



SAN JOAQUIN COUNTY

FLOOD CONTROL & WATER CONSERVATION DISTRICT

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KRIS BALAJI
DIRECTOR OF PUBLIC WORKS

ADVISORY WATER COMMISSION

August 17, 2016, 1:00 p.m.

Public Health Conference Room, 1601 E. Hazelton Avenue, Stockton, California

AGENDA

Roll Call

Approve Minutes for the Meeting of June 15, 2016

SCHEDULED ITEMS

I. Action Items

- A. Discussion and Possible Action to Recommend to the Board of Supervisors to Enter into a Memorandum of Understanding with Stanislaus County for an Economic Analysis of the Impacts of Reallocating Unimpaired Flows from Tributaries to the Lower San Joaquin River (See Attached) – Rod Smith, Stratecon, Inc.
- B. Discussion and Possible Action to Recommend to the Board of Supervisors to Adopt the Initial Study and Mitigated Negative Declaration for the Demonstration Recharge Extraction and Aquifer Management (DREAM) and North San Joaquin Water Conservation District South System Improvements Project (See Attached) – Kris Balaji

II. Discussion Items

- A. Update on 2016 Drought Conditions – Mike Cockrell

III. Communications (See Attached):

- A. August 2, 2016, Sacbee.com, “California Unveils Environmental Blueprint for Delta Tunnels”
- B. August 9, 2016, NOAA Climate.gov, “Drought is Building in Places Other Than California”
- C. August 10, 2016, Sacbee.com, “Legislators Approve Audit of Governor Jerry Brown’s Water Tunnel Plan”

Public Comment:

Next Regular Meeting: **September 21, 2016, 1:00 p.m.**
Public Health Conference Room

Commission may make recommendations to the Board of Supervisors on any listed item.

If you need disability-related modification or accommodation in order to participate in this meeting, please contact the Water Resource Staff at (209) 468-3089 at least 48 hours prior to the start of the meeting. Any materials related to items on this agenda distributed to the Commissioners less than 72 hours before the public meeting are available for public inspection at Public Works Dept. Offices located at the following address: 1810 East Hazelton Ave., Stockton, CA 95205. These materials are also available at <http://www.sjwater.org>. Upon request these materials may be made available in an alternative format to persons with disabilities.

**REPORT FOR THE MEETING OF
THE ADVISORY WATER COMMISSION OF THE SAN JOAQUIN COUNTY
FLOOD CONTROL AND WATER CONSERVATION DISTRICT
June 15, 2016**

The regular meeting of the Advisory Water Commission of the San Joaquin County Flood Control and Water Conservation District was held on Wednesday, June 15, 2016, beginning at 1:00 p.m., at Public Health Services, 1601 E. Hazelton Avenue, Stockton, California.

Roll Call

Present were Commissioners Nomellini, Roberts, Alternate Houghton, Commissioner Flinn, Alternate Miller, Commissioners Christensen, Hartmann, Secretary Nakagawa, Vice-Chair Price, and Chairman McGurk.

Others present are listed on the Attendance Sheet. The Commission had a quorum.

Approval of Minutes for the Meeting of May 18, 2016.

Motion and second to approve the minutes of May 18, 2016 (Flinn/Roberts). Unanimously approved.

SCHEDULED ITEMS

Tom McGurk, Chairman of the Advisory Water Commission (AWC), led the agenda.

I. Discussion items:

A. Presentation and Discussion on Woodbridge Irrigation District Groundwater Recharge Opportunities – Doug Heberle

AWC Alternate Commissioner Doug Heberle, Woodbridge Irrigation District (WID), presented an overview of potential WID groundwater recharge projects. Alternate Heberle began the presentation with a brief history of WID water rights on the Mokelumne River consisting of pre-1914, riparian water rights to private property owners, and licenses for WID and East Bay Municipal Utilities District (EBMUD); junior to WID rights are “State filings,” and permits for North San Joaquin Water Conservation District (NSJWCD), EBMUD, and the County’s application 29835 filed in 1990.

The Eastern San Joaquin Subbasin (ESJ) is identified by the Department of Water Resources (DWR) as a high-priority subbasin in a condition of critical overdraft. Based on the CASGEM prioritization criteria, ESJ ranks 5th highest in priority out of 515 subbasins Statewide. Per the Sustainable Groundwater Management Act (SGMA), Groundwater Sustainability Agencies (GSAs) must obtain a “sustainable yield” in their Groundwater Sustainability Plan (GSP) within 40 years. “Sustainable yield” is defined as water that can be extracted from the groundwater supply without causing an undesirable result. What can be done for the GSAs (City of Lodi, City of Stockton, WID, County, NSJWCD, and South San Joaquin Irrigation District (SSJID)) to work together to elevate the groundwater basin? In wet years, there will be flood flows coming down the river that could be recharged. The DREAM Project will be carried out by 2017.

Alternate Heberle distributed a handout comprised of three categories of proposed WID groundwater recharge projects including: 1) In-lieu recharge; 2) existing and future excavated

stormwater basins to be used for recharge; and, 3) the possibility of using injection wells in the WID GSA. The collective groundwater banking capacity for these projects is approximately 40,000 acre feet per year of recharge. Proposed WID recharge projects include:

- Pixley Slough / Eight Mile Road – WID operates Moffit Dam. If re-operated, Pixley Slough could be filled in certain years. Projection: 6.5 acres of surface area, 6/10 acre per day recharge rate x 270 days in an irrigation season = 1,000 acre feet.
- Morada Lane – WID has operated this SJAFCA Detention Basin #2. This basin is fed by WID's Davis Dolan Lateral along the east side and was actually operated as a recharge basin from 2003 to 2007. Based on analysis, there was 1,500+ acre feet per year of recharge. Vice-Chair Price asked if stormwater from the subdivision goes into the basin. Mr. Heberle answered it does, but they were operating with water from a WID system and getting quite a bit of recharge in addition to the Stormwater entering the basin. He added this was a project done in the past with positive results.
- Eight Mile Road / Railroad Tracks – This area encompasses WID's South Main Canal under Bear Creek. The proximity of the canal includes 3 borrow pits excavated to build the Eight Mile Road grade separation and overpass. The projection for the surface area of these borrowed pits and potential annual recharge is approximately 2,500 acre feet, if operated throughout irrigation season.
- In-Lieu Recharge Project / Micke Grove – There is current interest in this project to provide water (from WID, NSJWCD, or County application 29835) to Micke Grove for irrigation purposes. Engineering work and studies have been done on the design and could produce approximately 1,000+ acre feet per year recharge potential.

Additional project opportunities are located north towards Lodi including:

- City of Lodi – Stormwater Detention Basin G is located at Lower Sacramento Road and Century Blvd and encompasses WID South Main Canal. There is a proposed connection from South Main Canal to DeBenedetti Park and multiple proposed projects to connect future basins to existing basins.

Alternate Heberle provided aerial imagery including:

- Basin G / DeBenedetti – Containing water. This image details an existing basin and proposed future basin. Each basin could produce 1000+ acre feet of recharge a year.
- Reynolds Ranch – Contains existing large K1 Basin with a future smaller K2 Basin. K1 Basin produces 1600 acre feet of recharge, with the future K2 Basin producing 300 acre feet.
- West Main Canal – Contains Wilkerson Lateral and serves the City of Stockton. A future 6-acre basin is proposed to produce 1000 acre feet of potential recharge.
- Lodi Wastewater Treatment Plant – Located at White Slough and I-5. Contains an existing four holding ponds. Additional water will be used to operate the facility and irrigate 20 acres of agriculture operations with potential recharge of 3000 acre feet.

- Turner Road / South Main Canal – Located on the boundary of the City of Lodi and the County. WID owns this property (former Mainland Nursery). This idea originated to meet the Lodi Wastewater Treatment Plant's unmet production capability and, in theory, provide connections of two to six, 2,000-gallon injection wells. The potential recharge per well is 1,900 acre feet a year with wells running 80% of the time.

Alternate Heberle concluded his presentation and discussion was opened.

Commissioner Nomellini commented on participation in a San Joaquin County group that traveled to Pasadena to observe groundwater injection, which consisted of using excess treated drinking water, run that water back through the delivery pipeline and into the annulus of wells. This water is then used to recharge the basin. Commissioner Nomellini was impressed with the system. Commissioner Christensen was also on this tour and stated that he was equally impressed with the project. He added that one well was contaminated so the contaminants were pushed out and water was pulled back in upon recovery, providing an excellent vehicle for storage. Projects such as this may be a model for groundwater recharge.

Commissioner Flinn commented on WID's proposed Turner Road project. He expressed the City of Galt's concern regarding the "mining" of water south of the river to the detriment of the north. The primary concern is the source of the water used for the project. Alternate Heberle answered that the project would take water through an existing infrastructure and move it. Commissioner Flinn referenced the MokeWISE Project and the initial strong resistance from the environmental community due to lack of information. He suggested open discussions with the City of Galt should WID pursue this project. Alternate Heberle responded that Commissioner Flinn makes a good point and added the project could entail quick releases of excess water and capture water for benefit with no harmful environmental impacts.

Commissioner Flinn commented on the evolving of the DREAM Project and initial theory of in-lieu recharge as more accepting to the grower community. He asked if this could be a current consideration for this project. Commissioner Christensen interjected that this project is designed to take large volumes of water which is available for a short time and put it to use. EBMUD does not always inform WID of upcoming reservoir releases as it is contingent upon possible encroachment. Commissioner Christensen added that they need to be ready for these releases to capture the water and the unused basins could be that viable system and available to the County.

Commissioner Hartmann commended Commissioner Christensen and Alternate Heberle on being proactive and then asked how WID's water rights allow for storing. He further inquired if their water rights are connected to storage rights. Alternate Heberle answered that pre-1914 rights allows usage for municipal or agriculture. The water could be County application water, EBMUD water, or could be sold to the County or City. Commissioner Christensen added it is not the intent to recapture but to create a vehicle mechanism by which water goes in the ground and does not go out.

Commissioner Hartmann favored the concept but reiterated there may be a technical issue of rights to stormwater. Commissioner Nomellini commented there may be an argument that it is not a beneficial use of water and the State Water Board may need the ultimate use identified. He said it is a good idea and inquired about operations. Commissioner Christensen responded there is agriculture water in that area, the south main feeds the Wilkerson Lateral, and are at 38 cubic feet per second (CFS) with the City of Lodi and midtown taking water. He stated this could take advantage of the flood flows and would be a very simple operation.

