San Luis Rey
MUNICIPAL WATER DISTRICT
5328 Highway 76 • Fallbrook, California 92028

AGENDA

Regular Meeting of the
San Luis Rey Municipal Water District
Wednesday, June 17, 2020 - 4:00 p.m.

at the

Pankey Ranch Office
5328 Highway 76
Fallbrook, California 92028

Writings distributed less than 72 hours prior to this meeting are available for public inspection at the District's General Counsel's office, 2361 Rosecrans Ave., Suite 475, El Segundo, CA 90245, or call 424-269-3351 if you would like a copy sent to you.

*** COVID-19 NOTICE ***

Consistent with Executive Orders No. 25-20 and No. N-29-20 from the Executive Department of the State of California, this Board Meeting will not be physically open to the public as the Board Members will be teleconferencing into the meeting.

Two ways to participate in the Meeting:

- **Call**: 408-638- 0968 (Meeting ID: 851 1154 7135) (Password: 7307083)
- **Video**: https://us02web.zoom.us/j/85111547135?pwd=d0YzMElFdkVjV2FJUCt0Qmc4VUxYdz09

How to submit Public Comment: Members of the public may provide public comment by sending comments to the District's General Counsel's Office by email at aespinosa@awattorneys.com. Please submit your written comments as early as possible, preferably prior to the start of the meeting or if you

are unable to email, please call Alondra Espinosa 424-269-3351 by 3:30 p.m. on the date of the meeting. Email comments must identify the Agenda Item Number in the subject line of the email. The public comment will be entered into record and provided to the Board Members. All comments should be a maximum of 500 words, which corresponds to approximately 3 minutes of speaking time.

- **CALL MEETING TO ORDER**
- **ROLL CALL**
- **APPROVAL OF THE AGENDA**

1. ADDITIONS OR CHANGES ON THE AGENDA

2. ITEMS RECEIVED TOO LATE TO BE ON AGENDA

Recommendation: Determine the need to take action on item(s) that arose subsequent to the agenda being posted (Adoption of this recommendation requires a two-thirds vote of the Board members present at the meeting or, if less than two-thirds of the Board members are present, a unanimous vote).

- **PUBLIC COMMENT**

Any person may address the Board at this time upon any subject not identified on this Agenda, but within the subject matter covered by the San Luis Rey Municipal Water District; however, any matter that requires action will be referred to staff for a report and action at a subsequent Board meeting. As to matters on the Agenda, an opportunity will be given to address the Board when the matter is considered.

3. CONSENT CALENDAR ITEMS

These are items to be acted upon without discussion, unless a request is made by a member of the Board, the Staff, or the Public to discuss a particular item. All consent calendar items are approved by a single motion.

A. APPROVAL OF MINUTES

Regular Meeting of March 18, 2020
Adjourned Meeting of April 15, 2020
Adjourned Meeting of May 20, 2020

B. APPROVAL OF THE DEMAND LIST

4. ACTION CALENDAR ITEMS

All action items are placed on the Agenda so that the Board may discuss and take action, if the Board is so inclined.

A. FIXED ASSET QUESTIONNAIRE 2020 (*Staff Report*)

Recommendation: Authorize President Victor Pankey to sign the Fixed Asset Questionnaire and authorize staff to forward to the County of San Diego.

B. ANNUAL LETTER TO THE PROPERTY OWNERS (*Staff Report*)

Recommendation: Review Annual Report and provide direction to District's legal counsel on changes to the property owners letter, if any, direct District's legal counsel to submit the form to the County of San Diego.

C. BUDGET FOR FISCAL YEAR 2020-2021 (*Oral Report by William Pankey*)

Recommendation: Move to adopt Resolution 2020-1, approving and adopting the budget for fiscal year 2020-2021.

5. REPORTS

The following agenda items are reports. They are placed on the agenda to provide information to the Directors and the public. There is no action called for in these items.

A. SAN LUIS REY WATERSHED COUNCIL – Oral Report by President Victor Pankey

B. AB-3030 PLAN - Oral Report by Vice President William Pankey

C. GROUNDWATER SUSTAINABILITY ACT UPDATE -Oral Report by President Victor Pankey

6. DIRECTORS' COMMENTS

Comments by Directors concerning District business that may be of interest to the Board. Directors' comments are placed on the Agenda to enable individual Board members to convey information to the Board and the Public. There is no discussion or action taken on comments made by Board members.

7. INFORMATION ITEMS

These items are included for the Board's information only. If action is required on any informational item, it will be placed on a subsequent agenda.

A. DELTA

06/10/2020, agalert.com, *Delta dispute casts shadow on water supplies*

05/28/2020, calmatters.org, *What's at the heart of California's water wars? Delta outflow explained*

B. WATER SUPPLY

06/09/2020, climate.gov, *Was May 2020 warm and dry or cool and wet across the U.S.? It depends...*

06/09/2020, californiawaternews.com, *Reclamation announces Shasta non-critical water year*

06/02/2020, insideclimnatenews.org, *New study shoes global warming intensifying extreme rainstorms over North America*

05/28/2020, water.ca.gov, *Seasonal map provide snapshot of state groundwater levels*

05/28/2020, usda.gov, *Water and climate update*

05/27/2020, californiawaternews.com, *State water project allocation increases to 20 percent*

C. WATER MATTERS OF INTEREST

06/10/2020, waterworld.com, *Cannabis water report moves forward; will be published in late 2020*

06/10/2020, mavensnotebook.com, *Presentation discusses the GSP review process and highlights tools, resources and assistance for GSA*

06/05/2020, eenews.net, *Ex-EPA staffer on leaked water research, 'insane' regs*

06/04/2020, waterworld.com, *Leading water associations urge EPA to expedite regulations of PFAs*

06/04/2020, villagenews.com, *CWA approved detachment conditions resolution*

06/02/2020, techrepublic.com, *US home water use up 21% daily during COVID-19 crisis*

06/03/2020, mavensnotebook.com, *Water rights 101*

05/29/2020, water.ca.gov, *DWR scientist uses COVID-19 diagnostic testing technology to help protect endangered fish species*

05/20/2020, sdcwa.org, *Fallbrook and Rainbow LAFCO Detachment*

8. ADJOURNMENT

Adjourn to July 15, 2020, at 4:00 p.m.

