/assessor/maps/507-38.pdf>

### Assessment

Land Value: 124780  
Improvement Value: 243446  
Other Value: 0  
Use Code: 99  
Tax Rate Area: 1059  
Census Block: 209  
Census Tract: 12

### Zoning

Inland - Arcata Land Use Code (LUC):  
Industrial - General  
Coastal - Arcata Coastal Land Use & Development Guide (CLUDG):  
N/A

### General Plan Land Use

Inland - Arcata General Plan: Industrial - General  
Coastal - Arcata General Plan: N/A

### Special Resources/Hazards/Constraints Areas

Historical Landmark Combining Zone: None  
Neighborhood Conservation Area: Out  
Planned Development Combining Zone: No  
Plaza Area Combining Zone: No  
Wetland/Stream Combining Zone: None  
FEMA 100YR Floodplain: None  
USFWS Wetlands: None  
Alquist/Prilo Fault Zone: Out  
Within 50' of Fault Zone: Out  
Liquefaction: Moderate Liquefaction  
Matthews Dam Failure: In  
Hillside Development: None  
Urban Services Boundary: In  
Redevelopment Area: Out  
Noise Contour: Yes  
Creek Zone (Within 25' of creek): No  
Coastal Zone Boundary: Out  
Categorical Exclusion Area: Out  
Coastal Jurisdiction: Out



This map is for informational purposes only. The City of Arcata, including any employees, and subcontractors, makes no warranties, express or implied, as to the accuracy of the information contained in this report. The City of Arcata shall not be liable for any and all damages which may arise due to errors in the map and the user's reliance thereon.

Parcel attribute descriptions: [http://gis.cityofarcata.org/lexviewers/Property\\_Report\\_metadata/bk5-20-2015.pdf](http://gis.cityofarcata.org/lexviewers/Property_Report_metadata/bk5-20-2015.pdf)

# Financial



HUMBOLDT BAY MUNICIPAL WATER DISTRICT  
Statement of Fund Balances at October 31, 2016

Account Fund Balance at Month End		AT 10-31-16	AT 10-31-15	Increase/(Decrease)
<u>U.S. BANK ACCOUNTS</u>				
- Commercial Account - General Fund Account		98,782.29	174,396.27	
- Money Market Account (DWR Contract for SRF Loan)	①	297,128.39	296,689.47	
- Certificate of Deposit (DWR Contract for SRF Reserve)	②	547,610.67	547,429.20	
Subtotal		<u>943,521.35</u>	<u>1,018,514.94</u>	(74,993.59)
<u>HUMBOLDT COUNTY:</u>				
- Investment Account		2,855,835.99	2,556,749.50	
- DWFP Reserve (in accordance with Ordinance 16)	④	468,281.60	185,295.40	
- MSRA Reserve (Municipal Supplemental Reserve Account)	⑤	419,377.14	415,601.64	
- SRF Loan Payment	⑥	94,009.95	93,538.74	
- A/B Bond Tax Account		0.00	0.00	
- 1% Tax Account	③	45,624.05	423.76	
Subtotal		<u>3,883,128.73</u>	<u>3,251,609.04</u>	631,519.69
<u>L.A.I.F.</u>		1,604.99	1,597.05	7.94
Cash on Hand		650.00	650.00	0.00
<b>TOTAL CASH</b>		<u>\$ 4,828,905.07</u>	<u>\$ 4,272,371.03</u>	<u>\$ 556,534.04</u>
<b>Less: Encumbrances &amp; Reserves (Funds Dedicated for Specific Purposes and Projects)</b>				
<u>RESTRICTED</u>				
Municipal Customers PF2 Prior Year Reconciliation		(407,765.27)	(263,720.67)	
1% Tax Account	③	(45,624.05)	(423.76)	
Municipal Customer Advanced Charging - Ranney Collector 1 & 1A Rehabilitation		(1,132,162.18)	(850,251.25)	
Municipal Customer Advanced Charging - Ranney Collector 2 Rehabilitation		0.00	(152,272.48)	
Municipal Customer Advanced Charging - 1MG Domestic Reservoir Roof		0.00	0.00	
Municipal Customer Advanced Charging - Replace Ruth Bunkhouse		(195,000.00)	0.00	
DWR Reserve Fund for SRF Loan	②	(547,610.67)	(547,429.20)	
DWR Contract Payment for SRF Loan for DWFP (Drinking Water Filtration Plant-PF1 Charges from Munis)	①	(297,128.39)	(296,689.47)	
<b>SUBTOTAL RESTRICTED RESERVES (Net Position)</b>		<u>(2,625,290.56)</u>	<u>(2,110,786.83)</u>	<u>514,503.73</u>
<u>UNRESTRICTED:</u>				
<u>Board Restricted:</u>				
Paik-Nicely Development		(4,158.00)	(4,158.00)	
Sequoia Investments X, LLC (Hog Island Project)		0.00	0.00	
DWFP Reserve *	④	(468,281.60)	(185,295.40)	
MSRA Reserve (Municipal Supplemental Reserve Account)	⑤	(419,377.14)	(415,601.64)	
<u>Unrestricted Reserves</u>				
SRF Loan Payment	⑥	(94,009.95)	(93,538.74)	
Techite CalEMA Subgrantee Administrative Allowance		0.00	(30,004.63)	
Municipal Customer Accumulation for Debt Service for US Bank				
Project Loan Payment		36,659.20	36,669.44	
General Fund Reserve		(1,254,447.02)	(1,469,655.23)	
<b>SUBTOTAL UNRESTRICTED RESERVES (Net Position)</b>		<u>(2,203,614.51)</u>	<u>(2,161,584.20)</u>	<u>42,030.31</u>
<b>Total Net Position</b>		<u>(4,828,905.07)</u>	<u>(4,272,371.03)</u>	<u>556,534.04</u>

	OCTOBER RECEIPTS	YTD TOTAL AT 10-31-16	BUDGET	% OF BUDGET	YTD TOTAL AT 10-31-15
<b>MISCELLANEOUS RECEIPTS (RETURNED TO CUSTOMERS VIA PF2)</b>					
RETAIL WATER SALES	\$ 34,426.80	\$ 141,777.49	\$309,060	46%	\$ 112,680.05
SUBTOTAL RETAIL WATER SALES	\$ 34,426.80	\$ 141,777.49	\$309,060	46%	\$ 112,680.05
GENERAL REVENUES					
INTEREST (1)	8,000.49	15,325.10	\$12,000	128%	2,891.96
FCSD CONTRACT FOR MAINT. & OPERATIONS	54,815.85	107,879.90	175,000	62%	130,736.83
POWER SALES	6,014.40	25,968.98	175,000	15%	23,538.01
MISCELLANEOUS (SEE NEXT PAGE)	\$2,353.93	\$14,074.18	50,000	28%	\$ 19,606.46
SUBTOTAL GENERAL REVENUES	\$ 71,184.67	\$ 163,248.16	\$412,000	40%	\$ 176,773.26
<b>TAX RECEIPTS</b>					
1% TAXES (1)	45,407.63	45,624.05	775,000	6%	7,212.25
<b>TOTAL PF 2 CREDIT</b>	<b>\$ 151,019.10</b>	<b>\$ 350,649.70</b>	<b>\$1,496,060</b>	<b>23%</b>	<b>\$ 296,665.56</b>
<b>WHOLESALE CONTRACT RECEIPTS</b>					
INDUSTRIAL / HARBOR DISTRICT	\$0.00	\$ 642.77	\$50	1286%	\$0.00
<b>TOTAL INDUSTRIAL</b>	<b>\$0.00</b>	<b>\$ 642.77</b>	<b>\$50</b>	<b>1286%</b>	<b>\$0.00</b>
CITY OF ARCATA	\$ 96,855.56	\$ 378,198.39	\$1,257,114	30%	\$ 346,785.84
CITY OF EUREKA	231,471.16	911,149.15	3,001,244	30%	1,042,265.86
HUMBOLDT CSD	78,190.36	305,693.53	1,032,162	30%	281,737.31
MANILA CSD	6,267.32	24,624.86	82,399	30%	22,934.44
MCKINLEYVILLE CSD	78,929.01	308,171.41	1,019,529	30%	281,039.66
FIELDBROOK CSD	13,025.96	50,372.02	166,168	30%	56,383.51
BLUE LAKE	13,813.95	53,716.74	185,744	29%	55.00
<b>TOTAL MUNIS</b>	<b>\$ 518,553.32</b>	<b>\$ 2,031,926.10</b>	<b>\$6,744,360</b>	<b>30%</b>	<b>\$ 2,086,150.37</b>
A/B BOND TAXES	\$0.00	\$0.00	\$0	0%	\$0.00
<b>TOTAL RECEIPTS</b>	<b>\$ 669,572.42</b>	<b>\$ 2,383,218.57</b>	<b>\$8,240,470</b>	<b>29%</b>	<b>\$ 2,382,815.93</b>

(1) LAIF Interest for July-Sept 2016 of \$2.43. Interest on Humboldt County Accounts for April - June 2016. Investment Account \$7,998.06 and 1% Taxes Account \$656.90

## MISCELLANEOUS RECEIPTS

	OCTOBER	YEAR TO DATE
<b>Administrative</b>		
<i>Parking Lot Rent</i>	\$25.00	\$100.00
<i>Employee Telephone</i>	45.27	81.66
<i>Employee Gas</i>	44.49	80.70
<i>Retirees' Reimbursement of Health Insurance Premium</i>	697.32	8,163.63
<i>COBRA Vision Ins &amp; Admin Fee - Retiree</i>	0.00	56.79
<i>COBRA Dental Ins &amp; Admin Fee - Retiree</i>	0.00	324.72
<i>Employee on Leave Payment of Health Insurance Premium</i>	42.26	42.26
<i>Water Processing Fees</i>	30.00	90.00
<i>Hydrant Rental Deposit</i>	0.00	0.00
<i>Meter Installations</i>	0.00	0.00
<i>Retail Connection Charge</i>	0.00	0.00
<i>Mainline Connection Charge</i>	0.00	0.00
<i>Right of Way Fees</i>	0.00	0.00
<i>Special Event Liability Insurance</i>	0.00	361.50
<i>ACWA/JPIA Retrospective Premium Adjustment</i>	0.00	0.00
<i>ACWA/JPIA Insurance Claim</i>	0.00	0.00
<i>Dividend Check (Principal Life)</i>	218.94	218.94
<i>Bad Debt Recovery</i>	0.00	0.00
<i>Miscellaneous Payments for Copies &amp;/or Postage Costs</i>	0.90	56.10
<i>Diesel Fuel Tax Refund</i>	0.00	24.18
<i>Park Use Fees</i>	0.00	75.00
<i>Sequoia Investments X, LLC - Hog Island Project</i>	1,104.75	1,104.75
<i>PG&amp;E - CPUC Mandated Gas Credit</i>	0.00	96.47
<i>IRS -Refund of Payroll Tax Overpayment</i>	0.00	564.33
<i>EDD -Refund of Payroll Tax Overpayment</i>	0.00	33.15
<b>Ruth Area</b>		
<i>Use of Ruth Cabin</i>	45.00	315.00
<i>RLCSD-Water System Permit Fees</i>	0.00	2,050.00
<i>Ruth Area Water Use Permit</i>	100.00	100.00
<i>Buffer Strip Right of Way License Fee</i>	0.00	0.00
<i>Ruth Buffer Strip PG&amp;E Right of Way Fees</i>	0.00	0.00
<i>Ruth Sale of Merchantable Timber</i>	0.00	0.00
<i>Ruth Sale of Surplus Gravel</i>	0.00	135.00
<i>Don Bridge Lease</i>	0.00	0.00
<b>Miscellaneous</b>		
<i>Other</i>	0.00	0.00
<b>Total Miscellaneous Receipts</b>	<b>\$2,353.93</b>	<b>\$14,074.18</b>
<b>OTHER RECEIPTS or GRANTS</b>		
<i>Prop 84 - Ranney Collector 1</i>	0.00	0.00
<i>CalEMA Blue Lake/Fieldbrook Pipeline Crossing(Note 1)</i>	0.00	0.00



-4-  
HUMBOLDT BAY MUNICIPAL WATER DISTRICT  
TOTAL EXPENDITURES  
AT OCTOBER 31, 2016 (4 MONTHS - 33.3%)

SECTION J2a PAGE NO. 4

	OCTOBER EXPENSES	TOTAL 10/31/2016	BUDGET	% OF BUDGET	TOTAL 10/31/2015
<b>PAYROLL:</b>					
Regular	\$155,524.04	\$625,265.36	\$ 1,917,832	33%	\$ 617,364.31
Part-Time	2,766.25	14,006.88	53,600	26%	13,649.19
Overtime	4,084.88	8,601.79	35,000	25%	7,015.74
Standby	6,134.56	25,309.15	80,000	32%	24,522.87
Pay Differential	925.84	3,733.91	11,500	32%	2,973.60
Deferred Compensation	5,550.00	9,400.00	30,600	31%	5,000.00
Employee Assistance Plan	77.55	298.47	1,078	28%	306.13
Director Compensation	1,440.00	6,800.00	26,000	26%	7,920.00
Director - Secretary Fees	262.50	1,050.00	3,200	33%	1,050.00
Taxes/Benefits	106,926.94	544,085.03	1,437,324	38%	522,848.85
<b>TOTAL PAYROLL</b>	<b>\$283,692.56</b>	<b>\$ 1,238,550.59</b>	<b>\$ 3,596,134</b>	<b>34%</b>	<b>\$ 1,202,650.69</b>
<b>SERVICE &amp; SUPPLY</b>					
<b>O &amp; M</b>					
Engineering	\$2,685.50	\$12,865.25	\$ 75,000	17%	\$31,935.59
Maint., Repairs, Supplies	10,682.28	34,392.47	115,000	30%	33,394.81
TRF Maint, Repairs, Supplies	10,218.40	11,334.80	55,000	21%	9,840.37
Lab	620.00	2,095.00	13,000	16%	2,480.00
Auto Maintenance	1,983.48	9,846.96	46,000	21%	10,355.00
Radio Maintenance	964.92	2,487.81	10,500	24%	1,280.79
USGS Meter Station	0.00	0.00	7,800	0%	0.00
Ruth Lake License	0.00	1,500.00	1,500	100%	1,500.00
<b>A&amp;G</b>					
Accounting Services	2,730.00	2,730.00	\$ 30,000	9%	0.00
Legal	829.50	1,835.50	28,000	7%	6,757.50
Professional Services	445.46	1,737.34	20,000	9%	2,092.53
Insurance	0.00	55,980.50	105,000	53%	71,149.00
Telephone/Internet	3,887.19	15,901.61	46,000	35%	15,978.26
Office Building Maintenance	1,383.15	5,160.57	18,000	29%	10,265.08
Office Expense	4,077.70	22,008.17	52,000	42%	25,435.86
Travel & Conference	1,797.66	3,081.67	25,000	12%	3,064.52
Dues & Subscriptions	13,360.00	13,924.40	15,500	90%	191.40
Technical Training	983.45	1,959.85	11,000	18%	2,325.22
County Tax Fee	0.00	0.00	21,000	0%	0.00
County Property Taxes	0.00	53.60	1,100	5%	53.60
LAFCO	0.00	0.00	4,500	0%	0.00
Regulatory Agency Fees	3,018.10	7,212.39	75,000	10%	27,800.05
Ruth Lake Programs	0.00	0.00	5,000	0%	0.00
Miscellaneous	0.00	2,647.60	11,500	23%	12,435.07
<b>TOTAL SERVICE/SUPPLIES W/OUT POWER</b>	<b>\$59,666.79</b>	<b>\$208,755.49</b>	<b>\$ 792,400</b>	<b>26%</b>	<b>\$268,334.65</b>
<b>POWER</b>					
Essex Pacific Gas & Electric	\$55,276.34	\$225,344.66			\$ 205,057.08
Fuel For 2 MW Generator	2,513.59	2,513.59			4,394.36
<i>Subtotal Essex Pumping</i>	<i>\$57,789.93</i>	<i>\$227,858.25</i>	<i>561,863.00</i>	<i>41%</i>	<i>\$ 209,451.44</i>
All Other Pacific Gas & Electric	4,353.32	21,973.33	78,137	28%	20,995.96
<b>POWER EXPENSE SUBTOTAL</b>	<b>\$62,143.25</b>	<b>\$249,831.58</b>	<b>\$ 640,000</b>	<b>39%</b>	<b>\$ 230,447.40</b>
<b>TOTAL SERVICE/SUPPLIES WITH POWER</b>	<b>\$121,810.04</b>	<b>\$458,587.07</b>	<b>\$ 1,432,400</b>	<b>32%</b>	<b>\$498,782.05</b>
<b>PROJECTS, FIXED ASSETS &amp; CONSULTING SERVICES</b>					
	\$402,021.59	\$1,043,110.86	\$ 5,349,550	19%	\$ 363,469.84
<b>TOTAL OPERATING</b>	<b>\$807,524.19</b>	<b>\$2,740,248.52</b>	<b>\$ 10,378,084</b>	<b>26%</b>	<b>\$ 2,064,902.58</b>
DEBT SERVICE - SRF LOAN (1)	\$0.00	\$0.00	\$ 547,337	0%	\$273,668.48
<b>TOTAL EXPENDITURES</b>	<b>\$807,524.19</b>	<b>\$2,740,248.52</b>	<b>\$ 10,925,421</b>	<b>25%</b>	<b>\$ 2,338,571.06</b>
DEBT SERVICE - US Bank	\$0.00	\$81,094.05	\$ 162,200	50%	\$81,094.05

I. CAPITAL PROJECTS	OCTOBER EXPENSES	YTD TOTAL 10/31/2016	BUDGET	% OF BUDGET
<b>A. Projects Charged to All Customers via Price Factor 2 (BWF)</b>				
SCADA System Upgrade - Phase 2	\$2,615.50	\$2,615.50	381,100	1%
Replacement of Check Valves for 1-1, 1-2 & 1-4	0.00	33,193.60	30,750	108%
Replace Collector 2, Pump 2-2 Motor	0.00	0.00	55,000	0%
Replace 12kv Switchgear Roof	0.00	0.00	2,250	0%
Mainline Valve Replacement	0.00	0.00	100,000	0%
Electrical Shop Upgrade - Phase 2	0.00	0.00	7,250	0%
1 Mg Domestic Water Reservoir Roof & Painting	17,061.25	40,448.25	602,000	7%
Replace Chlorine Booster Pumps	7,742.30	8,482.31	12,250	69%
New Valve below 1 Mg Domestic Reservoir	0.00	0.00	30,000	0%
Replace Ruth Bunkhouse	0.00	0.00	403,500	0%
Replace Ruth HQ Septic System	0.00	0.00	15,000	0%
Plan to Replace Ruth Hydro Protective Relays	0.00	0.00	15,000	0%
<b>SUBTOTAL A:</b>	\$27,419.05	\$84,739.66	1,654,100	5%
<b>B. Projects Charged to Municipal Customers via Price Factor 2 (DWTF)</b>				
TRF SCADA System Upgrade - Phase 2	0.00	0.00	100,000	0%
Raise Containment Wall Around Sodium Hypochlorite Tank	0.00	0.00	6,500	0%
<b>SUBTOTAL B:</b>	\$0.00	\$0.00	106,500	0%
<b>C. Projects Funded by Other Sources (BWF)</b>				
Blue Lake/FGCSD River Crossing   Funded by Prop 84 & FEMA Grants	\$22,495.63	\$26,764.57	630,000	4%
Ranney Collector 1 & 1A Laterals   Partially funded through Prop 84 Grant & Adv. Charges	261,734.22	765,601.90	2,140,500	36%
<b>SUBTOTAL C:</b>	\$284,229.85	\$792,366.47	2,770,500	29%
<b>TOTAL CAPITAL PROJECTS:</b>	<b>\$311,648.90</b>	<b>\$877,106.13</b>	<b>4,531,100</b>	<b>19%</b>

Annual Capital Project Limitation (per Section 7.2.5 of Ordinance 16)  
Amount that can be charged to wholesale customers in a fiscal year.