Vice-Chair Price asked if there are any entities within the system claiming rights to this water. Commissioner Nomellini answered there is competition from Southern California of anyone taking water out of the Delta system before it gets into the pool for export.

Commissioner Flinn commented that putting the twist on flood flow is a major change for beneficial use. He added that it could also offer a certain level of flood protection as it creates a "release valve." Commissioner Nomellini stated that in conjunction with the State plan on flood control, an analysis was done on Hogan Dam. If a plan can be developed for 40,000 acre feet (or more) of flood control storage to maintain flows in the Calaveras for 200 year flood protection, and tie it in to groundwater banking – this element of flood control could be important in funding possibilities.

Secretary Nakagawa pointed out that in working with United States Geological Survey (USGS), a special monitoring well was installed at the site of San Joaquin Area Flood Control Agency (SJAFCA) Basin #2, near Morada. Some of the recharge water was spiked with a non-harmful tracer. Upon recharge, the water traveled down 300-400 feet within a matter of months and started to migrate west towards one of the City of Stockton wells. This is a good example of recharge happening and being recovered downstream and proves that the water is used and not just stored. The tracer study also demonstrated a substantial benefit to a deep aquifer layer where water was physically pumped out and molecules recovered downstream sometime later.

Commissioner Hartmann asked whether a permit will be required. Alternate Miller responded that is one of Assemblymember Susan Eggman's "fixes" (AB 647), however, it was dropped. Eggman had turned it into a two-year bill and it may come back. Mr. Nakagawa added one of the major supporters, Association of California Water Agencies (ACWA), changed its position on the bill.

Commissioner Hartmann asked for further detail on how water would be moved from point A to point B and then to basins for recharge. He agrees this project is proactive but is concerned about opposition from the State Board. Commissioner Nomellini responded that "in lieu" works to supply the grower with water instead of using a well, but recharging the basin is the problem.

Commissioner Flinn commented that NSJWCD growers would welcome flood water on their property. He suggested the idea of delivering water to a field as opposed to a pond. Flood waters on property can actually benefit the ground, clears up issues and makes for more productivity. Building ponds is not necessary to recharge the basin.

Commissioner Christensen responded that the groundwater deficit is so overwhelming and grape growers support receiving flood water on their property. Growers report that the groundwater is severely depleted in the fall. He added that technology has come "full circle" starting with flood irrigating of grapes, to drip, and back to flood irrigation. Grape growers say flooding the grapes in the fall puts the grapes "to sleep" for yield in the spring. But, this flood water is not always available because EBMUD does not inform when water is released. EBMUD has had releases in the summer months of 3,000-4,000 CFS range in order to clear space for the fall months.

Commissioner Nomellini suggested that WID select one project and see if they can obtain a permit. Commissioner Christensen responded they do not want a sole WID project, and envision a County/GBA project as it could involve various water rights. Secretary Nakagawa commented that options are to do such a project or cut back on pumpers.

B. Status of Lower San Joaquin River Feasibility and Inclusion of RD 17 – John Maguire/Roger Churchwell

Mr. Roger Churchwell, San Joaquin Area Flood Control Agency (SJAFCA) Deputy Executive Director gave an update of the Lower San Joaquin Feasibility study. He reported the study has been slow due to the United States Army Corps of Engineers (the Corps) waiting on biological opinions. Having received the last biological opinion from the California Department of Fish and Wildlife, those documents will be pulled into the Environmental Impact Report. The schedule will be reworked to meet the milestone of September/October for the Civil Works Review Board. Because of the delays, a waiver will be requested from Headquarters due to the “3 by 3 by 3” Planning Program. However, the turnaround for the last waiver requested from Headquarters was eight months. Needed funding could also further delay the project. Mr. Churchwell turned the discussion to Fritz Buchman.

Mr. Fritz Buchman, San Joaquin County Public Works Deputy Director, reported on recent developments in the study related to the RD 17 area. This area was removed from the recommended plan in the study last year as the Corps was concerned that including it was not consistent with Executive Order 11088, which discouraged new development in flood plains. The cities within RD 17 (Lathrop, Manteca, and Stockton), the County, and RD 17 are in the process of entering into an MOU to pursue 200 year flood protection throughout RD 17. There is effort to spark renewed interest in the RD 17 area in the current study. The agency has expressed this desire to Corps staff and plan to work with the staff towards their goal.

Vice-Chair Price inquired what will happen if all parties do not agree during the process. Mr. Buchman stated that the study may not move forward. The Corps has suggested completion of the current study without RD 17 in the recommended plan. Following completion, a follow-up study including RD 17 could be pursued, or an analysis could be conducted to modify the existing study. However, there is concern that approach is unlikely to materialize. Vice-Chair Price asked if that implies other projects cannot be done beyond RD 17 within the umbrella of that feasibility study due to lack of funding. Mr. Buchman replied that to establish a federal interest, the project needs to be part of the National Economic Development (NED) Plan in the study to establish eligibility for funding or crediting. Thus, if an area is not part of the NED Plan, it will not be included in the study. If the RD 17 area was not included in the rest of the study moving forward, the other areas would be eligible for federal participation.

Commissioner Nomellini commented that RD 17 and the rest of the community has been part of the study for six years, costing hundreds of thousands of dollars from the district, and millions of dollars from the State, and has proven favorable cost benefits all the way through. Because of the agricultural land between the cities of Stockton and Lathrop, if the levees were upgraded it would facilitate and encourage development in this area (the flood plains). The study was arbitrarily rejected as SJAFCA kept RD 17 in the study. Presently, Congress is interested in building a VA Hospital in this area and are revisiting, politically. Congressman Denham has stated he will not have his committee approve the Chief Report unless RD 17 is included. Commissioner Nomellini added that if the cost benefit is inadequate, there will be no federal assistance for that part of our basin, which is important for civil defense and is a critical portion of land encompassing Interstate 5, San Joaquin General Hospital, and the County Jail. We do not want to lose North Stockton and Central Stockton projects or RD 17.

**C. Delta Stewardship Council's Delta Levees Investment Strategy – John Maguire/
Roger Churchwell**

Mr. Buchman gave an update on recent and upcoming activities associated with the Delta Stewardship Council's (DSC) Delta Levees Investment Strategy. In 2009, Delta Reform Act called upon the DSC to lead a multi-agency effort to update priorities for state investments in the Delta levee system. In response, Counsel launched Delta Levees Investment Strategy to combine risk analysis, economics, engineering, and decision making techniques to identify funding priorities and assemble comprehensive investment strategies for Delta levees. This effort was initiated in Spring 2014. Since then, DSC staff has done extensive outreach including numerous public meetings, produced informational literature pertinent to strategy development, and hosted a public workshop focused on presenting and receiving input regarding the computerized decision support tool. County staff attended the workshop to provide input regarding several aspects of this support tool including inconsistencies in analysis of water conveyances and habitat improvements in the Stockton and Sacramento areas. The June meeting agenda will include an update from staff on the development process. The July meeting will include a full day workshop on strategy which will focus on the decision support tool. Staff will continue to monitor progress on the strategy and report developments to the Commission.

Mr. Buchman concluded his presentation and discussion was opened.

Vice-Chair Price asked if this "statement" is necessary to insure funding will be available. Mr. Buchman answered affirmatively. It is intended to guide the decision making process in the Delta levee investments. Commissioner Nomellini added the Delta Protection Commission (DPC) is carrying out a study funded by the State to evaluate establishing mechanisms other than general funding for Delta levees. One alternative would be an assessment district concept that would apply to all beneficiaries. A Prop 218 benefit assessment is subject to a ballot process. Alternate Miller expressed opinion that the DPC may be looking for "specific" investments as opposed to the levee system as a whole. Commissioner Nomellini interjected that DWR already has a system for levee programs which includes a point system for certain benefits (i.e., higher rating for location and distance from river to pumps, priority if located in western Delta eight islands, salinity and habitat improvements, etc). In addition, recent litigation in the Stewardship Council found the Council cannot limit its consideration to developments in the Delta. The DSC must look at all developments and interests that use water from the Delta and must set measurable standards for reduction and reliance. This development was viewed as a victory to the Delta Stewardship Council.

**D. Presentation and Discussion on the Spring 2016 Groundwater Monitoring Report –
Gerardo Dominguez**

Mr. Gerardo Dominguez, San Joaquin County Water Resources Engineer IV, gave a presentation on the Spring 2016 Groundwater Monitoring Report. Measurements were taken from March through the beginning of April 2016 to include as many wells possible in the data. There were 400 wells measured, 250 of those wells serviced by the County. Data collection varies upon access to property, or intrusion of dogs, bees, and/or snakes.

The Spring reports consists of two sections: Rainfall Distribution and Groundwater Elevation Monitoring.

Rainfall Distribution – Four rain gauges are monitored. Stockton Fire Station measured “under average” total annual rainfall, as in the last five years. However, 2016 rainfall was better than previous years. Northern measurements show Elliot Fire Station with an “average” total rainfall, and Camp Pardee measured “above average” total rainfall. These northern areas provide a lot of recharge.

Chairman McGurk asked whether the recharge from Elliot Station / Pardee comes from circulation or flows underground. Mr. Dominguez answered from Pardee – the aquifer goes up, and with rainfall in the mountains the recharge comes down and around to our depot system.

Monthly rainfalls indicate some of the best rainfalls in December 2015 to January 2016. The monthly distribution for the Stockton Fire Station did not show a lot of rain for this area. However, areas north of Lodi show 80 inches of rainfall at Elliot Station. Because of the wet winter, expectations of rainfall measurements were slightly higher than actually received.

Groundwater Elevation Monitoring – Groundwater levels dropped an average of two feet in 2015-16. In 2014-15, groundwater levels dropped three feet. Some of the more critical areas were Stockton East Water District (SEWD) with a four foot drop, and Central San Joaquin Water Conservation District (CSJWCD).

Mr. Dominguez displayed a slide showing a map of all wells in the County. Red arrows indicated groundwater levels went down; blue arrows indicated groundwater levels went up; and; the green dots indicated no change in the groundwater levels. Mapping shows multiple red arrows (decrease), blue arrows around the City of Stockton, CSJWCD and Tracy area (increase), and green dots (no change). The Tracy area’s increase of groundwater levels may be due to groundwater recharge or injections from the Tracy Treatment Plant.

The 2016 groundwater contour map showing groundwater elevation indicates a negative 70 feet for SEWD. Vice-Chair McGurk explained that to meet the quality levels necessary for the treated surface water sold wholesale to Cal Water and the City of Stockton, SEWD had to pump out some of the accumulated 60,000 acre feet of water at 7,000 gallons a minute.