Upon request, this agenda will be made available in appropriate alternative formats to persons with disabilities, as required by Section 202 of the Americans with Disabilities Act of 1990. Any person with a disability who requires a modification or accommodation in order to participate in a meeting should direct such request to the District Assistant Secretary at (949) 223-1170 at least 48 hours before the meeting, if possible.

SAN LUIS REY MUNICIPAL WATER DISTRICT
BOARD OF DIRECTORS MEETING
MINUTES OF THE REGULAR MEETING
March 18, 2020

(Any agenda reports and demand list produced at the regular meeting of March 18, 2020 regular meeting, were received, filed, and made part of these minutes on file at the General Counsel's Office.)

CALL MEETING TO ORDER

President Victor Pankey called to order the Regular Meeting of the Board of Directors of the San Luis Rey Municipal Water District ("District") at 4:00 p.m.

ROLL CALL

Present: President Victor Pankey, Vice-President William Pankey, Secretary Thomas F. Veysey

Absent: Director Christian Zaleschuk, Director Helga Fritz

APPROVAL OF THE AGENDA

1. ADDITIONS OR CHANGES ON THE AGENDA

There were none.

2. ITEMS RECEIVED TOO LATE TO BE ON AGENDA

There were none.

PUBLIC COMMENT

There were no public comments.

3. CONSENT CALENDAR ITEMS

A motion was made by Vice President William Pankey, seconded by Secretary Thomas F. Veysey, and unanimously carried by the directors present to approve the consent calendar consisting of the minutes of the Regular Meeting of January 15, 2020, and the Adjourned Meeting of February 19, 2020 as amended.

4. ACTION CALENDAR ITEMS

A. DISCUSS FORM 700

The Directors held a general discussion regarding the status of their Form 700. Directors present reported that they submitted their Form 700 online. No action was taken.

B. DISCUSS AND PROVIDE DIRECTION TO STAFF RE ANNUAL LETTER TO PROPERTY OWNERS

The Directors held a general discussion regarding the revisions to the annual letter to the District's property owners. The Directors approved and/or requested the following revisions: (1) addition of website information; (2) clarification that some statement reports are still being mailed to holders; and (3) updates to the Species and Habitat Protection Issue. No action was taken.

C. AUTHORIZE PRESIDENT PANKEY TO APPROVE QUOTE FOR DIRECTORS' INSURANCE

The Directors held a general discussion regarding the authorization to purchase Director's insurance. A motion was made by Vice President William Pankey, second by President Pankey, and unanimously carried by the directors present to authorize President Pankey to review and sign the insurance policy, or taking any other related action deemed necessary, and authorize the spending of up to $5,500.

A motion was made by Vice President William Pankey, seconded by Secretary Thomas F. Veysey, and unanimously carried by the directors present to approve the Demand List as modified by the authorization to spend up to $5,500 to cover the Director's insurance policy.

3. REPORTS

A. SAN LUIS REY WATERSHED COUNCIL
President Victor Pankey reports that there is nothing to report.

B. AB-3030 PLAN
President Victor Pankey reports that there is nothing to report.

C. GROUNDWATER SUSTAINABILITY ACT UPDATE
President Victor Pankey reports that there is nothing new to report.

4. DIRECTORS' COMMENTS

Vice President William Pankey reported on the completion of the final District audit. Copies of the audit were provided to the Directors present. No action was taken.

5. INFORMATION ITEMS

President Victor Pankey reported that the list provided was a good list regarding water news in the State.

6. ADJOURNMENT

DRAFT

Adjourn to April 15, 2020, at 4:00 p.m.

SAN LUIS REY MUNICIPAL WATER DISTRICT

_____

Victor Pankey, President

Approved by the minutes of
The Board of Directors
Meeting of _____

DRAFT

SAN LUIS REY MUNICIPAL WATER DISTRICT
BOARD OF DIRECTORS
MINUTES OF THE ADJOURNED REGULAR MEETING
ON April 15, 2020

The regular meeting of the San Luis Rey Municipal Water District's Board of Directors, scheduled April 15, 2020, at 4:00 p.m., was canceled. The next regular meeting of the Board will be May 20, 2020, at 4:00 p.m., at the Pankey Ranch Office, 5328 Highway 75, Fallbrook, California 92028.

SAN LUIS REY MUNICIPAL WATER DISTRICT

_____
Victor S. Pankey, President

Approved by the minutes of
The Board of Directors
Meeting of _____

DRAFT

SAN LUIS REY MUNICIPAL WATER DISTRICT
BOARD OF DIRECTORS
MINUTES OF THE ADJOURNED REGULAR MEETING
ON MAY 20, 2020

The regular meeting of the San Luis Rey Municipal Water District's Board of Directors, scheduled May 20, 2020, at 4:00 p.m., was canceled. The next regular meeting of the Board will be June 17, 2020, at 4:00 p.m., at the Pankey Ranch Office, 5328 Highway 75, Fallbrook, California 92028.