FY2014/15 Annual Limit \$	1,191,703
Total charged to date \$	84,740
Balance Remaining \$	<u>1,106,963</u>

While the total projects expenditures are budgeted at \$5,349,550, the actual wholesale customer charges are \$2,464,600. Capital Projects C and Professional & Consulting Services C is the listing of Projects Funded by Other Sources. In addition the Ranney Collector 3 and Techite Pipeline Replacement projects have been partially funded with financing over 10 years. Only the annual debt service for these financed projects are being charged to the wholesale customers.

I. FIXED ASSETS		OCTOBER	YTD TOTAL	BUDGET	% OF
A. Projects Charged to All Customers via Price Factor 2 (BWF)		EXPENSES	10/31/2016	BUDGET	BUDGET
Essex - Replace Two Administrative Computers		\$556.43	\$3,778.83	4,500	84%
Essex - Replace Two Laptop Computers - Ruggedized		3,487.64	3,487.64	6,500	54%
Collector 3 Emergency Generator Connection		0.00	0.00	3,750	0%
Replace Ingersoll Rand Mobile Air Compressor		23,748.60	23,748.60	22,500	106%
Purchase Shop Manual & Diagnostic Equipment to service Heavy Fleet Vehicles		0.00	0.00	9,750	0%
Replace Unit 15		0.00	0.00	46,250	0%
Purchase Precision Measuring Equipment		0.00	0.00	3,500	0%
Purchase Engine Driven Air Compressor for Unit 8		0.00	0.00	2,500	0%
Replace Towable Portable Restroom		0.00	0.00	3,500	0%
Replace Warren Creek Pipeline Meter Manifold		4,583.24	4,583.24	8,000	57%
Conduit Bending Machine		0.00	0.00	8,000	0%
Eureka - Replace Computer - Part 1		2,154.55	2,154.55	2,500	86%
Eureka - Replace Computer - Part 2		2,154.54	2,154.54	2,500	86%
<b>SUBTOTAL A:</b>		<b>\$36,685.00</b>	<b>\$39,907.40</b>	<b>123,750</b>	<b>32%</b>
<b>B. Projects Charged to Municipal Customers via Price Factor 2 (DWTF)</b>					
TRF Spare Parts Inventory		\$3,269.37	\$3,269.37	4,000	82%
<b>SUBTOTAL B:</b>		<b>\$3,269.37</b>	<b>\$3,269.37</b>	<b>4,000</b>	<b>82%</b>
<b>TOTAL FIXED ASSETS PROJECTS:</b>		<b>\$39,954.37</b>	<b>\$43,176.77</b>	<b>127,750</b>	<b>34%</b>

II. MAINTENANCE PROJECTS		OCTOBER	YTD TOTAL	BUDGET	% OF
A. Charged to All Customers via Price Factor 2 (BWF)		EXPENSES	10/31/2016	BUDGET	BUDGET
Point Collector 3		\$0.00	\$4,424.54	19,250	23%
Pipeline Maintenance		0.00	0.00	13,500	0%
12KV Electric System Maintenance		0.00	0.00	4,000	0%
Mainline Meter Flow Calibration		0.00	821.16	6,000	14%
Technical Support & Software Updates to Include Control System		1,198.80	6,437.80	19,250	33%
Generator Service		34.28	34.28	3,500	1%
Hazard & Diseased Tree Removal		0.00	0.00	6,250	0%
Catholic Protection		0.00	0.00	6,500	0%
Maintenance Emergency Repair		1,550.46	1,550.46	50,000	3%
Fleet Paint Repairs		0.00	0.00	5,000	0%
AC Pipe Disposal		0.00	0.00	8,500	0%
Replace Two Doors at Essex		0.00	0.00	5,000	0%
Repair/Upgrade Line Shed 6		0.00	0.00	28,250	0%
Brush Abatement at Ruth Dam		0.00	0.00	5,540	0%
Ruth HQ Tree Removal		0.00	0.00	4,250	0%
Ruth HQ Remodel Project		0.00	0.00	4,000	0%
Ruth Hydro - Howell Bunker Valve Inspection		0.00	0.00	1,110	0%
<b>SUBTOTAL A:</b>		<b>\$2,783.54</b>	<b>\$13,268.24</b>	<b>189,900</b>	<b>7%</b>
<b>B. Projects Charged to Municipal Customers via Price Factor 2 (DWTF)</b>					
TRF - Generator Service		\$0.00	\$0.00	500	0%
TRF Limitorque Valve Retrofit Supplies - Phase 1		14,349.36	14,349.36	15,750	91%
<b>SUBTOTAL B:</b>		<b>\$14,349.36</b>	<b>\$14,349.36</b>	<b>16,250</b>	<b>88%</b>
<b>TOTAL MAINTENANCE PROJECTS:</b>		<b>\$17,132.90</b>	<b>\$27,617.60</b>	<b>206,150</b>	<b>13%</b>

III. PROFESSIONAL & CONSULTING SERVICES	OCTOBER EXPENSES	YTD TOTAL 10/31/2016	BUDGET	% OF BUDGET
<b>A. Charged to All Customers via Price Factor 2 (BWF)</b>				
Collector 1 Transformer & Electrical Evaluation	\$0.00	\$0.00	5,000	0%
Collector 1 Pump & Motor Upgrades	0.00	0.00	13,000	0%
Collector 1 Lateral Evaluation Report	0.00	0.00	5,000	0%
Crane Testing/Certification	5,180.00	6,628.43	6,500	102%
Essex Trolley/Cable Car Inspection	3,128.50	7,534.75	10,000	75%
Essex Septic System Construction Assistance	0.00	0.00	4,000	0%
Essex Mad River Cross-Sectional Survey	0.00	9,761.75	10,000	98%
Mad River Watershed Regulatory Compliance	0.00	0.00	50,000	0%
Spill Prevention Control & Countermeasure Plan Updates (Ruth Marina & Essex)	95.50	5,041.25	6,500	78%
CIP Financial Plan Update	0.00	0.00	25,000	0%
Catholic Protection Review/Inspection	8,476.00	8,476.00	9,500	89%
Techite Pipeline Replacement - Final Inspection & Report	0.00	6,600.75	9,000	73%
Dune Monitoring Program - Component of Coastal Conservancy Climate Ready Grant	0.00	2,000.00	2,000	100%
GIS/Facilities Information System	0.00	0.00	10,000	0%
GIS/Facilities Information System - Ruth	0.00	0.00	4,000	0%
Backflow Tester Training	0.00	0.00	3,000	0%
Control Software Training	0.00	0.00	15,000	0%
Technical Training	0.00	0.00	5,750	0%
Industrial Water Reservoir Condition Assessment	0.00	0.00	8,000	0%
Licensed Timber Operator	1,770.00	1,770.00	5,000	35%
FERC Dam Safety Surveillance & Monitoring Report(DSSMR)/FERC Dam Safety Review (Part 12)	0.00	0.00	3,000	0%
FERC Chief Dam Safety Engineer	0.00	0.00	10,000	0%
FERC Part 12 - GEI	6,464.50	6,464.50	10,000	65%
FERC Part 12 - Cardno	5,136.50	5,776.50	20,000	29%
FERC Part 12 Independent Consultant Inspection and Engineering Support - GHD	16.35	6,042.61	11,000	55%
Grant Applications	0.00	0.00	20,000	0%
Public Education	1,000.00	1,000.00	5,000	20%
Water Resources Planning	0.00	1,321.00	50,000	3%
<b>SUBTOTAL A:</b>	\$31,267.35	\$68,417.54	335,250	20%
<b>B. Projects Charged to Municipal Customers via Price Factor 2 (DWTF)</b>				
Chlorine System Maintenance	\$0.00	\$123.98	16,100	1%
<b>SUBTOTAL B:</b>	\$0.00	\$123.98	16,100	1%
<b>C. Projects Funded by Other Sources (BWF)</b>				
Surge Tower Replacement - CEQA, Bidding & Construction Assistance ] Funded by FEMA Grant	\$0.00	\$0.00	50,000	0%
Quagga Grant/RLCSD] CA Dept of Boating & Waterways	0.00	0.00	9,150	0%
<b>SUBTOTAL C:</b>	\$0.00	\$0.00	59,150	0%
<b>TOTAL PROFESSIONAL &amp; CONSULTING SERVICES:</b>	\$31,267.35	\$68,541.52	410,500	17%

IV. INDUSTRIAL SYSTEM PROJECTS		OCTOBER	YTD TOTAL	% OF
A. Charged to All Customers via Price Factor 2 (BWF)		EXPENSES	10/31/2016	BUDGET
- Maintain Water Supply to Industrial Pump Station (Pump Station 6) During Low-Flow Months		\$0.00	\$0.00	13,250
SUBTOTAL A.		\$0.00	\$0.00	13,250
B. Charged to Municipal Customers via PF2 (DWTF)		\$0.00	\$0.00	0
SUBTOTAL B.		\$0.00	\$0.00	0
TOTAL INDUSTRIAL SYSTEM PROJECTS:		\$0.00	\$0.00	13,250
CARRY-OVER PROJECTS FROM 2015/16				
I. CAPITAL PROJECTS		OCTOBER	YTD TOTAL	% OF
A. Charged to All Customers via Price Factor 2 (BWF)		EXPENSES	10/31/2016	BUDGET
Replace Essex Septic System		\$2,011.49	\$5,060.73	5,000
Repair/Upgrade Park Restrooms		0.00	15.51	1,700
Upgrade Ethernet Radio Modems/PLC Systems at Samoa Booster Pump Station		0.00	0.00	1,500
Repair Ruth HQ Master Bath/Laundry Room		0.00	177.53	1,500
Ruth Hydro - Install Auto Synchronizer System		0.00	0.00	4,500
SUBTOTAL A.		\$2,011.49	\$5,253.77	14,200
B. Projects Charged to Municipal Customers via Price Factor 2 (DWTF)		\$0.00	\$585.74	1,800
Remodel TRF Line Shed 5		\$0.00	\$585.74	1,800
SUBTOTAL B.		\$0.00	\$585.74	1,800
Subtotal Capital Projects		\$2,011.49	\$5,839.51	16,000
I. FIXED ASSETS				
A. Charged to All Customers via Price Factor 2 (BWF)		\$0.00	\$0.00	2,000
Install Signal Amplifier at Mt. Pierce		\$0.00	\$0.00	2,000
SUBTOTAL A.		\$0.00	\$0.00	2,000
B. Projects Charged to Municipal Customers via Price Factor 2 (DWTF)		\$0.00	\$0.00	0
SUBTOTAL B.		\$0.00	\$0.00	0
Subtotal Fixed Assets Projects		\$0.00	\$0.00	2,000

CARRY-OVER PROJECTS FROM 2015/16 Continued					
<b>II. MAINTENANCE PROJECTS</b>					
<b>A. Charged to All Customers via Price Factor 2 (BWF)</b>					
Replace Eyewash/Shower Station and Drain System				800	0%
Large Business & Fire Service Meter Calibration & Maintenance	\$0.00	\$0.00		15,000	0%
Ruth Spillway Bridge Painting	0.00	0.00		5,000	0%
<b>SUBTOTAL A.</b>	<b>\$0.00</b>	<b>\$0.00</b>		<b>20,800</b>	<b>0%</b>
<b>B. Projects Charged to Municipal Customers via Price Factor 2 (DWTF)</b>					
<b>SUBTOTAL B.</b>	<b>\$0.00</b>	<b>\$0.00</b>		<b>0</b>	<b>0%</b>
<b>Subtotal Maintenance Projects</b>	<b>\$0.00</b>	<b>\$0.00</b>		<b>20,800</b>	<b>0%</b>
<b>III. PROFESSIONAL &amp; CONSULTING SERVICES</b>					
<b>A. Charged to All Customers via Price Factor 2 (BWF)</b>					
Crane Operator Training	\$0.00	\$0.00		7,000	0%
Focused Engineering Studies	0.00	6,236.75		10,000	62%
Hydro Assessment & Analysis	6.58	14,592.58		5,000	292%
<b>SUBTOTAL A.</b>	<b>\$6.58</b>	<b>\$20,829.33</b>		<b>22,000</b>	<b>0%</b>
<b>B. Projects Charged to Municipal Customers via Price Factor 2 (DWTF)</b>					
<b>SUBTOTAL B.</b>	<b>\$0.00</b>	<b>\$0.00</b>		<b>0</b>	<b>0%</b>
<b>Subtotal Professional &amp; Consulting Projects</b>	<b>\$6.58</b>	<b>\$20,829.33</b>		<b>22,000</b>	<b>95%</b>
<b>2015/16 CARRYOVER PROJECTS TOTAL</b>	<b>\$2,018.07</b>	<b>\$26,668.84</b>		<b>60,800</b>	<b>44%</b>
<b>PROJECTS GRAND TOTAL:</b>	<b>\$402,021.59</b>	<b>\$1,043,110.86</b>		<b>5,349,550</b>	<b>19%</b>
Less Projects Funded from Other Sources (Grants/Loans/Advanced Charges/Reserves)					
	\$284,229.85	\$792,366.47		3,047,150	26%
PF2 Project Total Charged to Customers excluding Debt Service (US Bank)					
	\$117,791.74	\$250,744.39		2,302,400	11%

Humboldt Bay Municipal Water District  
 Overtime Pay  
 October 2016

	54TRF		51		52		56		58		TOTAL	
	Hours	Oct 16	Hours	Oct 16	Hours	Oct 16	Hours	Oct 16	Hours	Oct 16	Hours	Oct 16
Employee Wages, Taxes and Adjustm...												
Gross Pay	2	117.50	1.5	77.58	79.25	3,732.60	0.5	29.34	2.5	127.86	85.75	4,084.88
Overtime	2	117.50	1.5	77.58	79.25	3,732.60	0.5	29.34	2.5	127.86	85.75	4,084.88
Total Gross Pay	2	117.50	1.5	77.58	79.25	3,732.60	0.5	29.34	2.5	127.86	85.75	4,084.88
Adjusted Gross Pay	2	117.50	1.5	77.58	79.25	3,732.60	0.5	29.34	2.5	127.86	85.75	4,084.88
Net Pay	2	117.50	1.5	77.58	79.25	3,732.60	0.5	29.34	2.5	127.86	85.75	4,084.88
Employer Taxes and Contributions		0.00		0.00		0.00		0.00		0.00		0.00

# Humboldt Bay Municipal Water District Expenses by Vendor Detail

October 2016

Memo	Amount
101Netlink	
Ruth Data Link/Internet	-160.00
Total 101Netlink	-160.00
ACWA	
2017 Agency Dues	-13,360.00
Total ACWA	-13,360.00
Advanced Security Systems	
replace TRF security system battery	-129.91
document wire runs for security system wiring	-380.00
Total Advanced Security Systems	-509.91
AirGas NCN	
MIG welder supplies	-13.39
Total AirGas NCN	-13.39
Arcata Garbage	
Essex garbage	-367.34
Total Arcata Garbage	-367.34
AT & T	
Ruth HQ	-66.57
TRF	-185.89
Essex office	-53.05
Eureka office	-6.33
Ruth Hydro	-319.93
Valve Building Samoa	-88.32
Ruth HQ	
TRF	
Essex office	
Eureka office	-269.20
Ruth Hydro	
Valve Building Samoa	
Total AT & T	-989.29
AT&T	
Eureka/Essex Landline	-35.32
Arcata/Essex Landline	-35.32
Samoa/Essex Landline	-236.85
Blue Lake Meter Signal Line	-60.98
Eureka Office	-117.50
Eureka Office Alarm Line	-39.17
Samoa Booster Pump Station	-72.50
Valve Building-Samoa	-117.50
Eureka Office	-299.37
Essex Office	-593.72
TRF	-260.22
Ruth Data Line	-114.46
Total AT&T	-1,982.91
AT&T Advertising Solutions	
white page listing	-21.00
Total AT&T Advertising Solutions	-21.00
ATS Communications	
Annual Maintenance Service for Essex phone system	-1,198.80
Total ATS Communications	-1,198.80
Buckles-Smith	
SCADA Upgrade Phase 2	-2,615.50
Total Buckles-Smith	-2,615.50
Campton Electric Supply	
Essex office lighting maintenance	-258.50
Total Campton Electric Supply	-258.50