The 2016 groundwater depth map indicates a shift to the right. This means the depth of groundwater increased. Commissioner Nomellini asked if water quality is still good in the depressed area. Chairman McGurk answered there is a monitoring well to the east, and there is data available. Mr. Nakagawa commented that data for the west side will show up on the Fall 2016 monitoring report. Currently, not all wells are monitored, but additional wells could be added to the monitoring plan for water quality, especially nitrates and salinity. Mr. Dominguez stated wells are monitored monthly for depth but not quality. Mr. Nakagawa explained if more “in-depth” monitoring of the wells is desired, there may be a need to invest in portable pumps and generators. In addition, the standards for well monitoring for water quality entail purging the well via the portable pump and generator. Doing so would incur labor and capital costs (approximately \$50-60k per year for labor and an initial capital investment of \$10-15k).

Mr. Dominguez reported that the cross section lines of the groundwater contours include three sections monitored: Fall 1992, Spring 1996, and Spring 2016 (which shows some areas fall under the Fall 1992 levels).

Mr. Dominguez concluded his presentation and discussion was opened.

Commissioner Hartmann asked if there are any surface subsidence measurements. Mr. Dominguez answered subsidence measurements are not conducted but past measures were in the order of millimeters and centimeters. Subsidence is not a major concern in San Joaquin County. Mr. Nakagawa added there is a USGS Subsidence Monitoring Station in Stockton with measurement going up and down in millimeters, usually the result of soil issues.

Commissioner Flinn commented on the lack of well data in the Lodi area. Mr. Dominguez said Lodi is just starting to provide data, which had not been received by this report date. Lodi well data will be included in the Fall 2016 report. Commissioner Flinn questioned the six “blue” arrows located north of Lodi on the groundwater elevations map indicating an increase in levels. Mr. Dominguez responded that the increase could be attributed to the location of the Mokelumne River, which is above Lodi. Mr. Nakagawa stated that monthly monitoring had been conducted during the drought in these past few years. The high or low points in well levels could easily be missed by a month as indicated in data. Ideal scheduling to conduct monitoring is the third week in March, and in attempt to compress the 2-week window, more people have been added to the sampling crew. He added that some wells should be monitored monthly as we get into SGMA.

Commissioner Nomellini asked what the monitoring plan procedure is for a running well during scheduled inspection. Mr. Dominguez and Mr. Nakagawa both responded the well is recorded as such and the crew is instructed to leave. Mr. Gerardo added a second attempt will be made within 2-7 days. Vice-Chair Price inquired whether automatic sensors could be used. Mr. Nakagawa responded that automatic sensors make sense for “real-time” pumping operations. Agricultural and domestic wells are not good candidates as they are being pumped all the time, or construction information may not be readily available. For a dedicated monitoring well, automatic sensors may make sense, but is costly.

Commissioner Hartmann asked if it is a condition of a well permit that the owners must allow the County to monitor. Mr. Nakagawa replied it is not a current condition but added it is a great idea and the concept has been considered. Rod Estrada, San Joaquin County Environmental Health Program Coordinator, added this new condition was approved June 14, 2016 and will be implemented as part of their fee increase for new well permits.

Commissioner Flinn commented that past reports have included data from previous years. He found this beneficial and asked if reports could reflect prior profiles again. Mr. Dominguez said including this information is possible, if requested. Commissioner Nomellini added the DWR California Data Exchange Center (CDEC) website has an active page to show storage for a specific year. Mr. Nakagawa interjected that in the past, a triangle map has been used which reflected prior and present data concurrently. This could be brought back and presented at future meetings.

II. Communications:

- A. June 7, 2016, Recordnet.com, “Appeals Court Puts Temporary Stop to Delta Land Buy.”**
- B. June 7, 2016, Latimes.com, “State Water Board Drops Record \$1.5-Million Drought Fine.”**
- C. June 8, 2016, ACWA.com, “State Water Board Clarifies Deadlines and Information Required Under New Regulation.”**

Public Comment:

Mr. Nakagawa announced that the GBA Board is hosting a Groundwater 101 Workshop on Wednesday, July 13, 2016. The purpose of the workshop is to help increase the understanding of the geology in and around San Joaquin County. This is especially important for those actively involved with the implementation of the Sustainable Groundwater Management Act (SGMA). Bill Brewster, Senior Engineering Geologist with DWR will be a presenter and a modest lunch will be provided. Mr. Nakagawa extended an invitation to the Commission and an informational flyer was distributed.

Next Regular Meeting: July 20, 2016, at 1:00 p.m.
Public Health Conference Room

Adjournment: 3:50 p.m.



**SAN JOAQUIN COUNTY
FLOOD CONTROL & WATER
CONSERVATION DISTRICT**

**ADVISORY WATER COMMISSION
MEETING OF JUNE 15, 2016**

ATTENDANCE SHEET

NAME	AFFILIATION	E-MAIL ADDRESS	PHONE
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Brent Williams	Stakeholder	Same	
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SCOT MacDILL	SEWD		
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Will Price	AT large	Same	
Andrus Bruntzen	WID MGR/SEC/PRES	widinvestigation@gmail.com	281.625.8438

ATTACHMENT I.A.



June 22, 2016

VIA EMAIL

Keith Boggs
Assistant Chief Executive Officer
County of Stanislaus
1010 10th Street, Suite 6500
Modesto, CA 95354

RE: Economic Analysis of Unimpaired Flows in Stanislaus County and Related Watersheds

Dear Mr. Boggs:

This letter confirms our agreement that the County of Stanislaus (hereinafter referred to as "Client") has retained *Stratecon Inc* (hereinafter referred to as "Stratecon") in the above captioned matter. This agreement letter sets forth the terms and conditions under which Client agrees to engage Stratecon for said expert services.

Terms and Conditions

Scope of Work

Stratecon shall prepare a written economic analysis of unimpaired flows in Stanislaus County consistent with the Draft Scope of Work attached hereto as Attachment 1. To that end, Stratecon will work with Client to define scenarios calculating how alternative State Water Resource Control Board ("SWRCB") actions impact the timing, quantity and reliability of surface water supplies to identified municipal and agricultural water users in Stanislaus County. With that information, the Stratecon team will develop the necessary analysis to address the economic impacts of unimpaired flows.

The analysis will be based on bringing together five types of analysis to address the issues:

- Economic costs of water shortages
- Impact of water shortages on the local economy (gross output, income, employment, etc.)
- Impact of surface water on groundwater resources

- The impact on hydroelectric resources
- The impact on local recreation

Each component is briefly discussed below. To facilitate the coordination needed to conduct the study in an expedited manner, Stratecon requests the Client establish a Project Coordination Committee as described below.

Economic Cost of Water Shortages. Stratecon will use the methodology contained in the Department of Water Resources Draft Environmental Impact Report for the Bay-Delta Conservation Plan to estimate the economic losses suffered from water shortages.¹ The economic loss per acre-foot of a water shortage depends on the following factors:

- Water price—higher price, greater losses from shortages
- Incremental water cost (differs from water price due to fixed costs of water systems)—higher incremental water cost, lower losses from shortages
- Elasticity of demand (measure of the responsiveness of water demand to water price)—more responsive demand is to price, lower losses from shortages

With information on the water use and water price for water users included in the study, the economic losses from water shortages can be calculated for municipal and agricultural water users for the alternative scenarios concerning the impact of SWRCB actions on the availability of surface water.

Impact of Water Shortages on the Local Economy. Reduced water supplies have an impact on local income and employment. Stratecon will develop an IMPLAN model for the local economy to estimate the impact of restricted surface water supplies on gross output, income and employment. Stratecon will combine data from IMPLAN with supplemental data on local acreage, cropping patterns and crop budgets for agricultural operations. Given the study's scope of assessing impacts in three watersheds in Stanislaus, Merced and San Joaquin Counties, the IMPLAN model will be developed for the three county area. The study will highlight how the economic impacts will affect disadvantaged communities.

Impact on Groundwater. Stratecon will develop statistical models for key well elevations in the study area and explore how historical well elevations vary over time due to trend, availability of surface water, local rainfall and groundwater pumping. Stratecon has conducted a confidential study for an area in the Central Valley and found statistically reliable results. Stratecon will provide Client with written data requests for well elevations, local rainfall, surface water supplies and other factors. Stratecon believes that a longer historical data series the better. This allows Stratecon's study to take advantage of how the historic availability in surface water supplies over various time periods has impacted actual groundwater conditions. The sample of key wells should include supplies for disadvantaged communities to identity how SWRCB actions impact of the water supplies of those communities.

¹ Appendix 9..A *Economic Benefits of the BDCP and Take Alternatives*, The Brattle Group, David Sunding lead author, May 2013, pp 24-28.

Hydroelectric Resources. SWRCB action on unimpaired flows will impact hydroelectric power. Stratecon requests that the Client assist in the collection of lost hydropower estimates from the various operators impacted by SWRCB decision. Using those estimates as inputs, Stratecon can assess the economic costs and impacts from lost hydropower resources.

Local Recreation. Using historical recreation visitation and lake level elevation data for the potentially impacted reservoirs within the study area, we will develop statistical estimates of the incremental impacts on visitation to those reservoirs of changes in their levels. We will combine these estimates with estimates of the anticipated effects on the reservoirs' levels of the proposed increases in watershed environmental flows (to be provided by Client) and regional, third-party data on recreation visitor spending to evaluate the direct regional spending effects of those environmental flow increases. Finally, we will input the regional spending impact estimates into our IMPLAN models to evaluate their implications for the regional economies.

Other Issues. Stratecon will review other publicly-available studies concerning the economic and groundwater impact of surface water availability, including the 2012 SWRCB staff report. This review would assure that any problematic approaches taken in earlier studies are identified and the consequences are identified.

Project Coordination Committee. Stratecon requests that Client establish a Project Coordination Committee of Stanislaus County employees or consultants that will assist in identifying and collecting necessary local data and provide input/review of the development of work products and the underlying components studies described above. Stratecon believes that regular communication with the committee will assure that the best available information is included in the study and collected promptly to avoid slippage in the project schedule. While the specifics of communications should be worked out, Stratecon recommends the following:

- Initiate the study with a Stratecon team visit that would include discussion of all information requests and approval of a Stratecon proposed project plan identifying the timing of activities/milestones needed to assure the timely completion of the study.
- Weekly conference calls to keep the study effort on schedule
- Review team of work products.

Work Products. Stratecon shall prepare the following work products in accordance with a mutually agreed schedule:

- Project Plan
- Powerpoint presentations
- Written Economic Study

Term and Termination

see P 3 of Agreement.