SAN LUIS REY MUNICIPAL WATER DISTRICT

_____
Victor S. Pankey, President

Approved by the minutes of
The Board of Directors
Meeting of _____

SAN LUIS REY MUNICIPAL WATER DISTRICT
DEMAND LIST FOR PAYMENT
As of June 10, 2020

Vendor	Invoice	Work Performed	Period	Amount	Fund	Account
Aleshire & Wynder, LLP	03/12/20 55850	General District Services	February 2020	332.50	0	550010
Aleshire & Wynder, LLP	04/15/20 56280	General District Services	March 2020	1,898.90	0	550010
Aleshire & Wynder, LLP	05/21/20 56810	General District Services	April 2020	1,395.00	0	550010
Aleshire & Wynder, LLP	06/10/20 57191	General District Services	May 2020	860.00	0	550010
Digital Deployment	09/11/19 101706	District web site	September 2019	50.00	0	560050
Digital Deployment	06/10/20	District web site	July, Aug, Sept 2020	150.00	0	560050
Total:				4,686.40		

Fund 0 – District General Fund
Fund 1 – Gregory Canyon First Supplement
Fund 2 – Gregory Canyon Mitigation
Fund 3 – Latent Powers
Fund 4 – Deannexation

San Luis Rey
MUNICIPAL WATER DISTRICT
5328 Highway 76 • Fallbrook, California 92028

AGENDA ITEM 4.A.

MEMORANDUM

TO: Board of Directors
San Luis Rey Municipal Water District

FR: Alondra Espinosa, Associate, Aleshire & Wynder LLP

DT: June 9, 2020

RE: Fixed Asset Questionnaire 2020

CL: San Luis Rey Municipal Water District

In July of each year, the San Luis Rey Municipal Water District's ("District") Board of Directors considers the adoption of a water availability charge to help finance the water and storage expenses of the District, which include administrative, legal, engineering, and other technical costs to effect sound groundwater and surface water resources management policies, as well as the continuation of the preservation and related development of water supply and water rights of the District for the benefit of the landowners within the District. Due to the District's reserve levels, the Board has decided it is **not** necessary to impose a Water Availability Charge for Fiscal Year 2020/2021. However, the District still needs to submit the Fixed Charge Special Assessment Fund Questionnaire, which is attached to this staff report.

Recommended Action(s):

Staff recommends the Board by roll call vote to authorize President Victor Pankey to sign the Fixed Charge Special Assessment Fund Questionnaire and authorize legal counsel to file the questionnaire with the County of San Diego.

Enclosure: Fixed Charge Special Assessment Fund Questionnaire

TO: County of San Diego
COC - PTS - Ste. 410
5530 Overland Ave.
San Diego CA 92123

FROM: Attn: Victor Pankey, President
San Luis Rey Municipal Water District
5328 Highway 76
Fallbrook CA 92028

RE: 2020/2021 FIXED CHARGE SPECIAL ASSESSMENTS (FCSA) FUND NUMBER REQUIREMENT QUESTIONNAIRE

DRAFT

NOTE: **THE PHONE NUMBER SHOWN IS THE PHONE NUMBER THAT WILL BE LISTED ON THE TAX BILLS.**
PLEASE INDICATE IF THE ASSESSMENT FUND IS FOR THE PAYMENT OF BONDS ISSUED UNDER IMPROVEMENT BOND ACT OF 1915 .

FUND NUMBER	FUND DESCRIPTION	Will Fund Be Used in 2020/2021? YES	NO	NEW	1915 BOND?	Rate Increase?	CONTACT PERSON/ PHONE NUMBER/ E-MAIL
6680-01	Water Availability		X				William Pankey (714) 730-7083 sanluisreymwd@yahoo.com

JURISDICTION OFFICIAL

DATE

Internal Use: Fund Check 1____ 2____ Phone Check 1____ 2____

San Luis Rey
MUNICIPAL WATER DISTRICT
5328 Highway 76 • Fallbrook, California 92028

AGENDA ITEM 4.B.

MEMORANDUM

TO: Board of Directors
San Luis Rey Municipal Water District

FR: Alondra Espinosa, Associate, Aleshire & Wynder LLP

DT: June 9, 2020

RE: Annual Letter to the Property Owners FY 2019/2020

CL: San Luis Rey Municipal Water District

Every year District the District sends an Annual Report to Property Owners within the District. The Annual Report provides information on the tasks undertaken by the Board during the previous Fiscal Year.

During the March 18, 2020 Board Meeting, the Board of Directors provided feedback on the Annual Report. Attached is the revised property owner letter for your consideration with your revisions.

Recommended Action(s):

Discuss whether there needs to be any more changes to the annual property owner letter, and, if so, provide direction to District's legal counsel on changes to the draft property owner letter, if any, and direct District's legal counsel to send.

Enclosure: Annual Report

San Luis Rey
MUNICIPAL WATER DISTRICT
5328 Highway 76 • Fallbrook, California 92028

FISCAL YEAR 2019/2020 ANNUAL REPORT
Describing the Major Events the District Addressed

I. Background

This is the San Luis Rey Municipal Water District's ("District") annual report describing the activities that the District has undertaken on your behalf in the past year. It is an explanation about how the water availability charges collected on the tax rolls have been spent, and projects how any new water availability charges would be spent in the future.