# Humboldt Bay Municipal Water District Expenses by Vendor Detail

October 2016

SECTION JDA PAGE NO. 12

Memo	Amount
Cardno, Inc FERC Part 12 Inspection Report	-5,136.50
Total Cardno, Inc	-5,136.50
Chris Merz expense reimbursement-meals for work crew Collector 1 pump install	-99.47
Total Chris Merz	-99.47
City of Blue Lake City of Blue Lake hydration station support	-1,000.00
Total City of Blue Lake	-1,000.00
City of Eureka Eureka office water/sewer	-50.76
Total City of Eureka	-50.76
Coastal Business Systems Inc. Eureka office copy and fax machine	-563.00
Total Coastal Business Systems Inc.	-563.00
Coastal Business Systems, Inc Essex office copy/fax machine color copies coverage	-303.16
Total Coastal Business Systems, Inc	-303.16
Corey Borghino auto mileage reimbursement	-63.72
Total Corey Borghino	-63.72
Crane & Equip Regulatory Training Crane inspections and certification	-5,180.00
Total Crane & Equip Regulatory Training	-5,180.00
Cresco Equipment Rentals Replace towable air compressor	-23,748.60
Total Cresco Equipment Rentals	-23,748.60
Cummins Pacific LLC equipment maintenance generator service	-9.33
Total Cummins Pacific LLC	-34.28
David Deskins expense reimbursement for safety boots	-125.05
Total David Deskins	-125.05
Don's Rent-All, Inc McKinleyville tank communication service repair	-79.95
Total Don's Rent-All, Inc	-79.95
Downey Brand Attorneys LLP legal assistance with Water Conservation Requirements	-380.00
Total Downey Brand Attorneys LLP	-380.00
Emergency Equipment Management, Inc SCBA bottle covers	-272.35
Total Emergency Equipment Management, Inc	-272.35
Eureka Oxygen hydrostatic testing of SCBA bottles cylinder rental	-82.65
Total Eureka Oxygen	-99.20
Eureka Readymix Replace Essex Septic System	-181.85
Total Eureka Readymix	-503.52
Total Eureka Readymix	-503.52

## Humboldt Bay Municipal Water District Expenses by Vendor Detail

11/02/16

October 2016

Memo	Amount
Farwest Corrosion Control District evaluation of Cathodic Protection system	-8,476.00
Total Farwest Corrosion Control	-8,476.00
Fastenal Company safety harness	-369.67
Total Fastenal Company	-369.67
Frontier Communications Ruth HQ	-50.72
Ruth Hydro/Ruth Dataline	-116.69
Total Frontier Communications	-167.41
GEI Consultants, Inc FERC Part 12 Safety Inspection	-6,464.50
Total GEI Consultants, Inc	-6,464.50
Genesis Computer Systems, Inc Replace Two Essex Electrical ruggedized notebook computers	-3,487.64
Total Genesis Computer Systems, Inc	-3,487.64
GHD (70274) Blue Lake/Fieldbrook-Glendale CSD river crossing	-19,604.63
(71525) 1 MG Reservoir Roof Replacement	-17,061.25
(71516) Collector 1 & 1A Lateral Replacement	-16,834.75
(71526) SPCC Plan	-95.50
(71524) Collector Trolley Car/Cable inspection	-3,128.50
(71530) General Engineering - Eureka	-1,241.50
(71530) General Engineering - Essex	-1,337.00
(71530) General Engineering - TRF	-107.00
Total GHD	-59,410.13
GR Sundberg, Inc Emergency blowoff line repair Humboldt Bay - Jackson Ranch Road	-1,450.68
Emergency lateral pipeline repair Fieldbrook-Glendale CSD - Glendale Drive	-2,390.53
Total GR Sundberg, Inc	-3,841.21
Hach Company replace lab test equipment	-508.23
Total Hach Company	-508.23
Hensel Hardware shop supplies	-5.35
Total Hensel Hardware	-5.35
Humboldt Fasteners safety supplies	-134.61
replace maintenance shop equipment	-161.49
Total Humboldt Fasteners	-296.10
Humboldt Redwood Company, LLC Mt Pierce Lease site	-257.63
Total Humboldt Redwood Company, LLC	-257.63
James L. Able Tree removal consult at Ruth Lake	-1,770.00
Total James L. Able	-1,770.00
James Marta & Company Preparation of GASB 45 OPEB for year ended 6/30/2016	-2,100.00
Total James Marta & Company	-2,100.00
Jasson Klingonsmith expense reimbursement for safety boots	-271.87
Total Jasson Klingonsmith	-271.87

# Humboldt Bay Municipal Water District Expenses by Vendor Detail

October 2016

Memo	Amount
John Friedenbach	
expense reimbursement for training materials - Accounting	-91.53
Total John Friedenbach	-91.53
Keenan Supply	
Replace Essex Septic System	-47.21
Total Keenan Supply	-47.21
Kernen Construction	
dispose of TRF sludgebed material	-43.25
replace Essex Septic System	-809.06
dispose of TRF sludgebed material	-100.50
replace Essex Septic System	-489.24
Total Kernen Construction	-1,442.05
Layne Christensen Company	
Collector 1 & 1A Rehabilitation Project - Progress Payment 3	-243,675.00
Total Layne Christensen Company	-243,675.00
Leadership Development Network, LLC	
Eureka office staff training	-225.00
Total Leadership Development Network, LLC	-225.00
Mario Palmero	
expense reimbursement for D4 certification renewal	-105.00
Total Mario Palmero	-105.00
McJunkin Corporation	
TRF Limitorque valve actuator spare parts	-14,349.36
Total McJunkin Corporation	-14,349.36
McMaster-Carr Supply	
tie down straps for shoring trailer	-316.02
Total McMaster-Carr Supply	-316.02
Mendes Supply Company	
Eureka office maintenance supplies	-52.60
Total Mendes Supply Company	-52.60
Mission Linen	
maintenance supplies	-69.60
Uniform Rental	-537.65
Total Mission Linen	-607.25
Mitchell, Brisso, Delaney & Vrieze	
Legal services September 2016	-279.00
Legal services September 2016	-170.50
Total Mitchell, Brisso, Delaney & Vrieze	-449.50
Napa Auto Parts	
maintenance shop supplies	-118.40
35MW generator service	-41.65
vehicle repair/maintenance	-159.04
Total Napa Auto Parts	-319.09
Network Management Services	
EssentialCare Computer Support Service for Eureka office	-394.20
Guard-IT Security Service for Eureka office	-139.99
Recover-IT Backup Solution	-124.99
Domain Management	-3.00
Umbrella- Security	-30.00
Eureka office computer assistance	-445.46
Replace two Eureka office computers	-4,309.09
Total Network Management Services	-5,446.73

# Humboldt Bay Municipal Water District Expenses by Vendor Detail

October 2016

Memo	Amount
North Coast Cleaning Services, Inc Eureka office building maintenance	-545.00
Total North Coast Cleaning Services, Inc	-545.00
North Coast Laboratories lab tests	-620.00
Total North Coast Laboratories	-620.00
North Coast Section CWEA Chlorine storage and handling training for 2 employees	-80.00
Total North Coast Section CWEA	-80.00
North Valley Labor Compliance Collectors 1 & 1A Lateral Replacement	-1,125.00
Total North Valley Labor Compliance	-1,125.00
Northern California Safety Consortium monthly membership	-50.00
Total Northern California Safety Consortium	-50.00
NTU Technologies, Inc TRF chemical supplies	-1,746.00
Total NTU Technologies, Inc	-1,746.00
Pacific Gas & Electric Co. Ruth Bunkhouse	-61.81
Eureka office	-573.57
Jackson Ranch Rectifier	-18.67
299 Rectifier	-93.86
West End Road Rectifier	-111.56
TRF	-1,907.78
Ruth Hydro Valve Control	-25.51
Ruth Hydro	-19.06
Samoa Booster Pump Station	-1,515.55
Samoa Dial Station	-25.95
Essex Pumping September 1 - 30, 2016	-55,276.34
Total Pacific Gas & Electric Co.	-59,629.66
Pacific Paper Co. Eureka office supplies	-333.99
emergency/safety supplies	-10.55
Total Pacific Paper Co.	-344.54
Parallel Infrastructure NCRA License Application Fee	-1,000.00
Total Parallel Infrastructure	-1,000.00
Paul Helliker auto mileage reimbursement to attend ACWA Leadership Group/ DWR/SWRCB Water Shortage Continge...	-318.60
expense reimbursement to attend ACWA Leadership Group/ DWR/SWRCB Water Shortage Contingency ...	-8.00
auto mileage reimbursement to attend ACWA Leadership Group/ UAG meeting in Sacramento and NCRP ...	-334.80
expense reimbursement to attend ACWA Leadership Group/ UAG meeting in Sacramento	-38.00
expense reimbursement for air travel to ACWA Conference to Anaheim	-443.46
Total Paul Helliker	-1,142.86
Pitney Bowes postage meter lease	-212.06
Total Pitney Bowes	-212.06
PumpWorks, LLC Chlorine Booster Pump Replacement	-7,742.30
Total PumpWorks, LLC	-7,742.30
R.J. Ricciardi, Inc, CPAs Annual Financial Audit FY15/16	-630.00
Total R.J. Ricciardi, Inc, CPAs	-630.00

# Humboldt Bay Municipal Water District Expenses by Vendor Detail

October 2016

Memo	Amount
Rebecca J. Moyle	
NEAC training seminars	-80.00
mail Board packet to Director	-6.45
mail FERC Part 12 Report	-16.35
Total Rebecca J. Moyle	-102.80
Recology Humboldt County	
Eureka office garbage/recycling service	-82.30
Total Recology Humboldt County	-82.30
Renner Petroleum	
cardlock fuel - pumping & control	-276.83
cardlock fuel - water quality	-276.83
cardlock fuel - maintenance	-276.83
cardlock fuel - customer service	-276.83
refill Essex bulk diesel and gasoline	-1,847.99
Diesel for 2 MW generator	-2,513.59
Total Renner Petroleum	-5,468.90
Roscoe & Associates	
Blue Lake/Fieldbrook-Glendale CSD River Crossing	-2,891.00
Total Roscoe & Associates	-2,891.00
Rosemount Analytical, Inc	
TRF Spare Parts Inventory - turbidity meter & replacement lamp	-3,269.37
Total Rosemount Analytical, Inc	-3,269.37
Ryan Chairez	
expense reimbursement for safety boots	-91.79
Total Ryan Chairez	-91.79
SCBA Safety Check, Inc	
Annual testing of SCBAs	-75.00
Total SCBA Safety Check, Inc	-75.00
Sequoia Gas	
refill Ruth bunkhouse propane	-119.67
Total Sequoia Gas	-119.67
Sierra Chemical Company	
replenish TRF chemical supplies	-8,010.17
Total Sierra Chemical Company	-8,010.17
Sitestar Nationwide Internet	
Essex Internet	-52.90
Total Sitestar Nationwide Internet	-52.90
Six Rivers Communications	
Essex radio repair	-350.00
Total Six Rivers Communications	-350.00
Staples	
Eureka office supplies	-92.29
Eureka office emergency/safety supplies	-26.62
Total Staples	-118.91
Steven A. Marshall	
material for TRF poly spill	-8.68
Essex office supplies	-20.19
lab supplies	-18.54
maintenance supplies	-32.04
Fieldbrook-Glendale CSD hydrant maintenance	-10.77
Total Steven A. Marshall	-90.22
Streamline	
Website maintenance monthly membership fee	-450.00
Total Streamline	-450.00

# Humboldt Bay Municipal Water District Expenses by Vendor Detail

October 2016

Memo	Amount
Sudden Link	
Eureka office Internet	-204.95
Total Sudden Link	-204.95
SWRCB	
Large Water System Regulatory Oversight	-2,018.10
Total SWRCB	-2,018.10
The Mill Yard	
shoring supplies	-108.87
repair TRF sample drain	-5.76
TRF maintenance	-70.98
shop supplies	-72.38
concrete repair at McKinleyville tank - Communications	-27.34
Total The Mill Yard	-285.33
Three G's	
straw for TRF trenchwork	-8.64
Total Three G's	-8.64
Thrifty Supply	
replace Warren Creek meter pipeline manifold	-4,583.24
Fieldbrook-Glendale CSD Morris Subdivision reservoir secondary connection	-1,625.28
pipeline repair supplies	-99.78
Humboldt Bay blowoff line repair	-99.78
Replace Essex Septic system	-162.46
Total Thrifty Supply	-6,570.54
Times Printing	
Director packet dividers	-840.09
Total Times Printing	-840.09
Trinity County General Services	
Pickett Peak site lease	-250.00
Total Trinity County General Services	-250.00
Trinity County Solid Waste	
Ruth HQ dump fees	-13.32
Ruth Hydro dump fees	-13.33
Total Trinity County Solid Waste	-26.65
U.S. Bank Corporate Payment System	
replace two Essex Administrative computers	-556.43
Essex First Aid supplies	-56.53
Chlorine training suits/portable shower (decontamination)	-59.74
safety labeling materials	-255.28
SCBA cylinder rack - safety equipment	-214.41
Essex office supplies	-63.08
travel expenses for Water Loss training in Redding for 2 employees	-290.24
Water Treatment Plant Operations for new employee	-111.68
conference call JTN Energy re: ReMAT & SGIA	-6.58
AWWA Conference Registration - D. Davidsen	-615.00
air travel to AWWA Conference - D. Davidsen	-693.20
deposit slips	-63.05
Total U.S. Bank Corporate Payment System	-2,985.22
USA Blue Book	
TRF meter box pump	-81.26
Total USA Blue Book	-81.26
USTI, Inc	
eBills Humboldt Bay	-11.92
eBills Fieldbrook-Glendale CSD	-15.44
Upgrade Utility Billing System	-295.00
Total USTI, Inc	-322.36

11/02/16

# Humboldt Bay Municipal Water District Expenses by Vendor Detail

October 2016

SECTION 22a PAGE NO. 18

Memo	Amount
Verizon Wireless	
Operations 1	-1.52
Superintendent	-87.13
Unit 3	-54.30
Electrician	-0.22
Operations 2	-2.12
Water Operations Supervisor	-49.03
Maintenance Supervisor	-41.96
Electrician	-13.06
Unit 6	-8.28
Unit 6	-8.29
Assistant Water Operations Supervisor	-63.60
Spare Operations	-0.22
Total Verizon Wireless	<u>-329.73</u>
West Coast Plumbing	
TRF lab sink repair	-13.25
Total West Coast Plumbing	<u>-13.25</u>
TOTAL	<u><u>-523,736.83</u></u>

Prepared by:  
Reviewed by:

## WP 440: Fraud Risks Questionnaire

Humboldt Bay  
6/30/16

In connection with the audit of the financial statements, please furnish answers to the following questions concerning the risks of fraud:

1. Are you aware of any actual instances of fraud (see question 3 below for types of fraud), any suspicions of fraud, or any allegations of fraud within the governmental unit? *No actual instances, no suspicions, nor any allegations of fraud at our District.*
  
2. What assets could be stolen (i.e. cash, inventory, supplies, equipment)? ? Has any cash, equipment, supplies or inventory been stolen? What measures have you implemented to address these specific risks of fraud? *Cash, office supplies, inventory, maintenance supplies, tools, equipment, chemicals could all be stolen. Cash – segregation of duties and reconciliations. Office supplies – restricted access. Inventory/maintenance supplies/chemicals – requisitions and physical inventory counts. Volumes of chemicals used is monitored through the SCADA system. Tools – physical inventory every year. For all categories – hiring quality personnel.*
  
3. What controls are in place to prevent any employee from,
  - a) Implementing a fictitious vendor scheme. *Segregation of duties. Requisition and Purchase Order system.*
  - b) Implementing a fictitious employee scheme. *Segregation of duties.*
  - c) Implementing a check tampering scheme. *Segregation of duties for bank reconciliation vs check writing. Independent bank account signature authority. Two signatures required for checks exceeding \$1,000.*
  - d) Skimming cash from cash receipts (cash register, cash box, and special event). *Reconciliation of cash.*
  - e) Implementing a fictitious customer or accounts receivable scheme. *Segregation of duties. Requisition and Purchase Order system.*
  - f) Falsifying employee expense reimbursement reports. *Review by supervisor and accounting staff.*
  - g) Unauthorized debit card, credit card, internet or wire transfer transactions. *Review by supervisor and accounting staff.*
  
4. Are there instances where assets were stolen in the past? *No.*
  
5. How do you make it clear to employees that fraudulent or unethical behavior will not be tolerated? *Disciplinary action listed in Employee Handbook up to and including discharge of employee.*
  
6. What controls have been implemented to prevent one person from perpetrating and concealing a fraud when segregation of duties is not possible? *Reconciliation and review by another staff.*



7. How is the governmental unit's other operating locations monitored (If more than one)? *By Supervisor(s) located at various operating locations. Eureka, Essex, Ruth.*
8. Have you reported to the audit committee (or its equivalent) about how the governmental unit's internal control serves to prevent, deter, and detect material misstatements due to fraud? *Yes. This is a routine discussion with the audit committee during our annual audit.*
9. Is the governmental unit in compliance with the laws and regulations of their federal award programs? *Yes. Audit for the fiscal year ended June 30, 2015 included Federal Single Audit Act compliance and reporting.*
10. Does the organization have written procedures for the detection, deterring and prevention of fraud? *Employee handbook. Internal controls for accounting system.*
11. How does the organization mitigate the risk of management overriding internal controls? *High quality staff and crime insurance coverage.*
12. How does the organization mitigate the risk of the preparation of fraudulent financial reports (over/understatement of account balances, improper estimates)? *Through hiring an independent auditor every year.*  
Are you aware of any off balance sheet transactions, off general ledger transactions or any transactions that have not been reported on the interim or yearend financial statements? *No.*
13. Any noncompliance with tax laws, government code, organizational policies and procedures, or any other law or regulation. *No.*
14. Has the organization purchased insurance coverage to protect assets against employee dishonesty? *Yes. Employee crime policy through the ACWA/JPIA.*
15. Are bank and investment statements and related reconciliations reviewed by someone other than the preparer? *Yes. Reviewed by Business Manager.* Are they periodically reviewed by someone outside of the accounting department to mitigate collusion and management overriding internal controls? *Yes. Subject to review during annual audit by auditor.*