The Agreement is effective as described below and shall continue until terminated. Either party may terminate this Agreement at any time by providing a 30-day written notice of termination to the other party.

Assuming that Client promptly responds to Stratecon data requests, it is anticipated that the study can be completed within 90 days.

Staffing and Fees

Stratecon bills for professional services plus actual expenses. See Attachment 2 for bio and recent testimony for Rodney T. Smith and Attachment 3 for bio for Jason Bass. Professional services are billed at the following hourly rates:

- Rodney T. Smith
 - Non-testimony: \$360/hour, reflecting 20% public agency discount
 - Testimony: \$550/hour
- Jason Bass (sub-contractor): \$185/hour
- Marta Weismann, Director of Research
 - \$100/hour
- Kelly Dietz, project coordination
 - \$50/hour

~~Reimbursable expenses, if any, shall include travel, photocopy, telephone, facsimile transmission charges, data acquisition and postage/delivery charges. Client agrees to pay Stratecon upon receipt of monthly bills.~~ *See P 2 of Agreement.*

~~Total fee for professional services for preparation of the report shall not exceed \$90,000.~~

Limitation of Liability

not a part

Client agrees that it shall ~~not~~ hold Stratecon liable or responsible for any claims, liabilities, damages or expenses asserted against or incurred by Client arising out of, or in connection with, the above-captioned project or the engagement by Client of Stratecon, except to the extent that any of the foregoing results solely from the gross negligence or bad faith conduct of Stratecon.

Governing Law

Not a part

This Agreement shall be constructed in accordance with the laws of the State of California.

Entire Agreement

This Agreement constitutes the entire agreement between the parties with respect to the subject matter herein. No provision of this Agreement shall be deemed waived, amended or modified by either party, unless such waiver, amendment or modification is in writing and signed by the authorized representative of the party against whom it is sought to enforce such waiver, amendment or modification.

Stratecon will have no obligation to commence its provision of professional services until it has received a signed copy of this letter. Please sign below and return one copy of this letter agreement for our files.

Sincerely,



Rodney T. Smith
President

Stratecon EIN: 95-3883154

Signature: _____

Date: _____

Not a part

Attachment 1

ECONOMIC ANALYSIS UNIMPAIRED FLOWS in Stanislaus County DRAFT SCOPE OF WORK

POTENTIAL PROJECT STUDY AREAS:

- Merced, Stanislaus, and Tuolumne River watersheds from the confluence of the San Joaquin River upstream to the rim dams (New Melones, Don Pedro, New Exchequer).
- Main diverters off the Tuolumne:
 - City and County of San Francisco,
 - Turlock and Modesto IDs.
- Main diverter on the Merced is Merced ID.
- Diverters on the Stanislaus are U.S. Bureau of Reclamation (serving contractors: Stockton East, Central San Joaquin Water Agency), Oakdale ID & South SJ ID
- Drinking water suppliers that receive treated surface water:
 - City of Modesto receives surface water from MID.
 - Manteca, Lathrop, Tracy receive surface water from SSJID.
 - Escalon is attempting to obtain surface supplies from SSJID;
 - Turlock and Ceres are attempting to receive surface water from TID.

POTENTIAL IMPACTS:

- Reduction in surface supplies for agricultural use, and redirected impacts to groundwater
- Impacts on groundwater sustainability
- Impacts on drinking water supplies and drinking water quality;
- Impacts to disadvantaged communities that rely on groundwater (water quality and water supply);
- Potential impacts to water suppliers for loss of surface water and limited ability to pump groundwater for replacement supplies (issues with contamination- 123TCP, arsenic, nitrates)
- Impacts on economy as a result of fallowing ag land:
- Impacts to farmers, farm workers, ag related businesses, food processors,
- County tax base once water becomes year to year issue (without dry year off ramps in flow proposal land value of current irrigated lands is likely to face significant decline, penalizing funding source for educational and basic municipal services),
- Impacts to drinking water providers as a result of redirected impacts.

- NOTE: Drinking water agencies already are burdened with costs associated with groundwater basin issues. Removal of surface water will worsen this problem.
- Recreation impacts due to drawing down of reservoirs
- Increased cost to irrigation districts and water users

ASSUMPTIONS:

- 1) 2012 report was based on unrealistic assumptions. In part it states that water required for any new or increased municipal or industrial use would come from offsets in developed water resources, not groundwater. This would suggest that any growth (UC Merced, other developments) must be offset with addition reductions of current irrigated lands. This is more than simply fallowing land for a year, it is taking it out of permanent production, and taking the water that was allocated to that land. A point to consider: orchard land is more valuable than land that can be fallowed year to year depending on water supply. Orchards cannot be fallowed. This alone will result in large scale devaluation of AG land.

2012 economic assumptions must be reviewed, and they must be analyzed in contrast to any changes in updated report.

- 2) Economic analysis: independent, credible and reflective of impacts on groundwater, on economic development, on provision of services by municipal governments (land values and more costly services), on our economic base and on jobs.
- 3) Study will also need to draw comparison to the only example of impacts of a water grab of this size, the CVPIA in 1992. The west side communities are a stark illustration of what is likely to happen here if the water board plans are not modified.
- 4) Analysis of impact on disadvantaged communities.
 - Which ones are most impacted?
 - Map the area.
 - Define and cost out the proposal impacts on the communities.
 - Drinking water quality costs increase because of groundwater recharge loss, who pays cost of mitigation?
 - Measure water quality impacts of proposal on these communities. (Many Merced cities and schools already have drinking water quality problems. Turlock and Ceres have them also. Modesto is in better shape, largely because of the surface water from MID and the recharge value of irrigation water.
 - Quality impacts and ambient air temperature increases from fallowing AG land(s).
 - Costs of domestic water treatment from less recharge and increase in treatment costs.

Attachment 2
Rodney T. Smith, Ph.D.

Rodney Smith is President of *Stratecon Inc* (www.stratwater.com), an economics and strategic planning consulting firm specializing in the economics, finance, and policy of water resources, President of *Baja Norte Water Resources, LLC*, a project developer of bi-national water projects, and Managing Member of AquaFair LLC, a web-based exchange for water (www.aquafairexchange.com).

Dr. Smith is involved as an advisor in the acquisition of water rights throughout the western United States and in the sale and leasing of water rights and water supplies to public and private sector water users. He has consulted extensively for public and private sector clients, including high net worth investors, on business and public policy issues concerning water resources, including California's Drought Water Bank, the government of New South Wales, Australia's effort to privatize irrigation organizations, and the economic, financial, legal, and political dimensions of water transactions in many western states. Rod worked on the IID/San Diego County Water Authority Agreement, the settlement of Colorado River disputes on behalf of the Imperial Irrigation District, and the acquisition of 42,000 acres from the United States Filter Corporation, an unit of Veolia Environment. He is routinely involved in economic valuation of water rights, water investments, and negotiation of water acquisition and transportation agreements. He also performed studies on the economic risk of water shortages and valuation of surface water and groundwater storage. He has also served as an expert witness in the economic valuation of groundwater resources, disputes over the economic interpretation of water contracts, economics of water conservation and water use practices, and the socio-economic impacts of land fallowing. Dr. Smith has written extensively on the law, economics, and finance of water resources and water policy. In 1987, he created and became co-editor of Stratecon's paid-circulation publication *Water Strategist: A Quarterly Analysis of Water Marketing, Finance, Legislation, and Litigation*, In January 1999, the publication became a monthly web-based publication (www.waterstrategist.com) and information service, *Water Strategist*, which extended its coverage to include developments in the emerging private corporate participation in western water matters. In addition, Stratecon, Inc. introduced *The Water Strategist Community*, (www.waterchat.com), a web based news portal providing free access to the direct press releases and important reports from over 300 public agencies, water firms and bond rating agencies. In 2011, Stratecon stopped publishing *Water Strategist* and replaced it with a contract research service based on its proprietary database. Earlier in 2013, Stratecon introduced prediction markets to the water industry (www.waterpolicymarkets.com), and in 2014, Stratecon introduced Journal of Water (www.journalofwater.com).

Rod is also known for his books *Troubled Waters: Financing Water in the West* and *Trading Water: A Legal Framework for Water Marketing*, sponsored by the Ford Foundation through grants to the Council of Governors' Policy Advisors. Former Secretary of the Interior Bruce Babbitt wrote the forwards for both books.

Dr. Smith received his Ph.D. in Economics from the University of Chicago and a Bachelor of Arts in Economics from the University of California at Los Angeles. Prior to making a full time commitment to the private sector, he was a professor of economics at Claremont McKenna College for fifteen years, Director of the *Lowe Institute of Political Economy*, and a member of the editorial board of *Economic Inquiry*, the professional economics research journal of the *Western Economics Association*. In 1989, he was the John M. Olin Visiting Professor of Law and Economics at Columbia Law School. In the late 1970s and early 1980s, he was also a visiting assistant professor of economics at the Graduate School of Business, University of Chicago, where he also served as the Associate Director of the *Center for the Study of the Economy and the State*, founded by the late Nobel Prize winner in economics, George Stigler. Rod started his career after graduate school as an economist at the RAND Corporation. He currently serves on the Board of Visitors of the School of Politics and Economics, Claremont Graduate University.

Recent Testimony

Goleta Ag Preservation v. Goleta Water District (2016). Expert for plaintiff Goleta Ag Preservation assessing whether the district's rate structure including a drought surcharge is consistent with applicable cost-of-service rate-making principles. Status: pending trial

Stockton East Water District and Central San Joaquin Water Conservation District v. United States (2015). Expert for plaintiff Central San Joaquin Water Conservation District to determine a reasonable forecast of the anticipated demand for surface water by landowners in Central San Joaquin Water Conservation District during 1999 through 2004 assuming that the Bureau of Reclamation did not fail to make water available to Central San Joaquin.

Clear Creek Community Services District v United States: (2014). Expert for plaintiff to estimate the economic losses from a reduction in Clear Creek's contract amount for municipal and industrial water use stated in the district's contract with the Bureau of Reclamation: Status: pending trial

William Meyers, George Ravenscroft, Palomar Artesan Springs, Palomar Spring Water Corporation v. San Diego Gas & Electric Company (2012). Expert for plaintiffs to estimate the economic valuation of the income permanently lost when a diesel spill by San Diego Gas & Electric destroyed Well No. 1 owned by Palomar Artesian Springs Partnerships. Status: pending trial.