The District serves properties in the area along the San Luis Rey River from the Pala Indian Reservation on the east to Highway I-15 on the west. The sole source of water to properties within the District is the San Luis Rey River and the groundwater basins it supplies.

The District is required by law to maintain, support and protect the water rights and water storage rights of landowners within the boundaries of the District, and to plan for a reliable water supply to meet future demands. Throughout the year, the District Directors monitor and act upon issues which impact water, land and the environment, and activities which can potentially affect the quality or quantity of the water available to the water users in the District. The District's legal counsel and the District's consultants assist the Directors in making decisions about these issues, and actions to take.

The District is governed by a five-member, publicly elected Board of Directors, which meets monthly (without pay) to conduct the District's business. Topics to be discussed or acted on at the Board meetings are itemized in a Board Agenda made available 72 hours before each meeting. The Agenda can be accessed on the District's website, https://sanluisreymwd.specialdistrict.org/. After consideration at the next meeting, minutes of the meeting are prepared, reviewed and adopted by the Board. The District's records are maintained at the offices of the District and/or the office of District's legal counsel. Some records may be found on the District's website now.

If you need information concerning the District, you may also call (714) 730-7083 with any questions or concerns regarding the District.

The current members of the Board are: Victor Pankey, President (Division 2); William Pankey, Vice President (Division 1); Thomas Veysey, Secretary-Treasurer (Division 3); Helga Fritz, Director (Division 4); and Christian Zaleschuk, Director (Division 5).

The District's regularly scheduled monthly Board meetings are held at the Pankey Ranch office, 5328 Highway 76, Fallbrook, California. You are encouraged to attend the meetings, which are held on the third Wednesday of each month at 4:00 p.m. The District's Agenda is posted on the District's website and near the mail boxes located at 5328 Highway 76, Fallbrook, California,

in advance of each District meeting.

For many years, the District has levied a water availability charge in an amount not to exceed $20.00 per acre (or portion of an acre). In accordance with the procedures of the Municipal Water District Act of 1911 (specifically, Water Code sections 71630, et seq., and 71631.7), the District can levy a water availability charge in an amount not to exceed $30.00 per acre (or portion of an acre). Due to development in the area, there have been several property owners who have deannexed from the District so that they could receive municipal water deliveries to the subdivisions. This has resulted in lower revenues available to the District.

The following describes major events that the District has addressed within the past year.

II. District Activities Funded by Water Availability Charge

A. Water Resources of the San Luis Rey River

The District monitors proceedings conducted by the State Water Resources Control Board (the "State Board") on water rights applications filed along the San Luis Rey River specifically concerning the Bonsall and Pala Basins, and potential environmental impacts on water quality of proposed upstream developments. The State Board designated the Pala Basin of the San Luis Rey River as a subterranean stream flowing through known and definite channels in 2002, surface water rules are administered by the State Board. AB 1944 passed and signed into law that could affect that designation. This will be discussed more below under the Sustainable Groundwater Management Act. The District continues to urge all landowners to carefully document their water use and to file Statements of Diversion and Use with the State Board. Failure to do so could make you subject to monetary penalties. Documentation of water use could be helpful in protecting each user's right, particularly if those rights are legally challenged.

The District also monitors activities such as the San Diego County Water Authority's ("SDCWA") groundwater resources development planning, and the San Luis Rey River Indian Water Rights Settlement, with Colorado River water to be supplied to the San Luis Rey River Indians through a transfer between the Imperial Irrigation District and the SDCWA.

In addition, the District has been working on issues relating to the regulations regarding the Sustainable Groundwater Management Act.

1. Drought Monitoring

While Governor Brown ended the drought state of emergency in most of California on April 7, 2017, he maintained the water reporting requirements and prohibitions on wasteful practices, such as watering during or right after rainfall.

For the first time since 2011, the State of California has no areas that are suffering from prolonged drought and has almost entirely normal conditions. Reservoir conditions

in San Diego County have improved but reservoirs are not yet full. As of May 27, 2020 the San Diego County Water Authority reports that the Red Mountain Reservoir owned by Fallbrook PUD is at 35% of capacity; Morro Hill Reservoir owned by Rainbow MWD is at 62% capacity; and the Henshaw Reservoir owned by Vista Irrigation District is at 21% capacity.

2. Regulations for Measuring and Reporting the Diversion of Water

For years, the District has been reminding all property owners that if they are diverting surface water or pump groundwater from a known subterranean stream, they must file a Statement of Water Diversion and Use ("Statements") with the State Board, and subsequent Supplemental Statements, or file an application to appropriate. The State Board has adopted regulations that require all surface water rights holders and claimants to report their diversions annually. Those who divert more than 10 acre-feet of water per year must also measure their diversions. If you divert water and do not file Supplemental Statements or report misstatements, you may be subject to civil liabilities up to $500 per day under the water code.

Some statement holders are still receiving annual report reminders. However, note that the State Board has the option of **not** notifying statement holders when the annual report(s) are due. You may subscribe to the State Board's "Lyris list" which can be reached via this link:

https://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.html

Once there you select the "Water Rights Reporting Notification" under the "Water Rights" listing, fill in the blanks and then click on the "subscribe" button.

Annual reporting for permits, licenses and registrations are due on April 1 of each year for the previous year's production. Most of the property owners within the District file Supplemental Statements of Water Diversion and Use. These filings are due by July 1 of each year to report production from the prior years. The annual reports must be completed online through the eWRIMS Online Reporting.