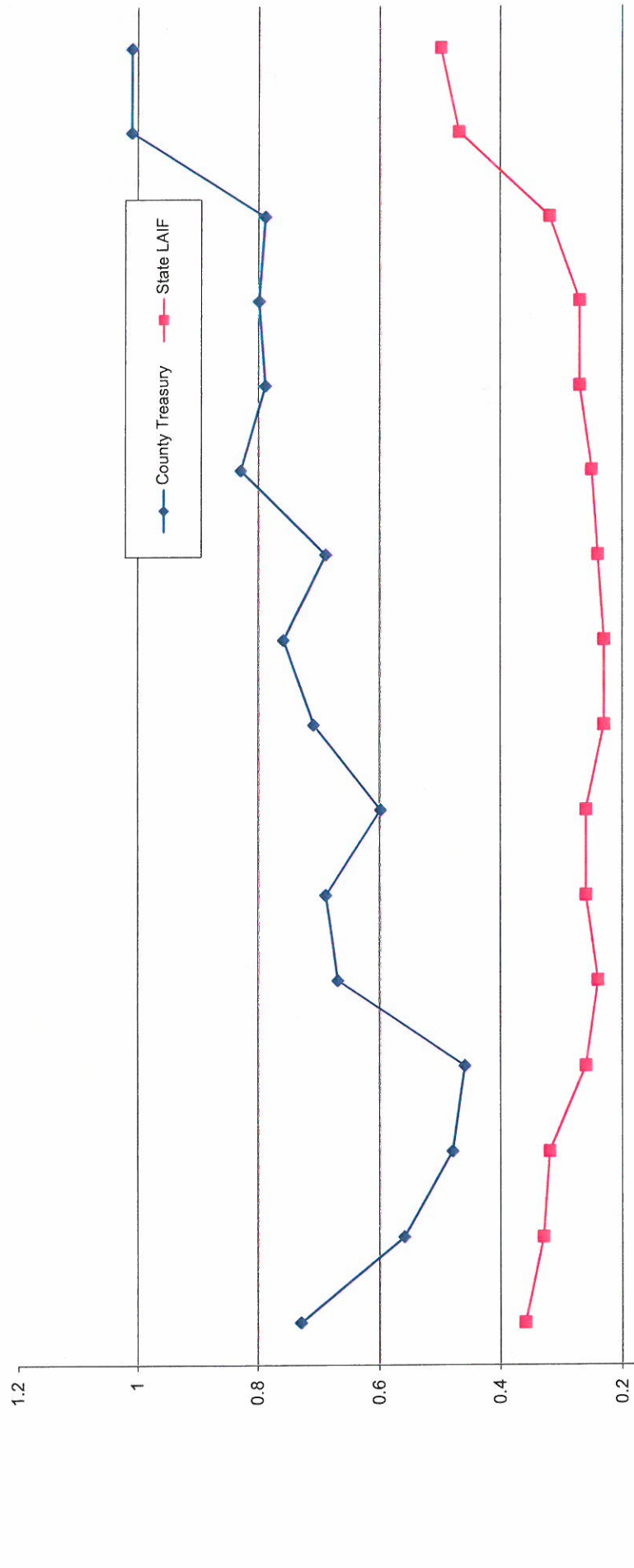
16. Were there any fraudulent or unauthorized wire transfers, EFT, ACH, credit card or debit card transactions.  
No.

The answers to the foregoing questions are correctly stated to the best of my knowledge and belief.

Name: *J. W. Fudubach*  
Title: Business Manager  
Date: 10-14-16

Name: *J. Bruce Russo*  
Title: Audit Committee, Board of Director  
Date: 10/17/16

Comparison of County Treasury and State LAIF Investment Earning Rates  
July 2012 - June 2016



J2C

H.B.M.W.D. OCT - 4 2016  
VIA EMAIL

SECTION J2C, PAGE NO. 2



## COUNTY OF HUMBOLDT

JOHN BARTHOLOMEW  
TREASURER-TAX COLLECTOR

825 FIFTH STREET ROOM 125  
EUREKA, CALIFORNIA 95501

PHONE: 707-476-2450

FAX: 707-445-7608

TOLL FREE: 877-448-6829

EMAIL: [taxinfo@co.humboldt.ca.us](mailto:taxinfo@co.humboldt.ca.us)

Subject: Interest Apportionment Rate and Other Considerations

October 4, 2016

Honorable Board Members,

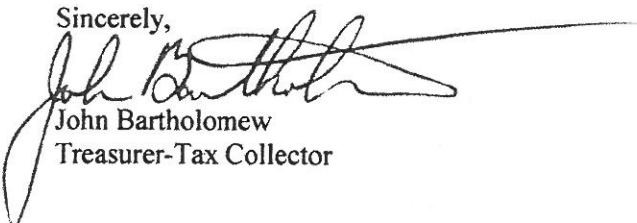
Your fund balances in the County Treasury from April through June 2016 (Fiscal 15/16 4<sup>th</sup> Quarter) earned an annualized interest rate of 1.01%. For comparison purposes, the LAIF (Local Agency Investment Fund) rate was 0.55%.

Economic data for the last quarter has been a mixed bag, the US economy and our global counterparts have struggled to maintain significant growth and ignite inflation. While there is a possibility the Federal Open Market Committee (Fed) will raise rates in December the economic data has made it tough for them to justify that move. Janet Yellen, Fed Chair, said: "we are generally pleased with how the US economy is doing." But one of the Fed's stated goals is to get inflation back to 2% before raising rates; however their projections do not see it reaching that level until 2018. Could this mean further delay? Probably. There is also apparent disagreement between voting members with Ms. Yellen saying the Committee "struggled mightily with trying to understand one another's points of view."

Another interesting fact is that the next meeting of the Feds is 4 days before the election and most believe they will not increase rates until after the election. The County Pool reflects the interest rate environment and while it is not what we would like it is still doing OK. Your apportionment rate is the same as last quarter and as always our mandated goals are Safety, Liquidity and Yield. We are closely watching events at home and abroad to make sure we invest your money wisely.

Let us know how we may be of service.

Sincerely,

  
John Bartholomew  
Treasurer-Tax Collector

Humboldt County Treasury Team:  
Amy Christensen  
Whitney Morgan

FUND BALANCES  
 Allocation Account Activity  
 July 1, 2016 - July 1, 2016  
*April - June 2016*

Account	Fund	Security ID	Current Transaction Rate	Date	Receipt	Trans. Type	Contributions / Transfer In	Disbursements / Transfer Out / Fees	Allocated Earnings	Balance
<b>Fund Participant</b>										
2710	2710	SYS	1.011	07/01/2016		AllocFee			656.90	14,049.30
			1.011				0.00	0.00	656.90	14,706.20
										<b>14,706.20</b>
2711	2711	2711	1.011	07/01/2016		AllocFee			1,054.50	418,322.64
			1.011				0.00	0.00	1,054.50	419,377.14
										<b>419,377.14</b>
3873	3873	3873	1.011	07/01/2016		AllocFee			7,998.06	3,172,837.93
			1.011				0.00	0.00	7,998.06	3,180,835.99
										<b>3,180,835.99</b>
3874	3874	3874	1.011	07/01/2016		AllocFee			1,177.47	467,104.13
			1.011				0.00	0.00	1,177.47	468,281.60
										<b>468,281.60</b>
3876	3876	3876	1.011	07/01/2016		AllocFee			164.85	2,742.24
			1.011				0.00	0.00	164.85	2,907.09
										<b>2,907.09</b>

*10% Taxes*

*MSRA Reserve*

*Investment Account*

*DWFP Reserve*

*SRF Payment*

# Operations



Memo to: HBMWD Board of Directors  
From: Dale Davidsen, Superintendent  
Date: November 3, 2016  
Subject: Essex/Ruth October Operational Report

SECTION J3a, PAGE NO. 1

### **Ruth Lake, Upper Mad River and Hydro Plant**

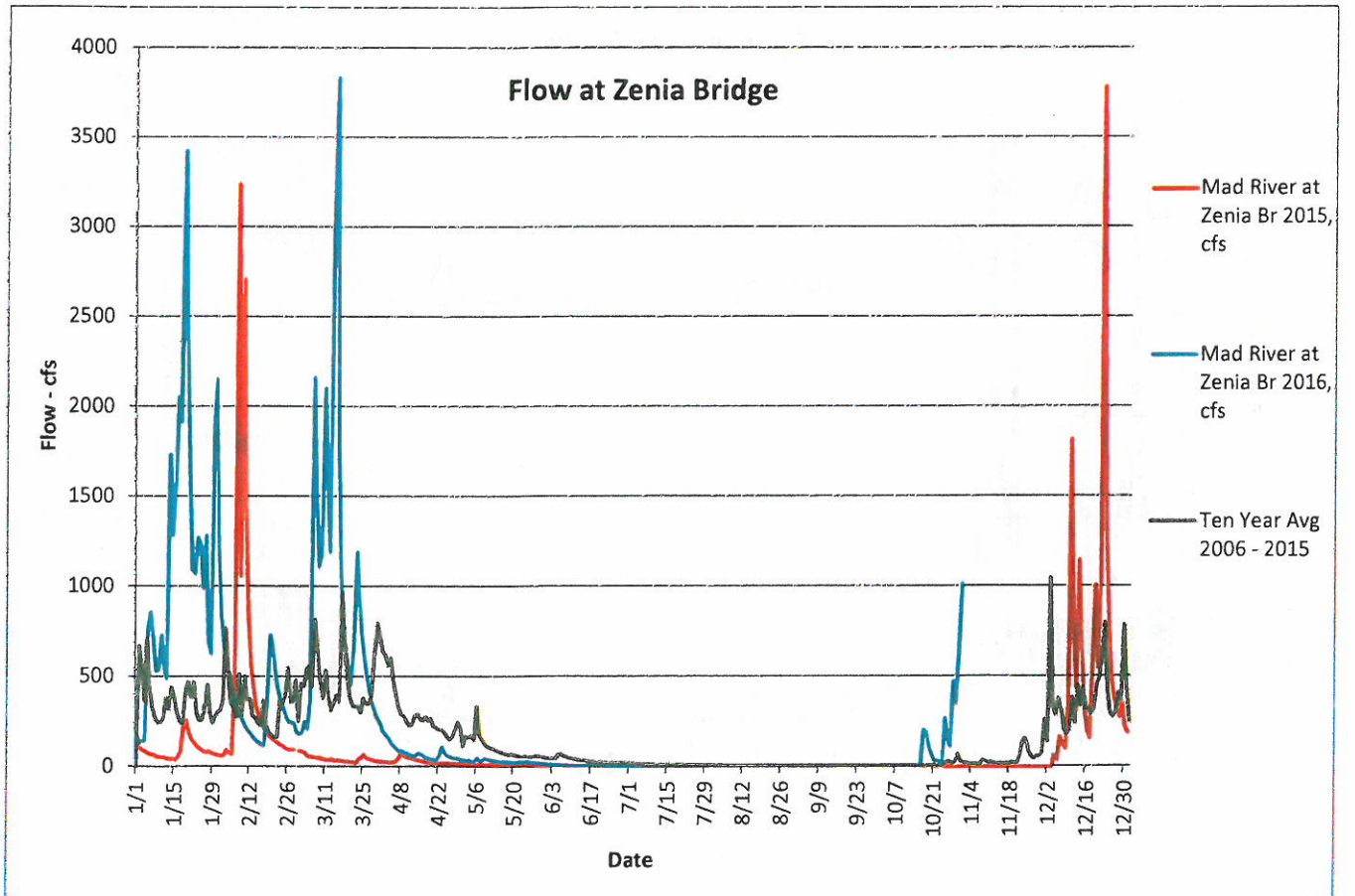
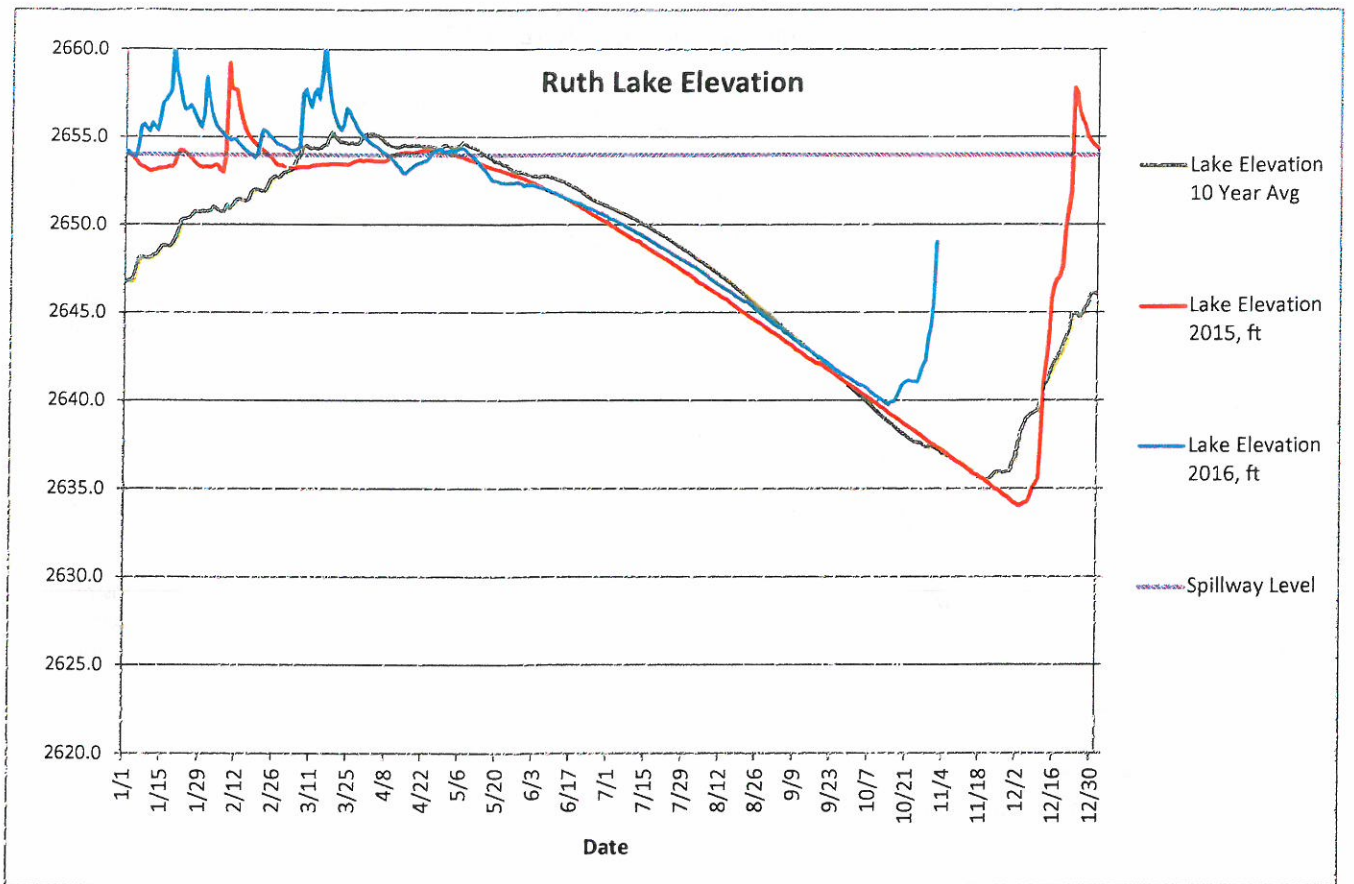
1. The high flow at Mad River above Ruth Reservoir (Zenia Bridge) during the month was measured on October 31 at 1010 cfs and the low flow was measured on October 15 at 0 cfs.
2. The conditions at Ruth Lake in October were as follows:
  - a. The lake level on October 31, 2016 was 2649.03 feet which is:
    1. 7.92 feet higher than September 30, 2016
    2. 11.59 feet higher than October 31, 2015
    3. 11.64 feet higher than the ten year average
    4. 4.97 feet below the spillway
3. We measured 15.86 inches of rain at Ruth Headquarters during the month with a high reading of 2.94 inches measured on October 14.
4. Ruth hydro power production was 151,200 kWh during the month with no shutdowns and no lost power.
5. The high discharge flow from the lake this month was 47.3 cfs on October 15<sup>th</sup> and the low release flow from the lake was 44.0 cfs on October 8<sup>th</sup>.