Stockton East Water District, Central San Joaquin Water Conservation District and California Water Service Company, San Joaquin County and Stockton, City v. United States (2012). Expert witness for Central San Joaquin Water Conservation District to determine the

economic value of water not delivered to the district due to a breach of contract by the Bureau of Reclamation. Status: trial completed

Central San Joaquin Water Conservation District v. Stockton East Water District (2012). Expert witness for Central San Joaquin Water Conservation District to determine the economic benefit Stockton East Water District enjoys from the wheeling of Central's New Melones water. Status: pending trial

Poe Investment Company v. Lennar Stevenson Holdings LLC (2011). Expert witness for Poe Investment Company regarding whether Lennar met its obligations under a prior agreement to secure a water supply for a real estate development project. Status: settled

Primex v, Chapparal Farms Inc, Cal Pure Pistachios Inc. and Paramount Farming Inc (2010). Expert witness for Paramount Farming to address whether Paramount had market power in California water market. Status: settled.

Vail Lake v. Rancho California Water District (2009). Witness for landowner. Provided testimony regarding potential for landowner to develop a water storage program.

Sandridge Partners v. Belridge Water Storage District (2008). Expert witness for Paramount Farming regarding the economic impact of an action taken by the Board of Directors of the Belridge Water Storage District on Paramount Farming. Status: settled

Imperial Irrigation District v. San Diego County Water Authority (2007). Expert witness for Imperial Irrigation District. Provided testimony regarding contractual provisions related to mitigation for the socioeconomic impacts attributable to land fallowing for the transfer of conserved water to San Diego and for mitigation water to Salton Sea. Status: Settled

Casitas Mutual Water District v. United States (2007). Expert witness for Casitas Mutual Water District. Provided economic valuation of the loss of water supply suffered by the Casitas Municipal Water District from the Ventura River Project (Lake Casitas) due to changes in operational criteria at Robles Diversion Dam required by a Biological Opinion by the National Oceanic & Atmospheric Administration and physical limitations to diversion capacity caused by a fish screen installed at the Robles Fish Passage Facility. Status: U.S. Court of Federal Claims issued opinion concluding that actions did not constitute a regulatory taking, reversed on appeal. Status: Decision that taking not ripe for judicial review.

Bronwood v. Tri-Center Industrial Center (2006). Expert witness for Bronwood. Provided economic valuation of water rights and water service area related to a nexus of agreements between Tri-Center Industrial Center and Sierra Pacific concerning water right exchanges, dismissal of protests regarding water right applications, and allocation of service areas for water and power among the parties. Status: Completed

Board of Supervisors of the County of Yolo v. Conaway Conservancy Group (2006). Expert witness for Conaway Conservancy Group. Provided economic valuation of marketable water from implementation of long-term water management plan that maximizes the economic value of the group's groundwater and surface water rights. Status: Settled (Yolo County terminated condemnation)

California-American Water v. City of Seaside et al (2005). Expert witness for City of Seaside. Provided economic valuation of reductions in pumping allowed under alternative proposed management strategies for groundwater basin in Monterey County. Status: Completed

Slemmer v. Fontana Union (2005). Expert witness for Slemmer, a minority shareholder in Fontana Union. Provided economic valuation of water rights appurtenant to mutual water company shares. Status: Settled

Sierra Club and Owens Valley Committee v. City of Los Angeles, et al before Inyo County Superior Court in California (2005). Expert witness for Sierra Club and Owens Valley Committee. Provided economic valuation of the City of Los Angeles's economic gain from delaying implementation of projects identified in a 1997 Memorandum of Understanding between the City of Los Angeles and Inyo County, the State of California, the Owens Valley Committee and the Sierra Club. Status: Completed

In Support of Recovery of Litigation Memorandum Account, Application 03-10-057 before the California Public Utilities Commission (2005). Expert witness for the Southern California Water Company. Provided economic valuation of impact of contamination on the groundwater rights. Status: Completed

American States Water Company v. State of California and American States Water Company v. Aerojet General Corporation (1999-2004). Expert witness for American States Water Company. Provided economic valuation of impact of groundwater contamination. Status: Settled

IID v. United States, Federal District Court of Southern California (2003): Case involves Secretary of the Interior action to reduce the quantity of water available under the Colorado River water right of the Imperial Irrigation District. Expert witness for the Imperial Irrigation District. Provided economic analysis of Imperial's water use, the economic cost of water conservation, the economic impact of regulatory obligations on the local economy, and the economic foundation of Secretary of the Interior's regulatory decision making. Status: Settled

Imperial Irrigation District and San Diego County Water Authority Joint Petition for Approval of a Long-Term Transfer of Conserved Water, before the California State Water Resources Control Board (2002). Proceeding involved the review of proposed transfer pursuant to state law. Expert witness on behalf of the Imperial Irrigation District. Provided testimony on the economics of the proposed transfer, economics of water conservation and Imperial's water

use, and the economics of land fallowing. *Status:* Completed with regulatory approval of transaction.

Orchard Hill LLC v. Julian Community Services District (2002). Case involved contamination of landowner's well. Expert witness on behalf of landowner. Provided economic valuation of groundwater rights destroyed by contamination. *Status:* Completed

Southern California Water Company v. Water Replenishment District (2001). Case involved definition of rights for groundwater storage and conjunctive use programs. Expert testimony on behalf of a group of groundwater producers. Provided comparative economic analysis of decentralized versus centralized institutions and the role of tradable rights. *Status:* Completed

Fontana Water Resources Inc. v. Cucamonga County Water District, San Bernardino County, CA (2001): Case involved interpretation of pricing provisions of long-term lease in light of financial restructuring of Metropolitan Water District of Southern California ("Metropolitan"). Expert witness for Fontana Water Resources. Provided economic interpretation of long-term water lease and analysis of Metropolitan's rate structure. *Status:* Settled

City of Sweetwater v. Duer Wagner and Company, District Court of Nolan County, Texas (2000): Case involved city's condemnation of Wagner's groundwater rights. Expert witness for Wagner. Provided economic valuation of groundwater rights. *Status:* Ongoing

Scalzo v. Vermeulen, Orange County, CA (2000): Case involved dispute over marketing of groundwater jointly owned by parties. Expert witness on behalf of Scalzo. Provided economic valuation of groundwater rights. *Status:* Settled

Attachment 3

Jason M. Bass, CPA, CFA

Jason Bass is a founder and Principal of the natural resource, real estate and environmental finance and economic advisory firm EcoGlobal Natural Resources. He is an economist and financial analyst with 25 + years of experience working on a wide range of resource- and real estate-related development, market and management issues. Jason's primary areas of expertise include: water rights; economic and financial feasibility analysis; real estate, resource and business valuation; socio-economic impact assessment; damages/lost profits analysis (in litigation); ability-to-pay and rate analysis; and water and recreation resource planning. Clients he has worked for in these areas have included the U.S. National Park Service, the U.S. Bureau of Reclamation, the U.S. Department of Justice, the Bureau of Indian Affairs, Imperial Irrigation District, Trinity County Department of Planning, the Central Utah Water Conservancy District, California Department of Water Resources, the Eastern New Mexico Water Conservancy District, Edison Mission Energy, Southwest Texas Water Resources, over fifteen Indian tribes and numerous law firms and developers.

Projects that Jason has managed or performed have had the following objectives, among others:

- Evaluate the economic and financial feasibility of resource and real estate development projects for implementation decision-making and financing;
- Assess impacts of water resource and real estate development project and policy implementation and operations on local and regional socio-economic conditions (using the IMPLAN model);
- Estimate monetary damages related to: A) historical and future misappropriation and misuse of water and other natural resources, particularly as it relates to Indian tribes; and B) lodging, casino and mix-use real estate development- and management-associated legal disputes involving breach of contract, wrongful termination, unfair competition and construction defect matters, among others.
- Design and implement methodologies for economic cost-benefit analysis;
- Determine the fair market value and prospective investment rates-of-return associated with real estate and natural resource asset development and acquisition;
- Assess municipal, agricultural, commercial and industrial utility end user ability- and willingness-to-pay for water resource development.
- Collect primary and secondary data related to natural resource management, planning and degradation;
- Estimate market-based and income-based rents to determine equitable resource use charges;
- Prepare environmental, and other compliance documentation in water resource and land use planning and policy proceedings;
- Estimate economic costs and benefits of environmental quality and recreation resource enhancement programs.

As a principal with Dornbusch Associates, Jason provided over two hours of direct, cross-examination and rebuttal testimony regarding the value of the hospitality concession at the South Rim of Grand Canyon National Park (which grosses about \$70 million annually). He also provided expert testimony in a FERC hearing regarding charges due the Menominee Indian Tribe of Wisconsin from Wisconsin Power & Light for the latter's use of tribal land for power generation. In addition he provided written expert-witness testimony regarding the valuation and investment opportunity associated with the primary retail concession operation at Yellowstone National Park and agricultural water values and associated market-supportable water rates within the Wapato Irrigation District in Washington State. Jason has been deposed on several occasions. He has also testified in court on his monetary damage assessment of lost compensation in a wrongful termination matter. Most recently he assisted the Jicarilla Apache Nation in its negotiations with the Bureau of Reclamation regarding the Nation's repayment obligation for the water that will be delivered to the Nation by the proposed Navajo-Gallup water supply project. He also prepared a white paper challenging the application of the Federal Principles and Guidelines for water resource development economic planning to cost-benefit analysis of water projects in quantifying Native American Federal Reserved Water Rights. This effort was performed under contract with the U.S. Department of Justice. Jason was subsequently engaged by the Department of Justice to prepare its Assessment and Recommendation Report in support of legislation for the settlement of the water rights of the Blackfeet Indian Nation of Montana.

Jason holds a Bachelors of Science in the Political Economy of Natural Resources from the University of California, Berkeley (1988) and a Masters of Science in Agricultural and Resource Economics from the University of California, Davis (1992). From 1992 to 1993, he undertook a year of coursework, teaching and research within the Economics Department of the University of British Columbia, Canada. He is a Certified Public Accountant (CPA) in the State California and holds the Chartered Financial Analyst (CFA) designation from the CFA Institute.