If you have changed the location of an existing point of diversion, then the new location must be identified. If a new point of diversion has been added, resulting in more than one point of diversion, you must file a separate Statement with the State Board for the additional point of diversion.

B. San Luis Rey River Groundwater Basin Management Activities

The District continues to hold as a top priority the preservation of the water and storage resources available to water users in the District. Currently, the San Luis Rey River and the basins it supplies are the only water source within the District, and careful management of water resources is appropriate to avoid degradation, depletion, and reallocation to third parties.

1. Groundwater Management Plan

The District initiated its Groundwater Management Plan at its regular meeting of the Board of Directors on April 17, 1996. From time to time, the District has updated the plan. The Groundwater Management Plan allows the District to maximize the use of local water resources and available basin storage capacity to protect those resources against conflicting management practices of other public agencies, and to coordinate the water management activities with land use planning agencies.

Pursuant to the District's Groundwater Management Plan, groundwater elevations in the Pala and Bonsall Basins are monitored and recorded to assist in documenting the baseline characteristics of the basins. Monitoring equipment has been placed in some wells to gather data in support of the Groundwater Management Plan.

Part of the District's Groundwater Management Plan is to protect the water quality of the District's water resources.

2. The Sustainable Groundwater Management Act

The "Sustainable Groundwater Management Act" (the "Act") became law in 2014 and it requires local water agencies within a basin designated by the Department of Water Resources ("DWR") as either a high or medium priority basin, establish a Groundwater Sustainability Agency ("GSA") by June 30, 2017 and then enact a Sustainable Groundwater Management Plan ("SGMP") by January 31, 2020.

The San Luis Rey Valley Groundwater Basin ("SLR Basin") is listed in the Department of Water Resources ("DWR") Bulletin 118 (2016) and is determined to be a single, medium priority basin under the Act. The State Board determined, in 1938 and 2002, that the SLR Basin is composed of four sub-basins (west to east, Mission, Bonsall, Pala and Pauma) and that the sub-surface water in the Mission, Bonsall and Pala sub-basins flows in "known and definite channels" and is therefore not percolating groundwater, but is defined as stream flow and subject to the rules of surface water diversion described in Division 2 of the State of California Water Code. Since the water in these three sub-basins is not defined as "groundwater" under California law, it is not subject to regulation under the Act. The differing perspectives of the DWR and the State Board regarding the character of the SLR Basin are a significant underlying cause of the confusion regarding the status of subterranean water in the Basin.

AB 1944, which was signed by the Governor on September 5, 2018, divided the SLR Basin into an upper and lower subbasin. The portion of the SLR Basin that is west of the "east line of Range 3 West, San Bernardino Meridian" is now the "Lower San Luis Rey Valley Groundwater Subbasin" ("Lower Subbasin" consisting of the previously defined Mission and Bonsall Subbasins) and the portion of the SLR Basin that is east of the "east line of Range 3 West, San Bernardino Meridian" is now the "Upper San Luis Rey Valley Groundwater Subbasin" ("Upper Subbasin" consisting of the previously defined Pala and Pauma Subbasins).

All those property owners who own land in the Upper Subbasin will be included in the definition of groundwater for the purposes of the participation in any GSA that is developing or implementing a GSP, except for water beneath the surface of the ground downstream of the confluence of San Luis Rey River and Frey Creek that is extracted and used as authorized under an existing appropriative water right.

The water in the Lower Subbasin remains designated as a subterranean stream flowing in known and defined channels.

Pauma Valley Community Services District and Yuima Municipal Water District, the two agencies that are the primary financial contributors of the local government agencies in the Upper Basin have approved participation in a Memorandum of Understanding to begin the process of collecting data and has subsequently released a Request for Qualifications/Proposal for a company to perform the collection of the data. They expect to have a consultant on board by the end of May 2019.

The specific impact that the change in designation resulting from adoption of AB 1944 will have on District landowners is still unclear but the Board is continuing to monitor the development of the GSA and subsequent GSP.

Both sub-basins have been designated as medium priority until the Department of Water Resources reassesses the basin prioritization.

Regardless of whether your property is located within the Upper Subbasin or the Lower Subbasin we **urge you to document your water rights and file the proper paperwork with the State Water Resources Control Board**.

C. Species and Habitat Protection Issues

Because new species and habitat listings under the Endangered Species Act can be enforced to limit or prohibit groundwater pumping, the District monitors the proceedings of the Federal and State government environmental agencies and environmental advocacy groups, with emphasis on those proceedings which could restrict water production, water use, or construction and operation of water management facilities. Some proposed designations could require private

landowners to manage pumping in such a way as to not draw down the water table, because some assert that draw down by pumping could damage or kill habitat. In other cases, such as the Southwestern Willow Flycatcher, all pumping of groundwater could be prohibited.

The District has been closely monitoring the County's North County Multi-Species Habitat Conservation Plan ("North County Plan"). The County selected ICF, a statewide leader in regional conservation planning, to review a draft of the North County Plan in relation to current practices and regulatory requirements and to develop planning options for public discussion and input. Their review is summarized in a report entitled the North County Multiple Species Conservation Plan Status Review and Options Assessment, which can be accessed here: https://www.sandiegocounty.gov/content/dam/sdc/pds/mscp/docs/NCMSCP/Options%20Assessment.pdf.

As a member of the community, your questions, suggestions, and comments about the options identified in the report are important to the County. The County held a series of public meetings to discuss the North County Multiple Species Conservation Plan Status Review and Options Assessment.