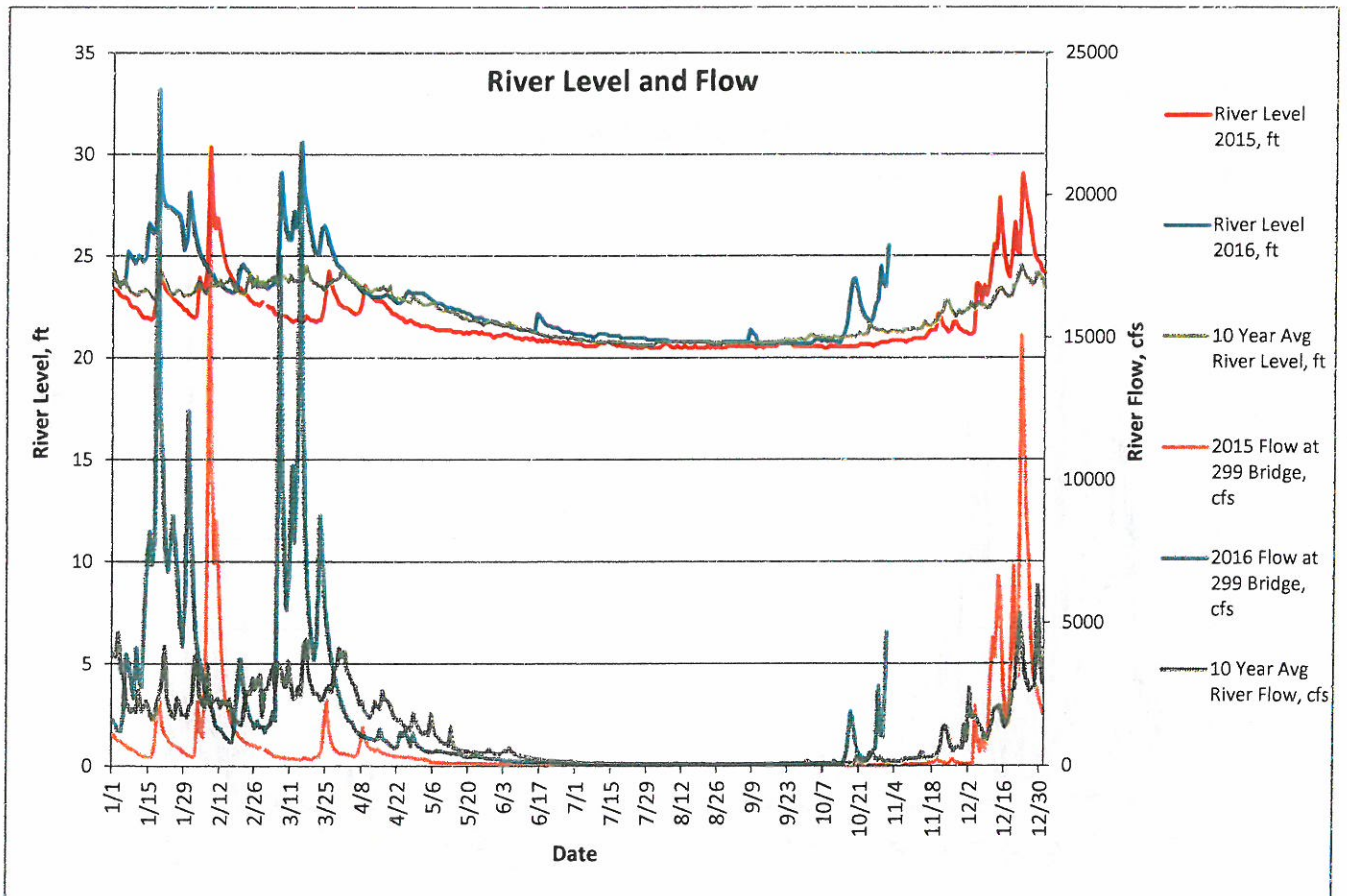
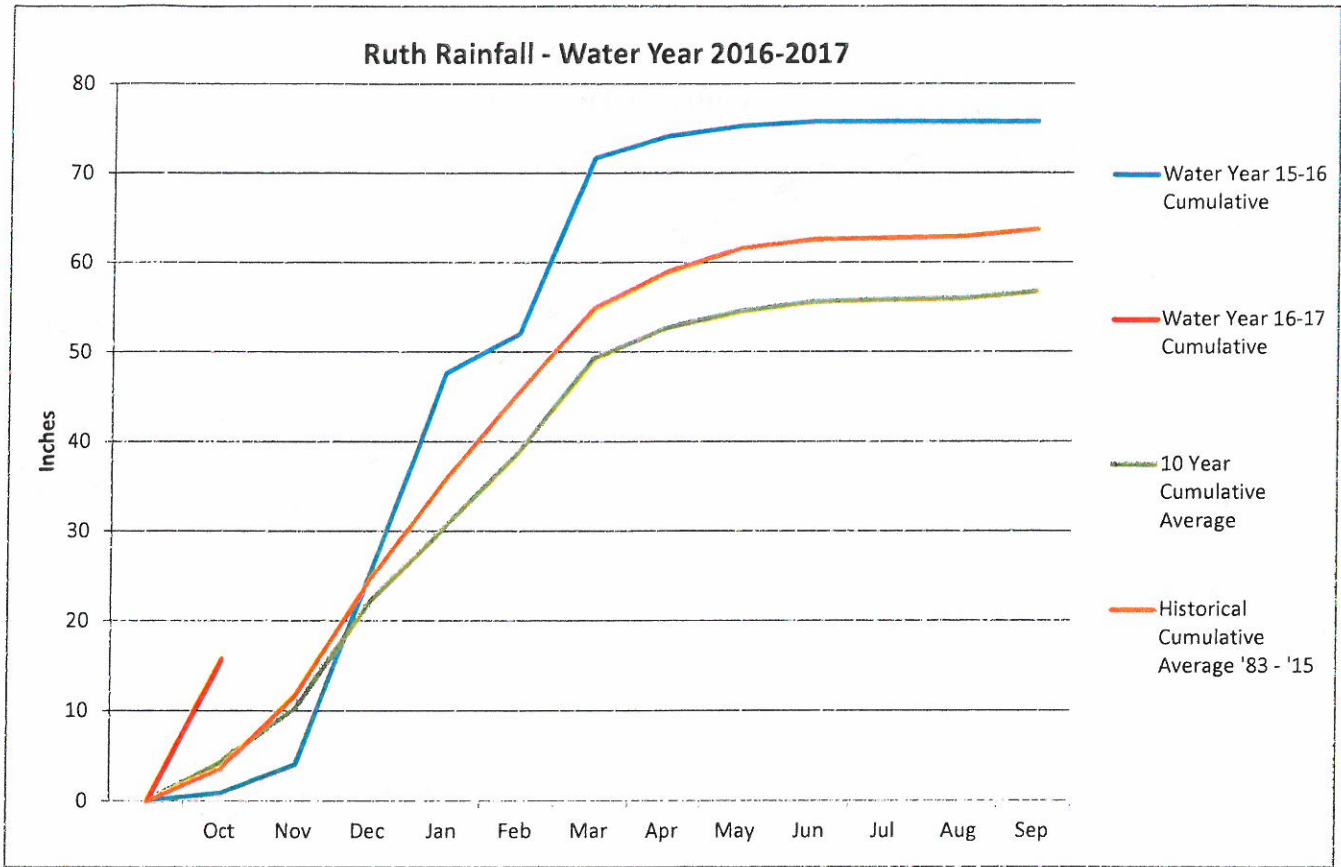
### **Winzler Control, TRF and Lower Mad River**

6. The river at Winzler Control Center reached a high recorded flow of 4660 cfs and a level of 25.5 feet on October 31<sup>st</sup>. The low river flow was on October 1<sup>st</sup> with a flow of 42 cfs and a level of 20.7 feet.
7. The domestic water conditions for October were as follows:
  - a. The monthly turbidity average was 0.10 NTU, which meets Public Health Secondary Standards.
  - b. We metered 256.193 million gallons at an average of 8.264 MGD.
  - c. The maximum metered daily municipal customer use was 9.628 MGD on October 1<sup>st</sup>.
8. The Turbidity Reduction Facility ran 12 days in October. The conditions were as follows:
  - a. Filtered water production was 257.313 million gallons.
  - b. Average monthly source water turbidity was 0.30 NTU.
  - c. Average monthly filtered water turbidity was 0.07 NTU.



9. October 6th – I sent two from the Maintenance Department to Chlorine training put on by the Humboldt Bay Fire, HazMat Team.
10. October 12<sup>th</sup> – 15<sup>th</sup> - Maintenance Crew installed pumps 1-3 & 1-2 back on Collector 1. These were 12 to 14 hour days for our crew and the Layne crane operator. As you may remember this was during the first large storm of the season, and the river was predicted to rise significantly and we needed to get these pumps installed before winter.
11. October 19<sup>th</sup>
  - a. TRF put online for the season. The process to start the TRF actually started around the 7<sup>th</sup>.
  - b. Maintenance crew relocated the yellow mine pipe from Collector 1 to 1A.
12. October 20<sup>th</sup> – Safety meetings
  - a. Slips, Trips and Fall prevention.
  - b. I went over the latest SPCC (Spill Prevention Control and Countermeasures) plan
  - c. Quarterly SB 198 - Management/Staff safety meeting.
13. October 22<sup>nd</sup> – 23<sup>rd</sup> – Over the weekend, someone cut a hole in the TRF fence and broke the window out of the boom truck and stole the large flashlight and a couple of small tools. We reported it to the Sheriffs Department, repaired the fence and replaced the window on the truck. There was no other damage at the plant.
14. October 24<sup>th</sup> - 25<sup>th</sup> – Each morning we took power hits from PG&E. These power hits took out the fuses on the Maintenance shop transformer and also the PBX board on your phone system. The PBX board was replaced on warranty, the transformer fused are \$100 ea x 3. We also were on the generator for 2-3 hrs. each day. The fuses are basically obsolete and are hard to get. We ordered them on the 25<sup>th</sup> and they are not expected to be here for another week or two.
15. October 24<sup>th</sup> - 27<sup>th</sup> – I attended the Fall AWWA spring conference. I appreciate the opportunity to attend these conferences. It is helpful to attend sessions and listen to talks from others in the industry. Thanks for supporting my attendance to these events.
16. SCADA System Upgrade Project – The SCADA project is currently out to bid. We had our non-mandatory, pre-bid project walk thru last week. The walk thru went well. Bidding closes on November 30<sup>th</sup> at 3pm. Will have bid results at the December meeting.






**Ruth Hydro Production: kW per Month**

	Historic Average: Cumulative	Ten Year Average: Cumulative	Hydro Production 2014: Cumulative	Hydro Production 2015: Cumulative	Hydro Production 2016: Cumulative	Hydro Production 2014	Hydro Production 2015	Hydro Production 2016
January	594,594	589,440	50,400	643,200	904,800	50,400	643,200	904,800
February	1,247,153	1,206,240	50,400	1,363,200	1,725,600	0	720,000	820,800
March	2,078,105	1,937,760	532,800	1,634,400	2,676,000	482,400	271,200	950,400
April	2,731,024	2,563,920	1,092,000	1,740,000	3,213,600	559,200	105,600	537,600
May	3,196,970	3,031,440	1,291,200	1,893,600	3,540,000	199,200	153,600	326,400
June	3,481,217	3,309,600	1,440,000	2,035,200	3,681,600	148,800	141,600	141,600
July	3,688,054	3,492,720	1,588,800	2,186,400	3,830,400	148,800	151,200	148,800
August	3,951,281	3,699,606	1,737,600	2,325,600	3,976,800	148,800	139,200	146,400
September	4,255,289	3,918,486	1,881,600	2,469,600	4,137,600	144,000	144,000	160,800
October	4,545,191	4,154,646	2,030,400	2,618,400	4,288,800	148,800	148,800	151,200
November	4,817,748	4,403,536	2,179,200	2,764,800		148,800	146,400	
December	5,247,303	4,858,976	2,857,600	3,261,600		678,400	496,800	

Confidential: Documents submitted under General Order 66-C, §§2.8 and PU Code §583

 <b>Pacific Gas and Electric Company</b> Purchase / Sales Invoice Invoice Number: 77916  Delivery Period Start: 09/01/2016 Delivery Period End: 09/30/2016 Invoice Date: 10/12/2016 Due Date: 10/28/2016  Log Number: 19H051 Account Code: 2320900 Meter Channel: LJ600B Contract Start: 04/10/1983	<b>From:</b> Pacific Gas and Electric Company 77 Beale Street San Francisco, CA 94105	<b>To:</b> HUMBOLDT BAY MWD P. O. Box 95 Eureka, CA 95501
	<b>Contract Manager:</b> Nancy Breckenridge Phone: 415-973-4092 Email: NJB6@pge.com	<b>Project Name:</b> HUMBOLDT BAY MWD <b>Payment Method:</b> CHECK <b>Vendor Number:</b> 1024538
	<b>Settlement Analyst:</b> Kimberly Song Phone: 415-973-5815 Fax: 415-973-9505 Email: K5SW@pge.com	<b>Contact:</b> Steve Marshall Phone: 707-822-2918 Fax: Email: ops@hbmwd.com

Payment Name	Quantity	Unit	Amount
Energy Payment 09/01/2016 - 09/30/2016	148.771	MWh	\$-4,657.22
As-Delivered Capacity Payment	123.983	MWh	\$-1,317.40
<b>Net Total</b>			<b>\$-5,974.62</b>

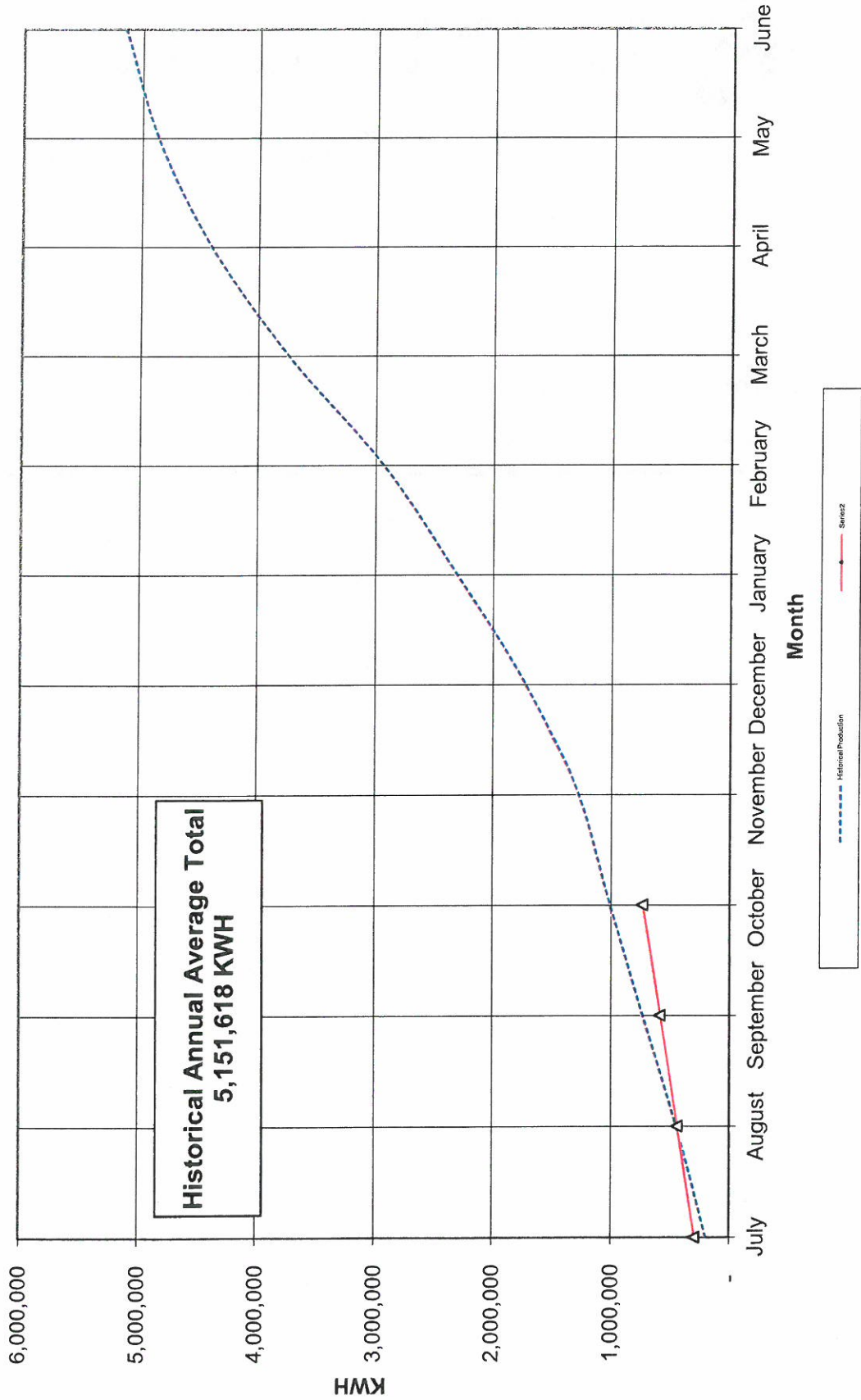
**Total Amount Due to HUMBOLDT BAY MWD on Due Date: 10/28/2016** **USD \$ 5,97**