The following is a brief description of only a portion of Jason's resource, real estate and environmental financial and economic analysis experience:

Economic and Financial Feasibility Analysis/Valuation

- Navajo Indian Nation – Assisting the Nation's utility authority to develop a methodology for assessing Nation household and business ability-to-pay for water service and associated rate structure that will allow the Nation to meet its Navajo Gallup Water Supply Project cost obligations. Client: Navajo Nation
- Eastern New Mexico – Performed economic feasibility, ability-to-pay and water rate structuring analyses for a proposed multi-city rural M&I surface water supply system; the

- Eastern New Mexico Water Supply Project. Analysis included valuation of available surface water supplies to determine appropriate water rates. Participated in public meetings to address community concerns regarding water rates. Client: Eastern New Mexico Water Conservancy District.
- Hopi Indian Reservation – Evaluating the economic feasibility of a proposed coal powered electrical generation plant as part of the Tribe’s and United State’s efforts to quantify and establish the Tribe’s Federal Reserved water rights. Client: U.S. Department of Justice.
 - San Antonio, Texas – Assisted with financial feasibility and impact analyses related to the proposed private development of a new water supply for the City of San Antonio. Analyses include application of statistical methods to evaluate potential project impacts on regional aquifer conditions and associated water costs. Client: Southwest Texas Water Resources.
 - San Carlos Indian Reservation – Evaluating the economic and financial feasibility of alternative proposed development projects on the Reservation and associated water service rate structuring to meet the Tribe’s future anticipated water system OM&R expenses.
 - Jicarilla Apache Indian Nation, Northern New Mexico – Evaluated Nation’s ability-to-pay for a new water pipeline to be constructed by Bureau of Reclamation. Analysis focused on quantification of ability-to-pay of potential residential, commercial, agricultural and industrial water users on the Reservation and associated water rate structuring. Participated in negotiations with Reclamation on the Reservation and in Washington D.C. regarding Tribe’s ultimate repayment obligation. Client: Jicarilla Apache Nation.
 - Cherokee Nation of Oklahoma – Evaluated the monetary value of the Nation’s water resources under alternative uses including both consumptive uses such as thermos-electric power generation, irrigation and municipal water service and non-consumptive uses such as recreation, hydro-electric power generation and navigation. Client: Cherokee Nation
 - Kings Canyon National Park – Assisted incumbent operator of Park’s lodging, food and beverage and retail concession to prepare financial components of proposal for new ten year contract to operate concession. As part of effort, prepared investment return model to assist client in determining the capital investment it would be willing to make in the concession and the minimum fee it would be willing to pay the National Park Service for the Contract. Client: Kings Canyon Park Services, LLC.
 - Conaway Ranch, Northern California – Estimated the fair market value of the Ranch’s approximately 50,000 acre-feet plus of senior Sacramento River surface water rights. The Ranch’s owners were seeking to either sell or lease the water to several prospective northern and southern California buyers. The analysis required consideration of institutional constraints to water transfers, particularly to southern California, pricing under short term versus long term lease structures, and potential transaction costs. Client: Conaway Preservation Group.
 - Elgin Illinois – Evaluated the market feasibility of a proposed concert venue and entertainment center development adjacent to the Grand Victoria Casino in Elgin, Illinois. The City of Elgin and Casino are interested in the development as a means to create regional entertainment district in downtown Elgin. Client: Hospitality and Gaming Solutions, LLC.
 - Wind River Indian Reservation – Assessed the market value of the Tribe’s water rights under alternative scenarios of use and/or lease, including on-Reservation irrigation and off-Reservation power plant development. In addition, analyzed the potential economic

impacts to local non-Indian irrigators from a reduction in their supply of water to satisfy the Tribe's Federal Reserved water rights claim. Client: Shoshone and Arapaho Tribes of the Wind River Reservation.

- Garwood Irrigation District, Texas – Assisted with the market valuation of Garwood Irrigation District's water rights under alternative scenarios for the water's use and/or sale, including evaluation of an option for transfer of the water to the City of Galveston. Engagement purpose was to help resolve a tax dispute between the District and the Internal Revenue Service related to taxes due from the District subsequent to its conversion from a C-corporation to an S-corporation. Client: Garwood Irrigation District.
- Wapato Irrigation District, Washington – Provided written economic testimony on the value of water within the District and associated ability of certain land-holders to pay for current and past due irrigation district assessments on their land with income generated through the production of crops. Client: U.S. Department of Justice.
- Pala Indian Reservation, California – Provided a financial feasibility evaluation of proposed acquisition and development of an off-Reservation spring. Primary purpose of the analysis was to derive alternative valuations of the spring based on range of assumptions regarding Tribe's investment rate of return objectives and prevailing market value of wholesale water for bottling. Client: Pala Band of Mission Indians.
- Duck Valley, Idaho – Assessed the monetary damages to the Shoshone-Paiute Tribes of the Duck Valley Indian Reservation due to off-Reservation agricultural diversions of their water and the destruction of the salmon fishery of the Owyhee River. As part of engagement, prepared a valuation of ranch lands and water rights held by non-Indians upstream of the Reservation under different basin water supply scenarios. Valuation analysis was used to facilitate water allocation and compensation negotiations between the Tribe and its non-Indian neighbors. Client: Shoshone-Paiute Tribes.
- Tule River Indian Reservation, California – Prepared an assessment of the fair market value and associated potential lease rates for the Tribe's water under various water transfer/lease scenarios to both agricultural and municipal & industrial users. Analysis was used in support of Tribe's negotiation with downstream irrigators regarding future basin-wide water supply management and allocations. Client: Tule River Indian Tribe (funded by U.S. Bureau of Reclamation).
- Grand Canyon and Yellowstone National Parks – Estimated the income-based fair market value of lodging, retail and other concession facilities at each park. Work was performed in support of ongoing negotiations between concession operators and National Park Service to determine just compensation due concession operators for their investment in Park facilities. Testified in arbitration regarding conclusions. Client: U.S. National Park Service.
- Tusayan, Arizona – Prepared prospective income-based valuation of proposed mixed use hospitality development just outside of the South Rim of Grand Canyon National Park. Canyon Forest Village was to include multiple hotels, restaurants, retail outlets and entertainment facilities. Analysis was in support of developer's efforts to solicit both debt and equity capital to finance the project's implementation. Client: Canyon Forest Village, LLC.
- Tule River Reservation, California - Prepared detailed agricultural and business development feasibility analyses in support of ongoing efforts to quantify Indian Tribe Federal Reserved water rights. Have performed similar studies on the following Indian

Reservations.

- Middletown Rancheria
- Ohkay Owengeh Pueblo (formerly San Juan Pueblo)
- Coeur D'Alene
- Santa Margarita Reservation
- Shivwits Reservation
- Walker River Reservation
- Mescalero Reservation (basins not yet litigated)
- Gila River Reservation
- Duck Valley Reservation
- Fort Yuma Indian Reservation
- Lummi Reservation
- Navajo Reservation
- Hopi Reservation
- Pyramid Lake Reservation
- Winnebago Reservation

Clients: Bureau of Indian Affairs, U.S. Department of Justice, Native American

Rights Fund and various Indian tribes.

- Cascade Lake, Idaho - Prepared a cost-benefit analysis of several short- and long-term agricultural, timber and recreation management proposals designed to reduce water quality degradation of Cascade Lake. Client: U.S. Bureau of Reclamation (sub to Natural Resource Consulting Engineers).
- Owyhee Reservoir, Idaho – Evaluated the financial feasibility of alternative proposals for the development of visitor recreation and concession facilities at the Reservoir. Client: U.S. Bureau of Reclamation.
- Crater Lake National Park, Oregon; Wahweep Marina, Lake Powell Recreation Area, Arizona – Evaluated the financial feasibility of proposed contracts for continued private operation of each site's visitor concession facilities. Client: U.S. National Park Service.
- New Melones Reservoir, California – Assessed the financial feasibility of converting operation of the Reservoir's recreation visitor facilities from public to private management. Client: U.S. Bureau of Reclamation.
- Grand Canyon National Park – Estimated the fee visitors would have to pay to use a proposed light rail system at the Park for the system to be financially feasible given prevailing transit sector investment rates of return. Client: U.S. National Park Service.
- Washington Mall – Developed financial feasibility and rate analysis for proposed bus tour/transit system at Mall. Client: U.S. National Park Service (working in conjunction with David Evans Associates).
- Yosemite National Park, California – Evaluated market and financial feasibility of proposed 80 unit upscale resort development adjacent to Yosemite National Park. Client: Yosemite Cascades, LLC.

Economic Impact Analysis

- Imperial County, California – Evaluated potential regional socio-economic impacts of proposed conversion of land from irrigation to energy generation and residential development. Effort is in support of general management planning regarding future area land and water use. IMPLAN model adjusted for local farm production functions used for measuring direct and secondary economic impacts. Client: Imperial Irrigation District.
- Imperial County, California – Evaluated potential regional socio-economic impacts of proposed conversion of two farm properties from irrigation to solar power development. Effort was in support of power developer efforts to obtain necessary rezoning of subject properties. Client: Edison Mission Energy.
- Channel Islands National Park – Assessed potential socio-economic impacts of alternative General Management Plan options for the Park. National Park Service was examining potential expansion of visitor access and facilities on the islands. Participated in associated planning sessions with Park Service personnel. Client: U.S. National Park Service. Also performed similar work for the Park Service at Chickasaw National Recreation Area in Oklahoma.
- Central Valley, California – Prepared agricultural, municipal, and industrial and regional economic impact components of Draft Central Valley Project water contract renewal environmental assessments for the Contra Costa, Shasta/Trinity and West Sacramento Canals Units of the CVP (CEQA Compliance). Client: U.S. Bureau of Reclamation (sub to North State Resources).
- Yakima Basin, Washington - Evaluated the regional socio-economic impacts of proposed irrigation conservation measures within the 155,000-acre Wapato Irrigation Project. Client: U.S. Bureau of Reclamation (sub to Natural Resources Consulting Engineers).
- El Centro, California - Assisted Imperial Irrigation District (IID) to evaluate the potential regional economic impacts of its water use and proposed water conservation measures. Conservation objective was to lease in excess of 200,000 acre-feet of water to San Diego annually. Also performed economic analyses of various potential mitigation measures to offset economic effects of land fallowing to conserve water. IMPLAN model used to assess direct and secondary impacts of water transfer and conservation options. Client: Imperial Irrigation District.
- Uintah Basin, Utah – Prepared the socio-economic section of the Programmatic EA for proposed agricultural project development activities on the Uintah & Ouray Indian Reservation. Client: Northern Ute Tribe.
- Uintah Basin, Utah - Managed preparation of the transportation, socio-economic, recreation, visual resources, health & safety and socio-culture sections of the EIS for the proposed Uintah Basin Replacement Project of the Central Utah Project. IMPLAN model used to assess local income and employment effects of project alternatives under consideration. Client: Central Utah Water Conservancy District (sub to Stetson Engineers).
- South-Eastern, Colorado – Helped to identify the water resource development opportunities on the Ute Mountain and Southern Ute Indian Reservations as part of preparation of the EIS for the Animas La Plata water storage project. Client: U.S. Bureau of Reclamation.
- Trinity River, California - Provided an ongoing critical review of the economic impact assessment for the proposed Trinity River Restoration EIS. Client: Trinity County Planning Department.