The County anticipates presenting the report and the input received to the Board of Supervisors in the Fall of 2020. Information regarding the public hearing will be provided as it becomes available on the following website: https://www.sandiegocounty.gov/content/sdc/pds/mscp/nc.html. To ensure your input can be included in these discussions or if you have any question, please contact Project Contact, Chelsea Oakes, at MSCP@sdcounty.ca.gov or (858) 505-6677.

D. The San Luis Rey Watershed Council

President Victor Pankey continues as the District's representative to the San Luis Rey Watershed Council, a non-profit organization established in 1997 to protect the interests of the San Luis Rey watershed. Vice President Bill Pankey and Secretary Tom Veysey were appointed as alternates to the council.

E. District Activities Anticipated for Fiscal Year 2020/2021

The District will continue to protect water rights and water quality on the San Luis Rey River. The District will also continue to monitor proceedings of the Federal and State government environmental agencies and environmental advocacy groups, with emphasis on those proceedings which could affect water production, water use, or construction and operation of water management facilities. The District will also continue monitoring the status of San Diego's North County Multi-Species Habitat Conservation Plan.

There may be costs in further investigation and protection of water quality arising out of upstream water use and for additional water sampling and quality testing for the District. There may also be costs associated with monitoring the Upper Subbasin and formation of a GSA. The 2018/2019 fiscal year costs incurred by the District included Board of Directors Insurance, legal

services, and costs associated with SGMA.

As nearby development projects continue, the District anticipates monitoring these projects as they relate to water supply and quality issues. The District may need to participate or otherwise respond to actions that potentially affect the District's water supply and rights.

The District has in the past and will continue to monitor and act upon issues which impact water, land and the environment, and other activities which can potentially affect the quality or quantity of water available to the water users within the District.

Specifically, the District:

- Provided paperwork in regard to LAFCO deannexation proceedings of several of parcels that were purchased throughout the years by the Pala Indians from the District;
- Reviews the District's Groundwater Management Plan and work to enhance it;
- Monitors the formation of a GSA in the Upper Subbasin to the east of the District, and monitors that entity's efforts towards finalizing a Sustainable Groundwater Management Plan as it affects the District;
- Continues to monitor new species and habitat listings under the Endangered Species Act; and
- Monitors the activity of the County of San Diego's North County Multi-Species Habitat Conservation Plan.

If you have questions or comments regarding this matter, please contact any of the District's Directors at the telephone numbers listed below.

Sincerely,

SAN LUIS REY MUNICIPAL WATER DISTRICT

_____

Victor S. Pankey, President
(760) 728-0270

_____

San Luis Rey
MUNICIPAL WATER DISTRICT

William H. Pankey, Vice President
(760) 728-1622

Thomas Veysey, Secretary/Treasurer
(760) 791-7369

Helga Fritz, Director
(760) 451-9141

Christian Zaleschuk, Director
(760) 802-842

San Luis Rey
MUNICIPAL WATER DISTRICT
5328 Highway 76 • Fallbrook, California 92028

AGENDA ITEM 4.C.

MEMORANDUM

TO: Board of Directors
San Luis Rey Municipal Water District

FR: Alondra Espinosa, Associate, Aleshire & Wynder, LLP

DT: June 9,2020

RE: Fiscal Year 2020-2021 Budget

CL: San Luis Rey Municipal Water District

Vice President William Pankey will give an oral report to review the District expenditures for the last fiscal year and discuss the District's expected expenses for Fiscal Year 2020-2021.

Recommended Action(s): After duly considering the report of Vice President William Pankey on the District's expenses for Fiscal Year 2020-2021, move to approve Resolution No. 2020-1 Approving and Adopting a Budget for Fiscal Year 2020-2021.

Enclosure(s): Resolution 2020-1; Budget FY 2020-2021

RESOLUTION NO. 2020-1

RESOLUTION OF THE BOARD OF DIRECTORS OF THE SAN LUIS REY MUNICIPAL WATER DISTRICT, SAN DIEGO COUNTY, CALIFORNIA, APPROVING AND ADOPTING A BUDGET FOR FISCAL YEAR 2020-2021

WHEREAS, the San Luis Rey Municipal Water District ("District") has projected the cost of necessary services and supplies for fiscal year 2020-2021, estimated the available revenue, and prepared a budget for said fiscal year.

NOW, THEREFORE, the Board of Directors of the San Luis Rey Municipal Water District hereby RESOLVES, DETERMINES and ORDERS as follows:

Section 1. That the budget for the fiscal year commencing on July 1, 2020, and ending June 30, 2021, is hereby approved and adopted.

Section 2. That a true and correct copy of said budget is attached hereto and made a part hereof as Exhibit "A".

Section 3. No money is required to be raised by taxation during said fiscal year for the payment of principal and interest on bonded debt of said District, inasmuch as said District has no bonded debt.

Section 4. The Assistant Secretary of the District is hereby authorized and directed to deliver promptly to the Board of Supervisors of the County of San Diego, State of California, and to the Auditor-Controller for the County of San Diego, a copy of Exhibit "A".

ADOPTED, SIGNED and APPROVED this 17th day of June, 2020.