## Humboldt Bay Municipal Water District Ruth Hydro Production Report - Since June 1983

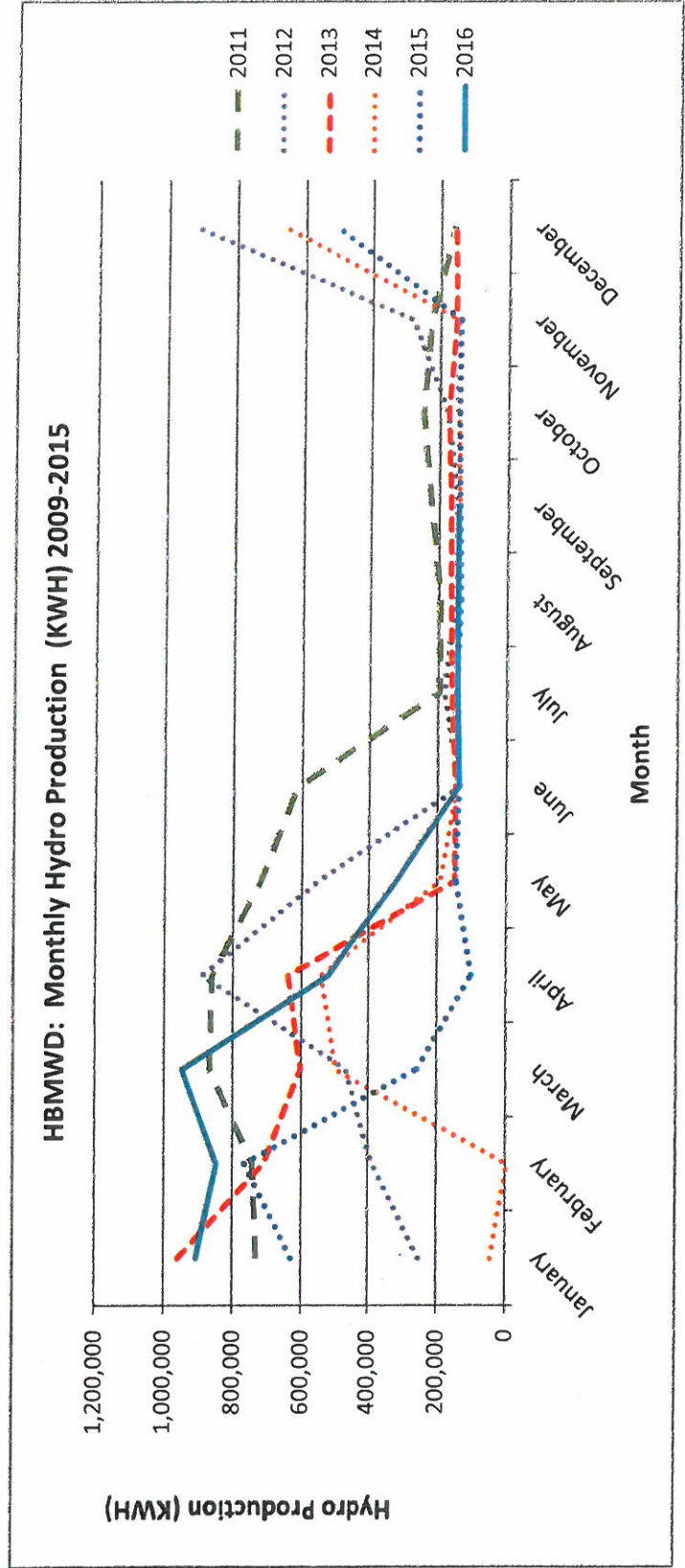
	Total Kwh Production	Production for Period Ending 9/30/2016	Average Monthly Kwh Production
On Peak	11,490,036	25,983	28,725
Part Peak	56,391,773	30,176	140,979
Off Peak	80,987,596	67,823	202,469
Super Off Peak	25,829,714	24,788	64,574
<b>Grand Total</b>	<b>174,699,119</b>	<b>148,770</b>	<b>436,748</b>
Grand Total Revenues		\$8,568,794.22	
No. of Months of Operation		400	
Average \$/Kwh		\$0.0490	

**Historical vs. Actual Cumulative Production  
Gosselin Hydroelectric Plant @ Ruth Lake  
All Data In Kilowatt Hours**



Humboldt Bay Municipal Water District  
 Monthly Hydro Electric Production (KWH) for CY2011 - 2016

Month	2011	2012	2013	2014	2015	2016
January	731,895	255,300	962,724	47,002	632,611	907,103
February	743,385	390,898	713,055	0	769,170	848,575
March	868,396	470,351	605,327	501,812	261,555	950,250
April	862,182	892,452	642,402	545,893	106,258	523,573
May	720,776	553,888	152,795	196,968	151,803	323,636
June	613,500	138,181	152,044	147,630	143,055	142,248
July	197,448	186,027	164,775	149,503	150,599	147,564
August	196,872	151,424	168,428	148,220	140,977	147,531
September	224,463	147,850	169,768	145,020	145,468	148,770
October	249,000	179,706	178,812	148,715	147,574	
November	226,807	282,768	157,195	148,816	145,196	
December	159,636	923,766	160,936	665,823	510,915	
<b>Total Annual</b>	<b>5,794,360</b>	<b>4,572,611</b>	<b>4,228,261</b>	<b>2,845,402</b>	<b>3,305,181</b>	<b>4,139,250</b>







# Management





ASSOCIATION OF CALIFORNIA WATER AGENCIES  
**JOINT POWERS**  
INSURANCE AUTHORITY

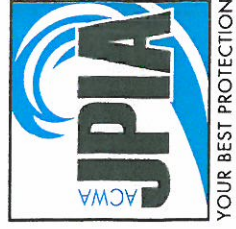


# Leadership Essentials for the Water Industry

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SELF • TEAM • AGENCY





# Certificate of Completion

## Leadership Essentials for the Water Industry

John Friedenbach

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Humboldt Bay Municipal Water District

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*Has successfully completed the Leadership Essentials Program,  
a year long process of Self Assessment, Personal Growth and Professional Development for Leaders*

Sponsored by JPIA

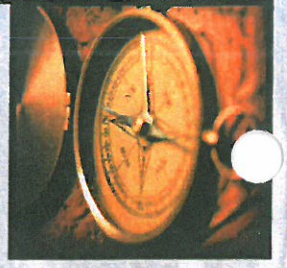
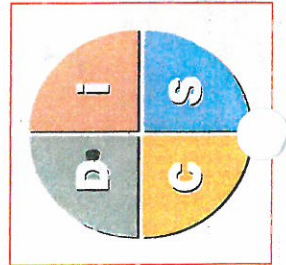
Patricia Slaven, JPIA Training Manager

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Clint Camac, Facilitator, Leadership Development Network

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*Completed November 3, 2016*



# WHY LEADERSHIP MATTERS

INCREASING EMPLOYEE ENGAGEMENT

JUNE 27, 2015



**Why Leadership Matters**  
 (Open the Gate for Others to Achieve the Involvement Level of Engagement)

**Know Yourself First**  
 (Know Your Strengths and Weaknesses; Continue to Get Balanced Feedback)

**Connecting With Others**  
 (Understand and Appreciate Yourself and Others; Adapt Your Behavior)

**Values-Based Leadership**  
 (Epitomize Integrity, Excellence, Dignity and Respect)

**Multidimensional Leadership**  
 (Stretch Your Leadership Approach; Lead like you, Only Better)

**Five Behaviors of a Cohesive Team**  
 (Be a Role Model for your Team in Overcoming the Five Dysfunctions)

**The Strategic Leader**  
 (Craft a Vision, Build Alignment, and Champion Execution)



Engagement Levels

Overlooked Factors

How To Meet Those Employment Benefits: Medical Plan, Onsite Training, Vacation, Plan

Motivate the Workforce: Proactive, Opportunities, Challenges, Autonomy, Achievement, Selfless

The Cost High

Free

Scale: 1-5



## INTRODUCTION TO DiSC®

John, have you ever wondered why connecting with some people is easier for you than with others?

Maybe you've noticed that you relate better to colleagues who focus more on accomplishing exciting goals.

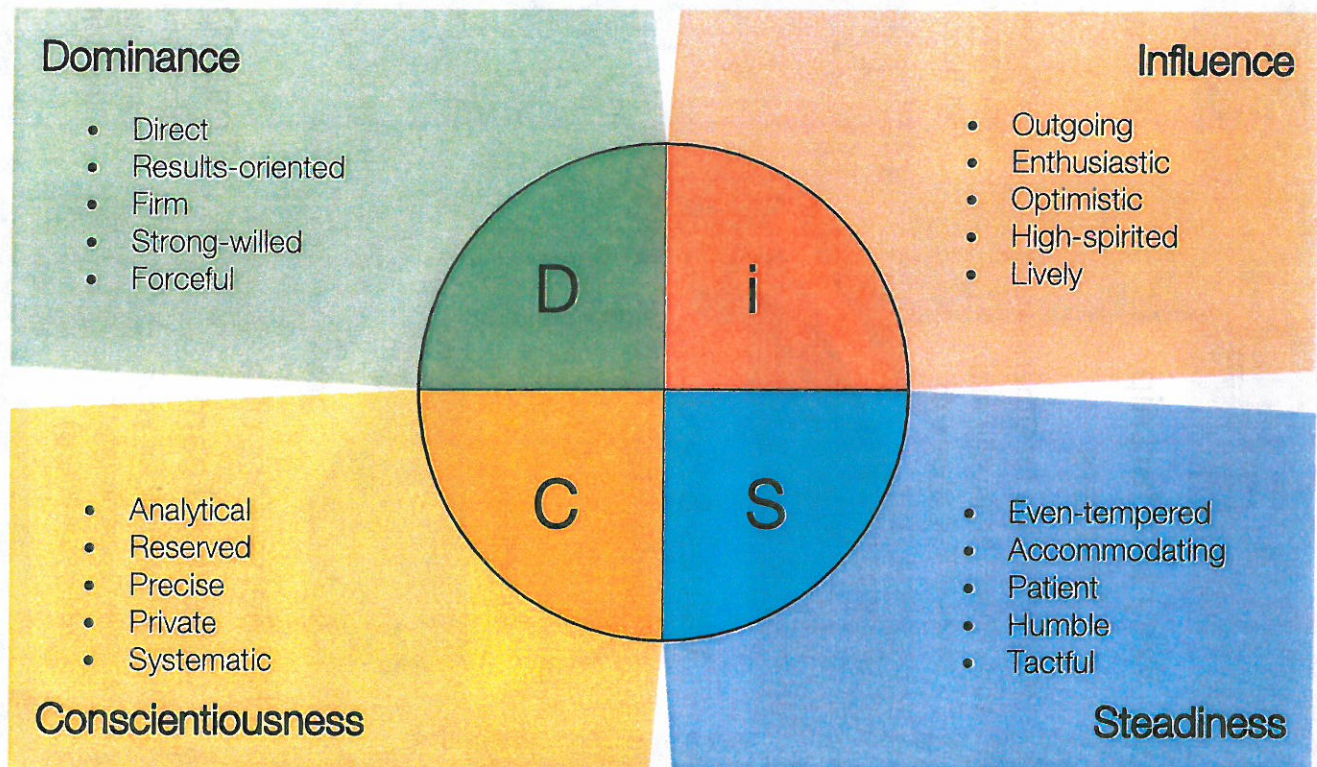
Or, maybe you're more comfortable working with those who take an energetic, bold approach than those who work at a steadier pace.

Or, perhaps you relate best to people who are more adventurous than cautious.

Welcome to *Everything DiSC Workplace*®. The DiSC® model is a simple tool that's been helping people to connect better for over thirty years. This report uses your individual assessment data to provide a wealth of information about your workplace priorities and preferences. In addition, you'll learn how to connect better with colleagues whose priorities and preferences differ from yours.

## Cornerstone Principles of Everything DiSC Workplace

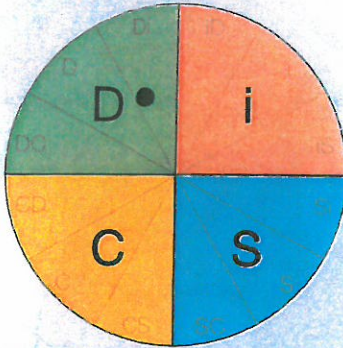
- ▶ All DiSC styles and priorities are **equally valuable** and everyone is a blend of all four styles.
- ▶ Your work style is also influenced by **other factors** such as life experiences, education, and maturity.
- ▶ **Understanding yourself** better is the first step to becoming more effective when working with others.
- ▶ Learning about **other people's DiSC styles** can help you understand their priorities and how they may differ from your own.
- ▶ You can improve the quality of your workplace by using DiSC to build more **effective relationships**.



YOUR DiSC® STYLE & DOT

Your Dot Tells a Story

Your DiSC Style is: Di



Because you have a Di style, John, you're probably active and push yourself to reach ambitious goals. You maintain a fast pace, and you may have little patience for things that stand in the way of progress. Since you have a need for variety, you're often eager to seize new opportunities, even if it means changing directions.

Most likely, you want to have the freedom to set your own course. While you're probably quite collaborative at times, you want to reserve the right to decide how to spend your time and energy. You tend to be frustrated by situations that require you to jump through a lot of hoops, and you dislike policies and procedures that get in the way of creativity and flexibility.

Because you're ambitious, you're probably attracted to important assignments that will allow you to maximize your talents. You may be happy to accept responsibility, and you probably enjoy opportunities to be in charge. While you have the ability to create forward momentum in a group, you may prefer to delegate more in-depth responsibilities to others.

You tend to be fairly bold and adventurous. Because you prefer free-flowing processes, you may sometimes struggle with situations that require you to be more methodical or systematic. Most likely, you're open to taking risks, and you're willing to make decisions based on your gut instinct when necessary. As a result, you may find your goals and decisions challenged by more analytical colleagues.

Like others with the Di style, you probably make the connections you need to get results. Most likely, you're candid and self-confident, and your persuasive powers may allow you to work toward your goals by gaining the buy-in of others. You may have discovered that tapping into other people's ideas brings a better chance of success, so you're likely to welcome brainstorming opportunities.

When conflict arises, you probably approach it proactively in an attempt to resolve it quickly. However, when put under a great deal of pressure, you may sometimes become combative. While unleashing your frustration may seem cathartic to you, it can make others very uncomfortable.

Because you want to be heard, you tend to push when you feel that your opinions are overlooked or marginalized. You may even run the risk of becoming too insistent if you feel your ideas aren't appreciated or accepted. While you expect some public acknowledgement of your accomplishments, you probably don't require a lot of gushing praise. And because you value recognition yourself, you may be generous with your compliments to others.

John, like others with the Di style, your most valuable contributions to the workplace may include your high energy, your drive to get results, and your ability to inspire others. In fact, these are probably some of the qualities that others admire most about you.



## YOUR MOTIVATORS & STRESSORS

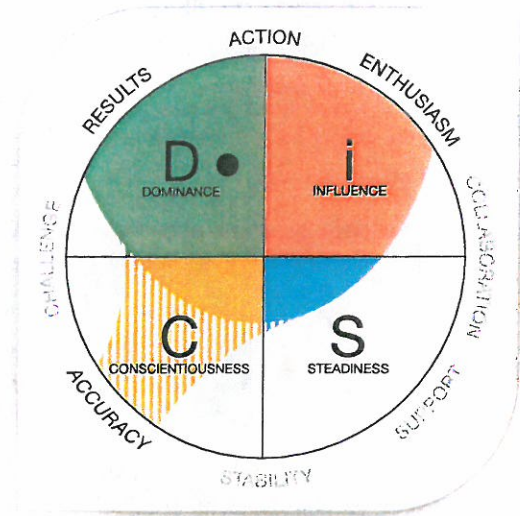
### What Motivates You?

Different people find different aspects of their work motivating. Like other people with the Di style, you probably seek opportunities to achieve impressive results in high-energy environments. Most likely, you have an entrepreneurial spirit and enjoy competitive challenges. Because you like having influence, you may be attracted to leadership roles. However, you may also like working in an environment that enables you to focus on precision, and this is less typical of the Di style.

You probably enjoy many of the following aspects of your work:

#### MOTIVATORS

- Initiating change
- Having authority
- Achieving immediate results
- Promoting innovation
- Taking risks
- Sharing enthusiasm for ideas
- Keeping things moving
- Emphasizing accuracy and precision
- Catching errors or flaws in design



*What do your priorities say about what motivates you and what you find stressful?*

### What Is Stressful for You?

Then there are those aspects of your work that are stressful for you. Because you tend to move quickly and tackle ambitious projects, you may become annoyed if you feel people or procedures are wasting your time. You may find it frustrating if your innovative plans get stalled out by other people's hesitancy or overanalysis. In addition, you may get tense in situations where your autonomy or power is limited. At the same time, unlike others with the Di style, it may be stressful for you if you're not allowed to achieve the precision you value.

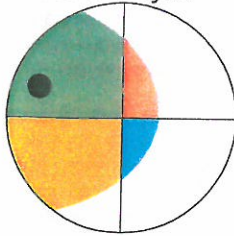
Many of the following aspects of your work may be stressful for you:

#### STRESSORS

- Following strict rules or protocols
- Having to moderate your pace
- Having little independence or control
- Partnering with overly cautious or indecisive people
- Being forced to give up on bold ideas
- Having your ideas or authority challenged
- Working slowly toward long-term goals
- Making decisions without time for analysis
- Being wrong or unprepared

PERSONALIZED STYLE INDEX:  
THE D STYLES

## DC Style



Challenge  
Results  
Accuracy

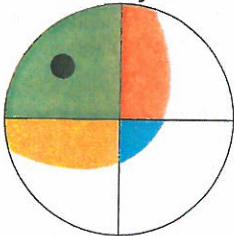
**Goals:** Independence, personal accomplishment  
**Judges others by:** Competence, common sense  
**Influences others by:** High standards, determination  
**Overuses:** Bluntness; sarcastic or condescending attitude  
**Under pressure:** Becomes overly critical  
**Fears:** Failure to achieve their standards  
**Would increase effectiveness through:** Warmth, tactful communication

John, people with the DC style prioritize Challenge, so they want to explore all options and make sure that the best possible methods are used. As a result, they may be very questioning and skeptical of other people's ideas. You aren't as questioning as they are, so you may have trouble relating to their challenging approach.

In addition, they also prioritize Results, so they're often very direct and straightforward. When they're focused on the bottom line, they may overlook the feelings of others. You also tend to be driven, so you can probably relate to their desire for results.

Finally, those with the DC style also prioritize Accuracy. Because they want to control the quality of their work, they prefer to work independently, and they may focus on separating emotions from facts. Since you also like to maintain high standards, you can probably relate to their objective, analytical approach.

## D Style



Results  
Action  
Challenge

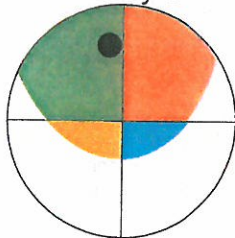
**Goals:** Bottom-line results, victory  
**Judges others by:** Ability to achieve results  
**Influences others by:** Assertiveness, insistence, competition  
**Overuses:** The need to win, resulting in win/lose situations  
**Under pressure:** Becomes impatient and demanding  
**Fears:** Being taken advantage of, appearing weak  
**Would increase effectiveness through:** Patience, empathy

People with the D style are strong-willed individuals who prioritize Results. Because they want to make their mark, they constantly look for new challenges and opportunities. Since you share their determination, you can probably relate to their competitiveness.

In addition, they also prioritize Action, so they often focus on achieving their goals quickly and forcefully. Since they tend to be very fast-paced, they like it when people cut to the chase. Since you also tend to create momentum, their bold style probably resonates with you.

Furthermore, those with the D style also prioritize Challenge. Because they want to control outcomes, they're often questioning and independent-minded. Since you probably prefer to strike more of a balance when considering new ideas, you may become frustrated by their challenging approach.