- Trinity River, California - Prepared Tribal Trust and Trinity region component of Environmental Justice sections of the Trinity River Restoration EIS. Client: U.S. Bureau of Reclamation (sub to CH2M Hill).

Litigation Support/Expert Witness

- Napa Valley, California – Engaged as an expert to evaluate a property owner’s lost future income due to contamination of the property’s groundwater by a septic system fractured as a result of an automobile accident and subsequent towing company efforts to recover the vehicle. The property owner was in the process of qualifying his water supply for sale to local bottlers at the time of the contamination, which is expected to delay his development plans for a minimum of three years. Client: Anwyl, Scoffield & Stepp, LLP.
- California Indian Reservation (confidential) – Evaluating the historical and anticipated future lost economic profits (damages) from foregone agriculture and higher water costs due to non-Indian misappropriation of regional surface and groundwater resources. Damages analysis will be linchpin of Tribe’s efforts to negotiate settlement of its Federal reserved water rights.
- Umatilla Indian Reservation, Northern Oregon – Evaluated historical economic and non-economic impacts to the Confederated Tribes of the Umatilla Indian Reservation of the U.S. failure to establish and protect the Tribes’ water rights. Analysis focused on values associated both with salmon fishery within the Columbia River Basin and foregone agricultural development on the Reservation. Client: Confederated Tribes of the Umatilla Indian Reservation.
- Tule River Indian Reservation, California – Assessed the monetary damages due the Tribe as a result of the Federal government’s historical mismanagement of the Tribe’s agricultural, range and timber resources. Settlement negotiations are ongoing. Client: Tribe and Native American Rights Fund. Also performed water and land resource related damages analyses for the Jemez Pueblo on behalf of the Jemez Tribe and Kaw Indian Tribe working with Fredricks Pelcyger, LLP.
- Silver Springs, Maryland – Estimated the monetary damages due Summit Properties from the premature termination by Choice Hotels of franchise agreements between Summit and Choice for Choice to provide brand and franchise services for eleven of Summit’s hotel properties. Up through early 2011 the eleven properties were operated under Choice brands Comfort Inn, Comfort Suites and Cambria Suites. Analysis required statistical analysis of historical financial statements for the subject properties to determine operating cost structures, development of forward looking projections of properties’ profitability had Choice continued to brand the properties and under alternative brands due to the early terminations and evaluation of occupancy, rates and competition within the eleven markets in which the properties were operating. Client: Maurice Robinson and Associates (on behalf of Summit Properties).
- Tillamook Bay, Oregon – Assisted the Tillamook Bay Port Authority to defend against a resort developer’s lost profits claim associated with the Port Authority’s early termination of a lease involving Port Authority property. The lease was for the developer to construct a 250 room resort with conference facilities and a golf course. The analysis demonstrated that the resort development as conceived was not financially viable and thus, no

- justification for a lost profits claim. Client: Hart Wagner, LLP.
- Skokomish Indian Reservation, Washington – Evaluated the historical economic damages to the Skokomish Tribe from Cushman Hydropower Project transmission lines applying six alternative assessment methodologies. Client: U.S. Department of Justice.
 - Menominee Indian Reservation, Menominee Wisconsin - Assisted with technical analysis to develop recommendations regarding license conditions and annual charges in Wisconsin Power & Light's pending FERC license for continued operation of the Shawano Hydropower (pursuant to Sections 4(e) and 10(e) of the Federal Power Act). In addition, quantified past damages due the Tribe from unpaid and underpayment of compensation for hydropower-related use of tribal land. Participated in settlement negotiations with FERC at administrative hearing. Clients: U.S. Department of Interior, Solicitor's Office and Bureau of Indian Affairs.
 - Potter Valley, California - Reviewed and critiqued a break-even/ability to pay analysis conducted by Pacific Gas & Electric (PG&E) for its Potter Valley hydropower facility on the Eel River. Client: U.S. Department of Justice.
 - Yakama Indian Reservation, Washington – Evaluated farmer ability-to-pay for irrigation water in support of Tribe's effort to contest payment requirements of the Bureau of Reclamation for Wapato Irrigation Project water. Client – Yakama Indian Nation
 - Lake Michigan – Evaluated the relative economic values of the Lake Michigan recreational and commercial fisheries. Designated as expert. Lawsuit settled prior to completion of the analysis. Client: U.S. Department of Justice.

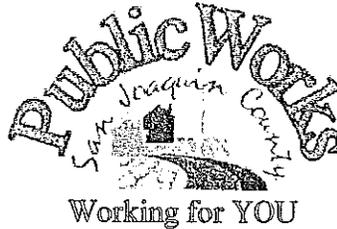
Other

- Blackfeet Indian Nation, Montana – Preparing Assessment and Recommendation report for settlement of Nation's Federal reserved water rights claims. Report includes economic evaluations of Tribe's monetary damages claim due to alleged U.S. breach of its trust responsibility to protect Tribe's water resources, economic feasibility evaluations of proposed water resource development projects on Reservation to be funded by U.S. as part of settlement and valuation of water rights that Tribe would receive and forgo under settlement as compared to the rights the Tribe might secure through litigation. Client: U.S. Department of Justice.
- Washington DC – Developed uniform analysis of the present value of the Federal obligation of funds in the settlement of Indian water rights claims involving six separate recent settlements. Purpose of analysis was to evaluate past Federal monetary contributions to settlements as a basis to determine the equitable Federal contribution to future settlements. Client: U.S. Department of Justice
- Central Valley, California – Assisted in the development of a survey that was administered to 200 Central Valley farmers to evaluate farmer response to changes in their water supply, irrigation technology and market conditions. Purpose of survey results was to verify assumptions incorporated into the Central Valley Production Model a critical tool used by the State of California for drought planning. Client: California Department of Water Resources.
- Monterey Bay National Marine Sanctuary, California - Examined the volume and

**ATTACHMENT
I.B.**



KRIS BALAJI
DIRECTOR



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DEPUTY DIRECTOR

FRITZ BUCHMAN
DEPUTY DIRECTOR

JIM STONE
DEPUTY DIRECTOR

August 9, 2016

Board of Supervisors
44 North San Joaquin Street, Suite 627
Stockton, California 95202

APPROVAL AND ADOPTION OF INITIAL STUDY AND MITIGATED NEGATIVE
DECLARATION FOR THE DEMONSTRATION RECHARGE, EXTRACTION AND
AQUIFER MANAGEMENT (DREAM) AND NORTH SAN JOAQUIN WATER
CONSERVATION DISTRICT
SOUTH SYSTEM IMPROVEMENTS PROJECT
(4TH DISTRICT)

Dear Board Members:

RECOMMENDATION:

It is recommended that the Board of Supervisors of San Joaquin County, by Board Order, approve and adopt the Initial Study and Mitigated Negative Declaration (IS/MND) for the Demonstration Recharge, Extraction and Aquifer Management (DREAM) and North San Joaquin Water Conservation District (NSJWCD) South System Improvements Project (South System Improvements).

REASONS FOR RECOMMENDATION:

On September 24, 2013, East Bay Municipal Utility District (EBMUD) and San Joaquin County (County) entered into a Memorandum of Agreement for the development of a demonstration scale groundwater banking project. Subsequently in 2014, EBMUD and the County also executed a cost-share agreement to fund the initial development of the DREAM Project, including planning, preliminary engineering, environmental review, permitting and public outreach.

The DREAM Project involves application up to 1,000 acre-feet of surface water supplied by EBMUD to existing developed farmland within the NSJWCD, which has historically been irrigated through groundwater extraction. The NSJWCD will then extract up to 500 acre-feet of groundwater for delivery via a proposed 2.8-mile pipeline to the existing EBMUD Mokelumne Aqueduct for use in the EBMUD service area. The purpose of the DREAM Project is to demonstrate the feasibility of in-lieu groundwater recharge and groundwater banking.

Surface water delivery described in the DREAM Project requires improvements to the NSJWCD South System, including rehabilitating the existing pump station on the Lower Mokelumne River, rehabilitating existing Bear Creek and Pixley Slough diversion

structures, and constructing a new diversion facility on Pixley Slough. The South System Improvements will also allow more efficient surface water delivery to existing NSJWCD customers. The construction and operation of the DREAM Project, including construction of the South System Improvements, was analyzed in an IS/MND prepared in accordance with California Environmental Quality Act (CEQA) requirements. County staff, in collaboration with NSJWCD, prepared the IS/MND (Exhibit A), which concludes that the DREAM and South System Improvements Project will not have a significant effect on the environment with the identified mitigations.

County staff published a Notice of Intent to Adopt a Mitigated Negative Declaration and Notice of Availability of an Initial Study for the DREAM and NSJWCD South System Improvements Project (Exhibit B). CEQA requires that the public comment period for mitigated negative declarations be at least 30 days. After the initial 30-day period, the public review deadline was extended three times (Exhibits C, D, and E) to work out project details with local stakeholders, which resulted in a total public review period of 126 days. The County received eight comment letters prior to the July 8, 2016 comment period deadline. The comment letters and responses thereto and the Mitigation, Monitoring, and Reporting Plan are attached as part of the Final Mitigated Negative Declaration (Exhibit F). The County received the attached correspondence from the Governor's Office of Planning and Research State Clearinghouse (Exhibit G) acknowledging that the public review requirements under CEQA have been met.

FISCAL IMPACT:

The total cost of preparing the IS/MND and the Final Negative Declaration is estimated to be \$125,152, for which sufficient appropriations exist in the Water Investigation Zone No. 2 Budget.

ACTION TO BE TAKEN FOLLOWING APPROVAL:

Following the adoption of the Final Mitigated Negative Declaration and the approval of the DREAM and NSJWCD South System Improvements Project, Public Works staff will file a Notice of Determination with the County Recorder-County Clerk. This action will begin a 30-day statute of limitations for legal challenge to the Board's adoption of the IS/MND. Public Works will bring forward a recommendation to the Board of Supervisors regarding issuance of a Groundwater Export Permit for the DREAM Project once the water rights clarifications among Mokelumne River stakeholders have been satisfactorily addressed.