By:_____
Victor S. Pankey, President Board of Directors,
San Luis Rey Municipal Water District

ATTEST:

By:_____
Thomas Veysey, Secretary

DRAFT

CERTIFICATION

I, the undersigned, hereby certify that I am the Secretary of the San Luis Rey Municipal Water District, a municipal water district of the State of California; that the foregoing is a full and correct copy of Resolution No. 2020-1 of said District, and that at a meeting held on the 17th day of June, 2020, the Resolution was duly adopted by the following roll call vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

By _____
Thomas Veysey, Secretary

DRAFT

EXHIBIT "A"

BUDGET

SAN LUIS REY MWD
Budget
2020-2021

Year end:	6/30/2021
OPERATING CASH FLOW	General Fund
Revenue:	
Water Availability Charges & Property Taxes	0
Deanexation Contract	0
Interest Revenue	105
Total Revenue:	105
Expenditures:	
Audit	7,250
Insurance Expense	3,300
Legal Expenses - General & Administrative	33,000
Legal Expenses - Other	0
LAFCO Fees & Legal Ads	500
Basin Management & GSA	4,000
Total Expenditures	48,050
Net:	-47,945

Delta dispute casts shadow on water supplies

Issue Date: June 10, 2020
By Christine Souza

With supplies curtailed from California's largest water projects, farmers have been reducing acreage, water districts have been working to secure additional supplies, and everyone has been keeping an eye on the continued dispute between state and federal governments on managing the delta.

Carryover storage from a wet 2018-19 winter has eased the impact of this year's reduced Sierra Nevada snowpack and the resulting partial supplies from the federal Central Valley Project and State Water Project.

"Farmers are thankful for the water they are getting, and part of the reason is storage: the system of reservoirs, canals and other conduits designed to take advantage of the plentiful times for use in the lean times," California Farm Bureau Federation Senior Counsel Chris Scheuring said. "Since reservoirs were in good shape to start with, we were able to draw upon some of that supply."

California Department of Water Resources spokesman Chris Orrock said plentiful snow last year and a good soaking of precipitation in December allowed the state to enter 2020 with a decent supply of water.

"We don't want to see another dry year next year, but because we had such a good snowpack last year, we're able to stand a dry year," Orrock said.

As a result of storms this spring, agricultural customers of the CVP and SWP saw slight increases in water availability last month. The U.S. Bureau of Reclamation, which operates the CVP, increased allocations for agricultural customers south of the Sacramento-San Joaquin Delta to 20%, up from 15%. Water allocations in the CVP Friant Division also saw a 5% increase, to 60% of Class 1 water. SWP water contractors saw water supplies increase to 20%, up from 15%.

Westlands Water District public affairs representative Diana Giraldo said the district plans to purchase water to supplement the 20% CVP allocation. She said Westlands expects 160,000 acres within the

to be idled this year.

In Fresno County, Ramon Chavez, who farms in Westlands, said he is busy planting sweet corn and grows a variety of crops including processing tomatoes, garlic, lettuce, apples and almonds.

Regarding whether his portion of the district's 20% allocation will last him through the season, Chavez said, "We'll find out."

Farmer Kole Upton of Chowchilla, who relies on water from the Chowchilla Water District and serves on the district board, said the increase for the CVP Friant Division will help.

"We did our calculations based on the 55%, so if we get a little bit more water, that's great," said Upton, who grows almonds, pistachios and field crops. "Maybe we can go a little longer."

Upton said his field-crop ground gives him flexibility to idle land when water is short.

"There's a certain amount of our ground that's going to be basically fallowed during the summer," he said, adding that many farmers are thinking ahead to impacts of the Sustainable Groundwater Management Act. "SGMA is going to be a tough one because if you can't get surface water, you're going to be idling land."

The Kern County Water Agency, which buys water from the SWP, will be "using every available asset to help meet these shortages," Water Resources Manager Holly Melton said.

"We're very fortunate in Kern that our leaders had the foresight to establish groundwater banking programs and have been able to recharge water in wet conditions to meet future water needs during these dry conditions," Melton said.

In the Sacramento Valley, "most water suppliers are in a pretty good place because we have good surface water storage and good groundwater storage," Northern California Water Association President David Guy said.

On Monday, the Bureau of Reclamation notified Sacramento River settlement and San Joaquin River settlement and exchange contractors that inflow to Lake Shasta is now expected to be greater than 3.2 million acre-feet. That means those contractors should now expect 100% water supplies; in April, the bureau had reduced allocations to 75%, based on inflow projections.

Meanwhile, the federal water temperature plan for Lake Shasta sits stymied before the State Water Resources Control Board, after the board rejected the federal plan, saying the plan needed more data and modeling of cold-water scenarios involving cutbacks. The board gave the Bureau of Reclamation 20 days to provide the modeling data.

Guy said the temperature management plan also is the focus of litigation brought by the state and environmental groups over a new federal biological opinion for delta fish. In addition, the state water board said last week it would curtail water rights permit holders with Term 91 clauses—permits issued after 1965 that are junior to the CVP and SWP.

"It's just crazy to me that people are talking about cutting water supplies to our economy right now, when we're, as a state, scrambling to rebuild our economy," Guy said.

Farm Bureau's Scheuring said the state-federal policy dispute throws unneeded uncertainty into already-

complicated delta management questions.

"When we have a tough, dry year like this one, adding state and federal policy infighting into the equation is absolutely a step in the wrong direction," Scheuring said.

Elsewhere in the Central Valley, the Modesto and Turlock irrigation districts, which jointly operate Don Pedro Reservoir on the Tuolumne River, expect to provide full allocations to farmers this season, thanks again to good reservoir conditions.