## Di Style



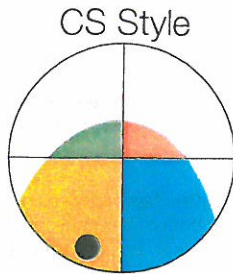
Action  
Results  
Enthusiasm

**Goals:** Quick action, new opportunities  
**Judges others by:** Confidence, influence  
**Influences others by:** Charm, bold action  
**Overuses:** Impatience, egotism, manipulation  
**Under pressure:** Becomes aggressive, overpowers others  
**Fears:** Loss of power  
**Would increase effectiveness through:** Patience, humility, consideration of others' ideas

People with the Di style prioritize Action, and they probably come across as adventurous and bold. Because they grow bored easily, these individuals often seek out unique assignments and leadership positions. Since you also like to maintain a fast pace, you can probably relate well to their high-energy approach to work.

In addition, they also prioritize Results, so they often work to accomplish their goals rapidly. While they are competitive, they can also use charm to persuade others to help them succeed. Because you are also results-oriented, you may respect their drive to succeed.

Finally, those with the Di style also prioritize Enthusiasm, so they may come across as charming and fun because of their high energy. They probably use their excitement to inspire others and to create a lively environment. Because you also tend to be positive and expressive, you probably appreciate their dynamic approach.

PERSONALIZED STYLE INDEX:  
THE C STYLES

CS Style

Stability  
Accuracy  
Support

**Goals:** Stability, reliable outcomes

**Judges others by:** Precise standards, orderly methods

**Influences others by:** Practicality, attention to detail

**Overuses:** Traditional methods, sense of caution

**Under pressure:** Withdraws, becomes hesitant

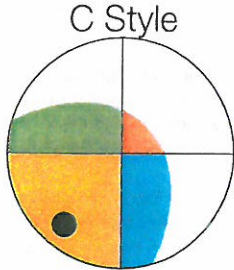
**Fears:** Emotionally charged situations, ambiguity

**Would increase effectiveness through:** Showing flexibility, being decisive, showing urgency

John, people with the CS style prioritize Stability, so they probably come across as orderly and precise. Since they prefer to be well-prepared, they tend to avoid taking risks or making rapid changes. Because you're probably more adventurous than they are, you may find it hard to relate to their cautious approach.

In addition, they also place a high priority on Accuracy, so they tend to spend time refining their ideas before moving forward. Most likely, they rely on data before making decisions and tend to take an objective approach. Because you share their tendency to value accurate outcomes, you may appreciate their careful, methodical approach.

Furthermore, those with the CS style also value Support, and they're usually willing to help when their expertise is needed. They also tend to be even-tempered and patient with both people and difficult situations. You might find it difficult to relate to their accommodating approach.



C Style

Accuracy  
Stability  
Challenge

**Goals:** Accuracy, objective processes

**Judges others by:** Expertise, systematic processes

**Influences others by:** Logic, exacting standards

**Overuses:** Analysis, restraint

**Under pressure:** Overwhelms others with logic, becomes rigid

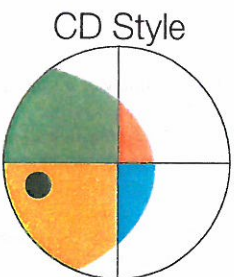
**Fears:** Being wrong, strong displays of emotion

**Would increase effectiveness through:** Acknowledging others' feelings, looking beyond data

People with the C style place a high priority on Accuracy. Because they want to ensure superior results, they tend to analyze options rationally and separate emotions from facts. Since you tend to share their logical approach, you probably relate to their emphasis on creating sound solutions.

In addition, they also prioritize Stability. Since they tend to value follow-through and restraint, they're uncomfortable with quick or risky decisions and prefer to take time to make an informed choice. Because you tend to push for bold ideas and immediate results, you may grow frustrated with their cautious approach.

Furthermore, people with the C style also prioritize Challenge. In their quest to find the most streamlined or productive method of completing their tasks, they may openly question ideas and point out flaws that others may have missed. Since you're probably more interested in making forward progress, you may think their skeptical approach is a bit cumbersome.



CD Style

Challenge  
Accuracy  
Results

**Goals:** Efficient results, rational decisions

**Judges others by:** Competence, use of logic

**Influences others by:** Strict standards, resolute approach

**Overuses:** Bluntness, critical attitude

**Under pressure:** Ignores people's feelings, moves ahead independently

**Fears:** Failure, lack of control

**Would increase effectiveness through:** Cooperation, paying attention to others' needs

People with the CD style prioritize Challenge and may come across as skeptical and determined. Most likely, they won't accept ideas without asking a lot of questions, and they like to uncover problems that could affect results. You tend to be more accepting, so you may find it hard to relate to their critical, questioning approach.

In addition, they also prioritize Accuracy, and they focus on thinking logically to create the best solutions. They tend to avoid letting their emotions get in the way of making rational decisions. Because you share their analytical approach, you may find it easy to relate to their emphasis on objectivity and logic.

Furthermore, those with the CD style also value Results and tend to be determined to deliver quality outcomes efficiently. Most likely, they're also willing to take charge of projects when necessary, and they can usually be counted on to keep things on track. Since you tend to share their interest in efficient results, you likely appreciate their determination to succeed.

## INTRODUCTION

*Everything DiSC Work of Leaders*® provides a simple, compelling process that helps leaders get real results. The program improves self-awareness in key areas that will help you get better outcomes as a leader.

**Where did Work of Leaders come from?** This program is based on a four-year development effort that began by analyzing and distilling the work of leadership researchers from the last three decades. With the help of 300 subject matter experts from more than 150 organizations, we identified a specific set of leadership best practices.

**How do we define leadership?** Work of Leaders approaches leadership as a one-to-many relationship, as opposed to the one-to-one relationship of management.

**How does leadership connect to DiSC®?** Your DiSC style influences how you approach each of the steps of the process. DiSC doesn't imply that you can or can't do any of the steps. It simply tells you how much energy will be required to do the different aspects of each step.

**How is this different from other DiSC profiles?** Unlike other DiSC reports, which emphasize understanding the differences between people, Work of Leaders focuses on understanding how your tendencies influence your effectiveness in specific leadership situations.

## Cornerstone Principles

- ▶ Work of Leaders focuses on tangible steps directed at **leading a group or organization** toward desired outcomes.
- ▶ The concepts in this report are relevant for **leaders at all levels**.
- ▶ Your leadership is influenced by a **variety of factors** such as character, life experiences, cognitive abilities, and maturity.
- ▶ All four DiSC styles **contribute to leadership success**, and most likely your strengths reflect **your own DiSC style**.
- ▶ Your report focuses on developing **preferred behaviors** that are based on **best practices**.
- ▶ The best practices are **context specific**, so the preferred behaviors will change depending on the needs of the situation.

## Work of Leaders: Vision, Alignment, and Execution

Work of Leaders provides a simple, three-step process to help you reflect on how you approach the most fundamental work of leaders: Creating a Vision, building Alignment around that vision, and championing Execution of the vision.



### VISION

The work of leaders includes crafting a vision of new possibilities for the future through exploration, boldness, and testing assumptions.



### ALIGNMENT

Leaders build alignment by communicating with clarity, engaging in dialogue, and providing inspiration, so everyone is moving in the same direction.

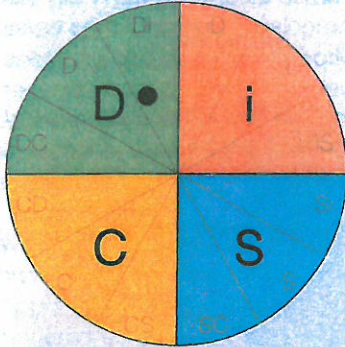


### EXECUTION

Finally, leaders need to champion execution through momentum, structure, and feedback, to enable the group to capitalize on its talents while making the vision a reality.

## Your Dot Tells a Story

Your DISC® Style is: Di



**Because your style is Di**, you have a natural passion to grow, expand, and explore. You probably have a high energy level and a great need for excitement, and you're driven to constantly seek bigger and better accomplishments.

Most likely, you believe you are well-equipped to adapt to emerging situations, so you aren't afraid to be spontaneous. In fact, this propensity toward action might be the **first thing people notice about you**. You tend to be a quick thinker and a quick talker, and others may have trouble keeping up with your fast pace. Similarly, one of the most common pieces of constructive feedback for leaders with the Di style is that they sometimes

listen without really hearing what's being said. Your continuous need for stimulation and variety may mean that you're more interested in starting projects than in following through. But because you like shortcuts and focus on swift solutions, the group is often prepared to move forward rapidly.

**Like other leaders with the Di style**, you push hard to make sure your ambitions are met. Most likely, you don't mind being under pressure, and you have no trouble applying it either. You probably view pressure as a positive force that can help you advance your ideas and charge toward your goals.

Furthermore, because you don't like feeling constrained, you value freedom and don't bow to conformity. Therefore, you're willing to take chances by stretching the boundaries and even overstepping them at times. Compared to all of the other DISC® styles, leaders with the Di style are rated highest on promoting bold action in the organization.

Your sense of conviction probably allows you to see ideas very clearly in your own mind, even if they aren't quite clear to others. The right path may often seem straightforward to you, and you aren't afraid to communicate your beliefs. In fact, according to our research, the most pronounced strength of leaders with the Di style is the ability to show confidence in their opinions. And because you usually have strong feelings about how things should be done, you aren't afraid to step in and correct the process if it strays from your vision.

Leaders with the Di style are good at persuading and charming others. Most likely, your self-assurance and verbal skills make it easy for you to describe how you think things should be. While this can be a great benefit, it can also cause problems if you're so focused on your own ideas that you shut down other people. In fact, almost half of the people in our surveys want leaders who share your Di style to be more open to input from others. Still, you probably find the act of influencing people very gratifying, both one-on-one and in team settings. For you, sharing your passion is about connecting with people and helping them see new possibilities for the future.

**John**, your **most valuable contributions as a leader** may be your tendency to drive the group toward results, share your passion and energy, initiate innovative change, and keep things moving at a rapid pace. In fact, these are probably some of the qualities that others admire most about you.

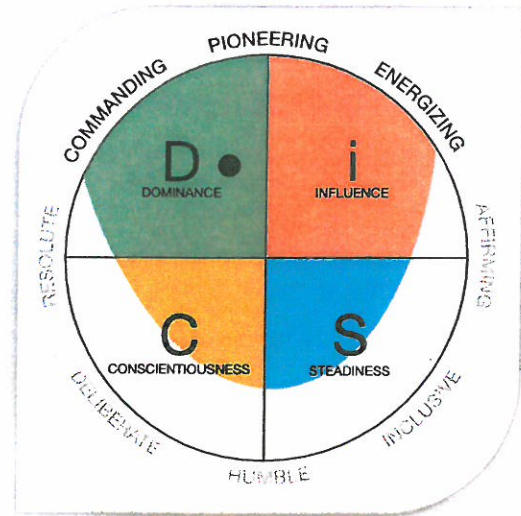
YOUR DiSC<sup>®</sup> PRIORITIES & SHADING

## Your Shading Expands the Story

John, while your dot location and your DiSC<sup>®</sup> style can say a great deal about you, your map **shading** is also important.

The eight words around the Everything DiSC<sup>®</sup> map are what we call **priorities**, or the primary areas where people focus their energy. The closer your shading comes to a priority, the more likely you are to focus your energy on that area. Everyone has at least three priorities, and sometimes people have four or five. **Having five priorities is no better than having three, and vice versa.**

Typically, people with the Di style have shading that touches Pioneering, Commanding, and Energizing. Your shading is characteristic of the Di style.



## What Priorities Shape Your Leadership Experience?

► **Being Pioneering**

John, leaders with your Di style are attracted to bold ideas that stretch the boundaries of what's possible. In fact, you tend to be much more adventurous and daring than most people, and you probably jump on opportunities to explore new avenues for growth. But because you tend to make decisions quickly, you may overlook important considerations in your drive to move forward.

► **Being Commanding**

As a leader who values achievement, you set ambitious goals to get the biggest payoff for your effort. In fact, you may be so impatient for immediate results that you can come across as demanding. And because you have a strong internal drive, taking charge and maintaining control are highly important to you. However, you're probably also quick to share your victories with others.

► **Being Energizing**

Leaders with your Di style have a dynamic and enthusiastic approach to their work. Even in the face of obstacles, you're unlikely to let your momentum lag. Because you tend to be passionate and self-assured, you're probably quite persuasive and enjoy rallying others to achieve group goals. Your positive approach gives people confidence that their contributions matter.



ACWA





**Sherrie Sobol**

**From:** ACWA <acwabox@acwa.com>  
**Sent:** Wednesday, October 26, 2016 12:20 PM  
**To:** Sherrie Sobol  
**Subject:** Alert: Outreach Needed on Shift to Ongoing Efficiency

OCTOBER 26, 2016

[www.acwa.com](http://www.acwa.com) | [Trouble viewing - View online](#)


# OUTREACH Alert

GRASSROOTS SUPPORT TO ACHIEVE RESULTS

## Outreach Needed on Shift to Ongoing Efficiency

### *Proactive Communication Encouraged with Customers, Media*

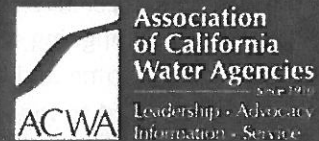
Even though Californians continue to achieve significant levels of conservation in the absence of state mandates, State Water Resources Control Board staff has signaled interest in returning to state-imposed conservation targets in January 2017 if the drought persists and a steep decline in conservation is perceived.

ACWA is urging its members to take every opportunity to reinforce with media and other audiences that efficiency and drought preparedness are the objectives of the "stress test" approach adopted by the State Water Board. The messaging is vital NOW as State Water Board staff is expected to preview its proposal for extending and updating the emergency regulation in early December.

An updated communications toolkit and suggested steps to take are available to member agencies to elevate the issue with media, customers and other key audiences. There is a short window of opportunity to message this important topic and make it clear that Californians are making an appropriate shift to permanent changes in how they use water, and it is much more meaningful than meeting monthly targets set by the state.

### Outreach Checklist

ACWA recommends that member agencies take the following steps:



CONNECT WITH US



### KEY LINKS

 GET MORE INFO

 FIND YOUR LEGISLATOR

OUTREACH CENTER

ACWA STATE LEGISLATIVE COMMITTEE

REGULATORY ISSUES

1. **Arm yourself with examples.** Gather examples of what your agency is doing to help customers shift to permanent changes in how they use water. Turf removal rebates, landscape workshops and incentives to change out toilets and appliances are concrete actions that can result in permanent savings. Have examples ready that illustrate the commitment to conservation as a California way of life.
2. **Understand your data.** Be prepared to answer questions about your agency's monthly water use figures and what they mean. Has the population grown in your service area? Have new developments come on line? Have you seen steady declines in per capita water use over the past several years? Make sure you are ready to tell your story.
3. **Inform your local leaders.** Reach out to your local elected officials and community leaders to educate them on what you are doing to promote ongoing water use efficiency and drought preparedness. Make sure they understand the value of the local investments you've made and the appropriate shift toward ongoing efficiency, which is different from the burdensome and extreme actions that were required last year.
4. **Reach out to media.** Proactively reach out to your local media to reinforce your message. Submit op-eds to local papers to extend the reach.
5. **Educate your customers:** Utilize your website, social media and customer newsletters to message the importance of drought preparedness and ongoing efficiency.

An updated toolkit with message points, sample newsletter article and social media tools is available on ACWA's website at <http://www.acwa.com/content/communications-toolkit-new-conservation-regulation>. Member login is required to access the toolkit.

Save Our Water, the state's official water conservation program managed by ACWA in partnership with the California Department of Water Resources, offers turnkey outreach materials such as ads, graphics, and fact sheets to help spread the message of permanent conservation changes as outlined in its "Water Conservation. It's for Life." campaign. Go to [www.saveourwater.com](http://www.saveourwater.com) for more details.

## Questions

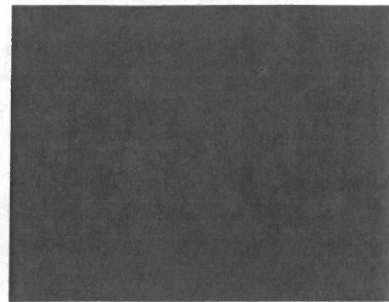
Members with questions about ACWA's long-term water management strategy for California should contact ACWA Director of State Regulatory Relations Dave Bolland at (916) 441-4545.

## ACWA POLICY PRINCIPLES

## CONTACT

Lisa Lien-Mager  
Director of Communications  
[lisalm@acwa.com](mailto:lisalm@acwa.com)

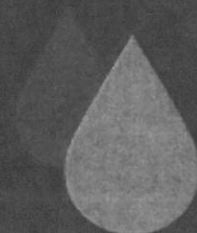
Members with questions about recommended outreach activities should contact ACWA Director of Communications Lisa Lien-Mager at (916) 441-4545.



Find Water Industry-Related  
Products & Services at  
ACWA Marketplace

The ACWA Marketplace is now available to help ACWA members make informed decisions on products and services.

**SEARCH NOW**



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Association  
of California  
Water Agencies  
Since 1910  
Leadership • Advocacy  
Information • Service

# Communications Toolkit

## Sample Newsletter or Website Article October 2016

### Join Us in Making Permanent Changes in Water Use

Challenges can bring out the best in people and we've certainly found that to be true of our customers. When asked to make mandatory steep cuts in water use in 2015 due to California's ongoing drought, our customers stepped up, letting lawns go brown and placing buckets in showers to catch water. We applaud you for your commitment and the concrete actions you have taken to save water.

Thanks to last winter's modest storms and our ongoing investments in drought-resilient water supplies, we are able to move beyond the stringent measures required last year to more sustainable practices this year. Though we have certified that we are drought-prepared in the event of three more dry years, it's important to maintain water-wise practices and continue making permanent changes to the way we use water so we can remain efficient and resilient.