Sincerely,



KRIS BALAJI
Director of Public Works

KB:BN:
WR-16G044-M2

c: Board Clerk
August 23, 2016 Agenda

Before the Board of Supervisors
County of San Joaquin, State of California

B-

MOTION:

BOARD ORDER APPROVING AND ADOPTING THE INITIAL STUDY AND
MITIGATED NEGATIVE DECLARATION FOR THE DEMONSTRATION RECHARGE,
EXTRACTION AND AQUIFER MANAGEMENT AND NORTH SAN JOAQUIN
WATER CONSERVATION DISTRICT SOUTH SYSTEM IMPROVEMENTS PROJECT

THIS BOARD OF SUPERVISORS hereby finds that the Demonstration Recharge, Extraction and Aquifer Management and North San Joaquin Water Conservation District South System Improvements Project (Project) will not have a significant effect on the environment and that the impacts will be eliminated or mitigated by adopting mitigation measures that reduce any impacts to a less than significant level; and,

THAT THIS BOARD OF SUPERVISORS hereby adopts the Final Initial Study and Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program and approves the Project.

I HEREBY CERTIFY that the above order was passed and adopted on by the following vote of the Board of Supervisors, to wit:

AYES:

NOES:

ABSENT:

ABSTAIN:



MIMI DUZENSKI
Clerk of the Board of Supervisors
County of San Joaquin,
State of California

**ATTACHMENT
III.**

WATER & DROUGHT AUGUST 2, 2016 4:54 PM

California unveils environmental blueprint for Delta tunnels



BY DALE KASLER
dkasler@sacbee.com

California officials Tuesday released a detailed environmental blueprint for Gov. Jerry Brown's controversial Delta tunnels project, saying the \$15.5 billion plan "minimizes potential effects" on endangered fish species whose populations have dwindled following decades of water pumping.

The Department of Water Resources unveiled its so-called "biological assessment" for the proposed tunnels, which are designed to re-engineer the plumbing of the battered Sacramento-San Joaquin Delta in order to improve reliability of water deliveries to the San Joaquin Valley and Southern California.

The assessment, which runs hundreds of pages, is a necessary step in the lengthy planning process. Two federal agencies responsible for overseeing the Delta's fish population, the U.S. Fish and Wildlife Service and National Marine Fisheries Service, now have to take the document and decide whether the tunnels would violate the Endangered Species Act.

The agencies received a draft version of the assessment last fall. State officials are eager to secure a decision before President Barack Obama leaves office in January. Otherwise, the process would essentially have to start over with a new administration, potentially squandering years of work.

The project would divert a portion of the Sacramento River's flow near Clarksburg, and send that water via twin tunnels 30 miles to the Delta pumping stations near Tracy. Planners say the new system would alter the Delta's current flow patterns in a way that would protect the Chinook salmon and Delta smelt from harmful effects of the pumps.

Critics say diverting the water at Clarksburg would greatly diminish the amount of fresh water at critical points in the Delta, hurting agriculture and damaging water quality.

Dale Kasler: 916-321-1066, @dakasler

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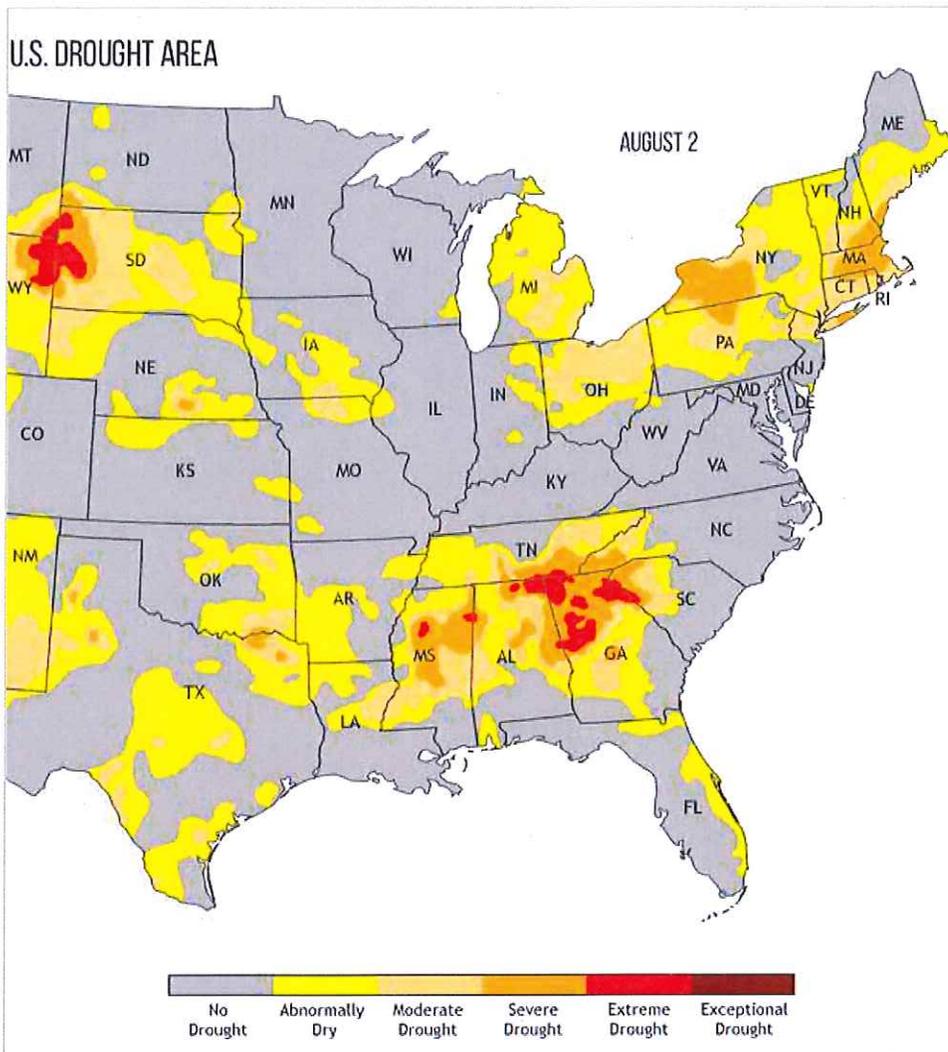
MORE WATER & DROUGHT



Drought is building in places other than California

Author: Rebecca Lindsey

August 9, 2016



Reviewer:
Brad Rippey

A checkerboard of drought conditions has developed across the United States east of the Rockies between spring and summer 2016. Since March, the total drought-affected area of the country nearly doubled from 12.41%—as low as it’s been in five and half years—to 21.12% as of August 2, according to the National Drought Mitigation Center’s August 4 report (<http://drought.unl.edu/NewsOutreach/NDMCNews.aspx?id=257>).

The animated gif at right shows the development of severe to extreme drought in three areas between March 1 and August 2: the High Plains region of North and South Dakota, southeastern Montana and northeastern Wyoming; the Southeast from Mississippi to North Carolina; and the Northeast from Pennsylvania and New York into New England.

Parts of the Southern Plains, including northern Texas, Oklahoma, Kansas, and Nebraska, experienced moderate drought in April—thanks to below average rainfall (<http://www.ncdc.noaa.gov/monitoring-content/sotc/national/grid-prcp/prcp-pon-201603.gif>) and above average temperatures (<http://www.ncdc.noaa.gov/monitoring-content/sotc/national/grid-temp/tave-anom-201603.gif>) in March—but the event was short-lived. By the first week of May, drought areas had shrunk to a few isolated pockets, and these were nearly gone by June.

While the Southern Plains were recovering, conditions in the High Plains, the Southeast, and New England were rapidly getting worse. In the northeastern corner of Wyoming and northern Alabama, some areas deteriorated straight from “abnormally dry” to “severe drought” between May and June. At the southernmost tip of Maine, conditions deteriorated straight from “no drought” to “moderate drought” over the same one-month period.

By early August, conditions in all three areas had worsened yet again, with drought becoming “extreme” in the High Plains and the Southeast and “severe” across western New York, almost all of Massachusetts, and parts of Long Island, New Hampshire, and southern Maine.

According to the Drought Impacts Reporter (<http://droughtreporter.unl.edu/map/>), agricultural impacts are piling up. Pastures have deteriorated, hay production has fallen, and stock ponds and creeks have dried up in the High Plains, and fire danger is high.

In Massachusetts and other parts of the Northeast, farmers are struggling to irrigate lettuce, corn and other crops that are normally sustained by rainfall, with many growers suffering significant losses. Meanwhile, many towns and cities across the region are under voluntary or mandatory water restrictions.

If you’re wondering where climate experts think drought may improve or worsen, check out the August drought outlook (<https://www.climate.gov/maps-data/data-snapshots/droughtoutlook-monthly-cpc-2016-08-00>) from NOAA’s Climate Prediction Center in our Data Snapshots (<https://www.climate.gov/maps-data/data-snapshots/start>) map collection.

CAPITOL ALERT AUGUST 10, 2016 2:35 PM

Legislators approve audit of Gov. Jerry Brown's water tunnel plan



Capitol Alert

The go-to source for news on California policy and politics



Delta tunnels battle heats up



BY DAN WALTERS
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The political conflict over Gov. Jerry Brown's high-priority plan to place twin water tunnels beneath the Sacramento-San Joaquin Delta moved to a new venue Wednesday.

The Legislature's Joint Audit Committee voted to direct State Auditor Elaine Howle to delve into how the project, dubbed California WaterFix, has spent an estimated quarter-billion dollars on planning and how the state plans to finance its multi-billion-dollar cost.

The audit request came from two legislators who represent portions of the Delta, where opposition to the project is strong – Assemblywoman Susan Talamantes Eggman, D-Stockton, and Sen. Lois Wolk, D-Davis.

“How are we going to pay for it?” Eggman said she wants the audit to determine. “There's no oversight,” Wolk added.

Brown and other advocates say the tunnels, which would carry Sacramento River water beneath the Delta to the head of the California Aqueduct near Tracy, would improve the Delta as a wildlife habitat and guard against collapse of the Delta's levees due to sea level rise or earthquake.

Critics, however, say it will deprive the Delta of much-needed flows and damage its habitat. The conveyance, originally proposed as a “peripheral canal” around the Delta, has been a contentious political issue for a half-century.

State water officials, who didn't oppose the audit, say the tunnels will be financed by agricultural and municipal water agencies in the San Joaquin Valley and Southern California, which have already put up millions of dollars for planning. But estimates of its cost, and how the water agencies would raise the money, are still up in the air.

Currently, the contending forces are battling before the state Water Resources Control Board, which would have to issue permits to divert water from the Sacramento River. The battle is also being waged in other forms, including Proposition 53, a measure on the November ballot.

Proposition 53, financed almost entirely by wealthy Delta farmer Dean Cortopassi, would require votes on any state projects that cost \$2 billion or more and financed with revenue bonds.

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