Our agency has many programs to help customers make changes that will result in permanent water savings. [Cite specific programs such as rebates, landscape workshops, water-wise house calls, etc.] We invite you to take advantage of these and do your part to embrace conservation as a California lifestyle.

We know the next dry year is always right around the corner. Ongoing conservation and permanent changes are important because there is never enough water to waste in California.

Again, we thank you! You are the ultimate stewards of California's precious water. Keep up the good work, and visit [www.saveourwater.com](http://www.saveourwater.com) for water savings tips. And visit our website for more on our rebates, our drought-resilient supplies and what we are doing to raise the bar on efficiency.

###



# Communications Toolkit

## Message Points on Shift to Ongoing Efficiency

October 2016

The following points are intended to help ACWA members communicate the shift to ongoing efficiency and actions by Californians that will result in permanent water savings.

### The Real Goal is Drought Preparedness and Efficiency

- California has made an appropriate shift from last year's top-down conservation mandates to a "stress test" model that emphasizes drought preparedness.
- The latest data shows that Californians continue to achieve significant levels of conservation, even in the absence of state mandates.
- A modest uptick in water use was expected as Californians shifted from the burdensome and extreme actions required last year to more meaningful changes that will result in permanent water savings. This doesn't mean we are backsliding in any way.
- Aided by hundreds of millions of dollars in rebates and other investments, permanent changes are all around us. [Cite examples of programs your agency has in place to help customers make permanent changes.]
- Californians are removing turf and replacing it with water-wise landscapes and making other changes indoors. These actions will result in real and sustained water savings.
- The public is doing exactly what we have asked of them: embracing conservation as a way of life.
- Burdensome and extreme actions such as letting lawns go completely brown, putting buckets in the shower, refraining from flushing and basically not using water are not sustainable in the long run and should not continue now.
- Being drought prepared and achieving high levels of ongoing efficiency are far more meaningful goals than meeting monthly targets set by the state. Burdensome and extreme actions cannot be sustained over time and must be reserved for when we actually need them.

- We thank our customers for the tremendous efforts they have made to save water during this drought. We know these water-wise habits are here to stay.
- We are also permanently prohibiting water-wasting activities, such as hosing down driveways, washing vehicles without a shut-off nozzle, and irrigating outdoors within 48 hours of measurable rainfall.

### **Local Investments are Paying Off with Increased Water Supply Reliability**

- Together with our customers, our agency has invested \$\_\_\_\_\_ to develop and manage drought-resilient water supplies. (Cite specifics, such as water reuse projects, local brackish water desalination projects, groundwater storage, etc.) Our investments and ongoing efficiency have made us better prepared for drought than at any time in history.
- This is a good news story that shows these extensive investments are paying off for our customers.

### **Long-Term Conservation Must Remain a Way of Life in California**

- We know the next dry year is always right around the corner. Ongoing conservation is important because there is never enough water to waste in California.
- Our agency is focused on doing all we can to raise the bar on water-use efficiency and continue investing in drought resilient supplies.

RCEA, RREDC, *NCRP*







# Redwood Coast Energy Authority

633 3<sup>rd</sup> Street, Eureka, CA 95501

Phone: (707) 269-1700 Toll-Free (800) 931-RCEA Fax: (707) 269-1777

E-mail: [info@redwoodenergy.org](mailto:info@redwoodenergy.org) Web: [www.redwoodenergy.org](http://www.redwoodenergy.org)

## MEETING AGENDA

**Redwood Coast Energy Resource Center  
633 3<sup>rd</sup> Street, Eureka, CA 95501**

**October 17, 2016  
Monday, 3:15 p.m.**

Redwood Coast Energy Authority will accommodate those with special needs. Arrangements for people with disabilities who attend RCEA meetings can be made in advance by contacting Barbara Garcia at 269-1700 by noon the day of the meeting.

### I. ROLL CALL

### II. REPORTS FROM MEMBER ENTITIES

### III. ORAL COMMUNICATIONS

This time is provided for people to address the Board or submit written communications on matters not on the agenda. At the conclusion of all oral & written communications, the Board may respond to statements. Any request that requires Board action will be set by the Board for a future agenda or referred to staff.

### IV. CONSENT CALENDAR

All matters on the Consent Calendar are considered to be routine by the Board and are enacted on one motion. There is no separate discussion of any of these items. If discussion is required, that item is removed from the Consent Calendar and considered separately. At the end of the reading of the Consent Calendar, Board members or members of the public can request that an item be removed for separate discussion.

- A. Approve Minutes of September 19, 2016 Board Meeting.
- B. Approve attached Warrants.
- C. Accept attached Financial Reports.
- D. Approve contract with the Local Government Commission for \$25,000 for RCEA to serve as the CivicSpark Regional Coordinator for 2016-2017.
- E. Approve 2016-2017 CivicSpark Program support contracts:
  - \$23,400 contract with the Local Government Commission for CivicSpark Program support for the Energy Watch Program.
  - \$23,400 contract with the Local Government Commission for CivicSpark Program support on CA Energy Commission Grants ARV-14-046 and ARV-14-055.
  - \$23,400 contract with the Local Government Commission for CivicSpark Program support on Community Choice Energy program.

### V. REMOVED FROM CONSENT CALENDAR ITEMS

Items removed from the Consent Calendar will be heard under this section.

## VI. NEW BUSINESS

### A. Community Choice Energy (CCE)- Operational Services Contracts

Approve a contract with Noble Americas Energy Solutions LLC, including all exhibits, for Community Choice Energy Program development and launch services, and authorize the Executive Director to act as Contract Administrator with responsibility and authorization to administer the agreement including authority to transmit instructions, receive information, and implement the agreement on behalf of RCEA.

### B. CCE – Implementation Plan

Adopt Resolution 2016-2 approving the Redwood Coast Energy Authority Community Choice Aggregation Implementation Plan and Statement of Intent.

### C. CCE - Local Biomass Request for Offers

Approve, contingent on final review and approval by RCEA Legal Counsel, Request for Offers for Local Biomass Power and authorize Executive Director to release to interested parties.

### D. CCE – Line of Credit Application

Authorize Executive Director to apply for a \$700,000 line of credit from the Headwaters Fund, administered by the Redwood Region Economic Development Commission.

### E. CCE – Communications Plan

Approve moving forward with the proposed communications plan for CCE.

### F. RCEA Staff Planning and Reorganization Update

Appoint Board sub-committee to assist staff with finalizing the staffing plan and compensation review and update.

Staff Report - Update on Accounting Transition process.

## VII. ADJOURNMENT

***The next RCEA Board of Directors meeting is scheduled for  
Monday, November 21, 2016 at 3:15pm***



Redwood Region  
Economic Development  
Commission

520 E Street Eureka • California 95501 • (707) 445-9651 • FAX (707) 445-9652

**REDWOOD REGION ECONOMIC DEVELOPMENT COMMISSION**  
**Regular meeting of the Board of Directors**  
At Humboldt Area Foundation, 363 Indianola Road, Bayside, CA  
**October 24, 2016 at 6:30 pm**

**AGENDA**

- I. **Call to Order**
- II. **Approval of Agenda and Minutes**
  - A. Approval of Agenda for October 24, 2016
  - B. Approval of Minutes of the Board of Directors for August 22, 2016
- III. **Consent Calendar**
  - A. Acceptance of Agency-wide Financial Reports: August 31, 2016 and September 30, 2016
- IV. **Reports – No Action Required**
  - A. Loan Portfolio Reports: August 31, 2016 and September 30, 2016
- V. **Public Input – for non-agenda items**
- VI. **Program – Facilitator Heather Equinoss - Board Prioritization/Strategic Planning Session**
- VII. **Adjourn**

*The Redwood Region Economic Development Commission will, on request, make agendas 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. Individuals who need this agenda in an alternative format or who need a disability-related modification of accommodation in order to participate in the meeting should contact the Board Secretary at (707) 445-9651. Notification 48 hours prior to the meeting will enable the Commission to make reasonable arrangements for accommodations.*

**M E M B E R A G E N C I E S**

City of Arcata • City of Blue Lake • City of Eureka • City of Ferndale • City of Fortuna • City of Rio Dell • City of Trinidad  
County of Humboldt • Humboldt Bay Harbor, Recreation and Conservation District • Humboldt Bay Municipal Water District  
Humboldt Community Services District • Manila Community Services District • McKinleyville Community Services District  
Orick Community Services District • Redwood's Community College District • Hoopa Valley Tribe  
Willow Creek Community Services District • Orleans Community Services District • Redway Community Services District



## NORTH COAST RESOURCE PARTNERSHIP

### North Coast Resource Partnership (NCRP) Policy Review Panel (PRP) & Technical Peer Review Committee (TPRC) Meeting AGENDA

October 21, 2016; 10 am – 3 pm

Bear River Band of Rohnerville Rancheria, Tish Non Community Center  
266 Keisner Road, Loleta

- |      |       |                       |   |
|------|-------|-----------------------|---|
| I    | 10:00 |                       | <b>Welcome and Introductions</b>  |
| II   | 10:10 |                       | <b>Tribal Welcome and Opening Prayer</b><br>Barry Brenard, Tribal Council Chairman, Bear River Band of the Rohnerville Rancheria  |
| III  | 10:20 | DECISION              | <b>Review and Approve Agenda</b>  |
| IV   | 10:25 |                       | <b>PUBLIC COMMENT for items not on the agenda</b>   |
| V    | 10:30 | ROUNDTABLE DISCUSSION | <b>Honoring Vernon "Pro" Ward</b><br>NCRP Tribal Representatives  |
| VI   | 11:00 | ROUNDTABLE DISCUSSION | <b>Honoring Jimmy Smith</b><br>NCRP PRP Chair, Trinity County Supervisor Morris   |
| VII  | 11:30 | ROUNDTABLE DISCUSSION | <b>Acknowledging Contributions of Outgoing PRP &amp; TPRC Members</b><br>NCRP PRP Chair, Trinity County Supervisor Morris   |
| VIII | 11:50 | ROUNDTABLE DISCUSSION | <b>NCRP Leadership: New Member Orientations</b><br>NCRP PRP Chair, Trinity County Supervisor Morris   |
|      | 12:15 |                       | WORKING LUNCH (PROVIDED)  |
| IX   | 12:45 | INFORMATIONAL         | <b>Panel Presentations &amp; Discussion: Tribal Ecological Knowledge</b><br><i>Panel Chair:</i> Leaf Hillman, Karuk Village of Katiphiruk, Director of Natural Resources and Environmental Policy, Karuk Tribe <ul style="list-style-type: none"> <li>• Buffie Schmidt, Sherwood Valley Band of Pomo Indians, Noyo Reservation, Yokayo Rancheria and Upper Lake Rancheria</li> <li>• Marva Jones, Tolowa Dee-ni' Nation (Smith River), Seventh Generation Fund Affiliate Program Officer</li> <li>• Suntayea Steinruk, Tolowa Dee-ni' Nation (Smith River), Tribal Historic Preservation Officer</li> </ul> |

- |      |      |               |   |
|------|------|---------------|---|
| X    | 1:45 | INFORMATIONAL | <b>NCRP Outreach &amp; Involvement: Tribal Engagement &amp; Economic Opportunity for Disadvantaged Communities</b><br>Katherine Gledhill, West Coast Watershed  |
| i.   |      | DECISION      | <b>Proposition 1 IRWM DAC Involvement Funding Amount</b><br>NCRP Proposition 1 Ad Hoc Committee   |
| ii.  |      | DECISION      | <b>Program Service Provider RFP Selection Criteria</b><br>NCRP Proposition 1 Ad Hoc Committee   |
| iii. |      | DECISION      | <b>Direct Staff to Finalize NCRP DAC Involvement Program Proposal</b><br>NCRP Proposition 1 Ad Hoc Committee  |
| iv.  |      | DECISION      | <b>PRP Support Letter for the NCRP DAC Involvement Proposal</b><br>NCRP Proposition 1 Ad Hoc Committee  |
|      |      |               | <b>PUBLIC COMMENT</b>   |
| XI   | 2:20 | INFORMATIONAL | <b>Updates:</b>   |
| i.   |      |               | <b>NCRP Meeting &amp; Event, April 21, 2017</b><br>NCRP PRP Chair, Trinity County Supervisor Morris   |
| ii.  |      |               | <b>Legislative News</b><br>Tim Anderson, Gov Affairs Manager, Sonoma County Water Agency  |
| iii. |      |               | <b>North Coast Tribal Engagement Update</b><br>Sherri Norris, Executive Director, California Indian Environmental Alliance  |
| iv.  |      |               | <b>Strategic Growth Council Sustainable Communities Planning Grant</b><br>Karen Gaffney, West Coast Watershed   |
| v.   |      |               | <b>Regional Administrator &amp; Project Implementation Update</b><br>Hank Seemann, Deputy Director, Public Works Dept, Humboldt County<br>Devin Theobald, Administrative Analyst, Public Works Dept, Humboldt C |
| vi.  |      |               | <b>Executive Committee, PRP direction and staff action</b><br>(see meeting materials)   |
| XII  | 2:55 |               | <b>PUBLIC COMMENT</b>   |
| XIII | 3:00 |               | <b>Next NCRP meeting date: January 20, 2017, Ukiah area</b><br>(NCRP PRP, Executive Committee nominations and elections)  |
| XIV  | 3:00 |               | <b>ADJOURN</b>  |

### 2017 NCRP Meeting Dates & Location:

- January 20 – Ukiah Area
- April 21 – Sonoma County Water Agency, Westside Water Education Center
- July 21 – Eureka Area
- October 20 – Weaverville Area

### **Policy Review Panel Members**

Chair: Supervisor Judy Morris, Trinity County  
Vice-Chair: Supervisor Efren Carrillo, Sonoma County  
Edwin Smith, Tribal Council, Bear River Band of the Rohnerville Rancheria, Central District  
Alternate, Central District: vacancy  
Supervisor Gerry Hemmingsen, Del Norte County  
Supervisor Chris Howard, Del Norte County  
Alternate: Supervisor David Finigan, Del Norte County  
Supervisor Ryan Sundberg, Humboldt County  
Supervisor Mark Lovelace, Humboldt County  
Alternate: Supervisor Virginia Bass, Humboldt County  
Supervisor Carre Brown, Mendocino County  
Supervisor John McCowen, Mendocino County  
Alternate: Supervisor Dan Gjerde, Mendocino County  
Supervisor Geri Byrne, Modoc County  
Alternate, Modoc County: vacancy  
Leaf Hillman, Director of Natural Resources, Karuk Tribe, Northern District  
Alternate, Northern District: vacancy  
Supervisor Grace Bennett, Siskiyou County  
Supervisor Ray Haupt, Siskiyou County  
Alternate, Siskiyou County: vacancy  
Supervisor James Gore, Sonoma County  
Alternate: Grant Davis, Sonoma County Water Agency, Sonoma County  
Alternate: Dale Roberts, TPRC member, Sonoma County  
Brandi Brown, Redwood Valley Little River Band of Pomo, Southern District  
Alternate: Martina Morgan, Tribal Council Vice-Chair, Kashia Band of Pomo, Southern District  
Supervisor Karl Fisher, Trinity County  
Alternate, Trinity County: vacancy

### **Executive Committee**

Chair: Supervisor Judy Morris, Trinity County  
Vice-Chair: Supervisor Efren Carrillo, Sonoma County  
Supervisor Grace Bennett, Siskiyou County  
Leaf Hillman, Karuk Tribe

### **Technical Peer Review Committee Members**

Co-Chair: Sandra Perez, Program Manager, Five Counties Salmonid Conservation Program, Trinity Co  
Co-Chair: Wayne Haydon, Certified Engineering Geologist, Sonoma County  
Javier Silva, Environmental Director, Sherwood Valley Rancheria, Central District  
Alternate, Central District: vacancy  
Jim Barnts, Director of Public Works, Del Norte County  
Zack Larson, Smith River Watershed Coordinator, Del Norte County  
Alternate, Del Norte County: vacancy  
Paul Helliker, General Manager, Humboldt Bay Municipal Water District, Humboldt County  
Hank Seemann, Deputy Director, Environmental Services, Public Works Department, Humboldt County  
Alternate, Humboldt County: vacancy  
Patricia Hickey, Executive Director, Mendocino Resource Conservation District, Mendocino County  
Sean White, Director of Water and Sewer, City of Ukiah, Mendocino County  
Alternate, Mendocino County: vacancy  
Sean Curtis, Modoc County Natural Resources, Modoc County  
Alternate, Modoc County: vacancy  
Toz Soto, Senior Fisheries Biologist, Karuk Tribe, Northern District  
Alternate: Marissa Fierro, Environmental Director, Pit River Tribe, Northern District  
TPRC members (2) and alternate, Siskiyou County: vacancy  
Dale Roberts, Engineer, Sonoma County Water Agency, Sonoma County  
Alternate, Sonoma County: vacancy  
Nathan Rich, Kashia Band of Pomo, Southern District  
Alternate: Emily Luscombe, Environmental Director, Coyote Valley Band of Pomo, Southern District  
Wes Scribner, General Manager, Weaverville Community Services District, Trinity County  
Alternate: Mark Lancaster, Director, Five Counties Salmonid Conservation Program, Trinity County

### **Funding Ad Hoc Committee**

Supervisor Judy Morris, Trinity County  
Supervisor Efren Carrillo, Sonoma County  
Supervisor Grace Bennett, Siskiyou County  
Supervisor James Gore, Sonoma County  
Javier Silva, Sherwood Valley Rancheria  
Marissa Fierro, Environmental Coordinator, Pit River Tribe, Northern District  
Wayne Haydon, Certified Engineering Geologist, Sonoma County

### **SGC Ad Hoc Committee**

Supervisor Mark Lovelace, Humboldt County  
Toz Soto, Karuk Tribe, Northern District

### **Proposition 1 Ad Hoc Committee**

Supervisor Judy Morris, Trinity County  
Supervisor Grace Bennett, Siskiyou County  
Supervisor Mark Lovelace, Humboldt County  
Emily Luscombe, Coyote Valley Band of Pomo