"There wasn't much snowfall, but the little bits of snow and rain that we've received have been very beneficial," said Nick Blom, a Modesto-area farmer and MID board member. "We've got July to October, plus maybe one more (month), so farmers are looking at five more irrigations, which I think we'll have plenty of water to do that."

In Santa Barbara County, which has faced drought conditions for several years, winegrape grower Kevin Merrill said he's thankful for average rainfall this year.

"We got some rain late in the spring, which caught us up a little bit," said Merrill, who mostly relies on groundwater and serves on local groundwater sustainability agencies. "We are still facing the results of a multi-year drought, so it takes a while to recover."

In general, Scheuring said, "farmers in most places are not getting full entitlements, but they're getting enough to get by—and next year could be a whole different story if we have another dry year."

The variability of annual precipitation, plus expected constraints on groundwater resulting from SGMA, "ultimately underscore the need for additional water storage in California," he said.

"We've got to store and move water to do what we do, to have this marvelous agricultural economy that feeds the state, nation and the world," Scheuring said.

(Christine Souza is an assistant editor of Ag Alert. She may be contacted at csouza@cfbf.com.)

CAL MATTERS

COMMENTARY ENVIRONMENT

What's at the heart of California's water wars? Delta outflow explained

BY GUEST COMMENTARY

PUBLISHED: MAY 28, 2020

Regulatory changes in the outflow of water in the Sacramento-San Joaquin Delta are a big deal because they come with potential trade-offs between supplying water for farms and cities or for the ecosystems that support endangered species, recreation and commercial fishing. Photo by Bill_Dally via iStock

By Jeffrey Mount and Greg Gartrell, Special to CalMatters

The latest dustup In California's water wars, as noted in Dan Walters' commentary, revolves principally around the federal government's efforts to increase the amount of water supplied to farms and cities by the Central Valley Project, and a breakdown in cooperation between the state and federal government.

It seems like everyone is suing each other. But what are they really fighting over?

To the uninitiated, the details of this conflict are hard to follow; a good summary can be found in Western Water. This is made more confusing by an array of contradictory narratives.

At the heart of the controversy is "Delta outflow." This is the volume of water that flows from the Sacramento-San Joaquin watershed, through the Delta and into San Francisco Bay.

Regulatory changes in required Delta outflow are a big deal because they come with potential trade-offs between supplying water for farms and cities or for the ecosystems that support endangered species, recreation and other uses of the Delta.

We conducted a study in 2017 of the destination of water once it enters the Delta. About a quarter of it is either pumped from the Delta by the state and federal projects or used within the Delta. The rest becomes fought over and misunderstood outflow into San Francisco Bay.

One common narrative is that outflow is water "wasted to the sea." Closer examination shows that most outflow either cannot be used or is needed to maintain water quality for water supply. The portion fought over - water allocated to protect the ecosystem - is surprisingly small.

Most Delta outflow is water that can't be captured because it's simply too costly to store, divert and use - capturing it would require new expensive reservoirs and aqueducts. These uncapturable flows come during winter storms or periods of very high snowmelt runoff, occurring even in dry years. And this outflow is not "wasted" since it plays a vital role in the health of San Francisco Bay.

Additionally, to keep the Delta fresh enough to use for farms and cities, a large amount of water *must* flow into the bay year-round. If outflow drops too low - especially when export pumps are operating - the Delta gets too salty. The amount of this outflow is large - roughly four times the amount of water exported to Southern California cities.

The big fights are over the third category: the outflow allocated to protect the Delta ecosystem and fish protected by state and federal Endangered Species Acts. This is the volume of outflow over and above that required to keep the Delta fresh enough for water supply.

Environmentalists have claimed that ecological outflow is insufficient, and that it has remained largely unchanged despite 40 years of regulation. For the former claim, the uncertainties are large, but more water for the environment - more effectively allocated and paired with habitat improvements - is likely needed to improve the health of the Delta ecosystem. But for the latter claim, they are wrong. Since 1995 the amount of water dedicated by regulation to the ecosystem has grown significantly from virtually nothing in 1980 to about 12% of average inflow today, except during dry years when the proportion is much lower.

Many in the water user community point to Delta outflow to protect the ecosystem and fish as a primary cause of water scarcity. But again, this claim is often overstated. At times, natural runoff is sufficient to meet ecological standards with no net cost to water supply.

We estimate that since 2008, when the most stringent regulations were enacted, roughly half of the ecological outflow has come at the expense of supply. That is still a lot of water - enough to support more than 400,000 acres of farmland or more than 2 million households - but far less

than commonly claimed. And focusing solely on water supply costs ignores the broader benefits of a healthy Delta ecosystem.

These facts don't change the roots of the disagreement. The various interests are fighting over real trade-offs between water supply for farms and cities, and Delta outflow to protect the ecosystem. But both sides tend to talk past each other and overstate their cases.

The numerous lawsuits are also a high-risk, low-reward strategy for addressing this problem, because the solution involves much more than a judge changing the Delta outflow equation. Instead, the answer lies in getting back to the table and negotiating a comprehensive agreement – with more on the table than just outflow – that most parties can live with, even if they don't like everything about it.

Jeffrey Mount is a senior fellow at the PPIC Water Policy Center, mount@ppic.org. Greg Gartrell is an independent consulting engineer and an adjunct fellow at the PPIC Water Policy Center, greggartrell@ix.netcom.com. They are coauthors of A New Approach to Accounting for Environmental Water: Insights from the Sacramento-San Joaquin Delta, *which informed this piece. Mount has also written about endangered species act. They wrote this commentary for CalMatters.*

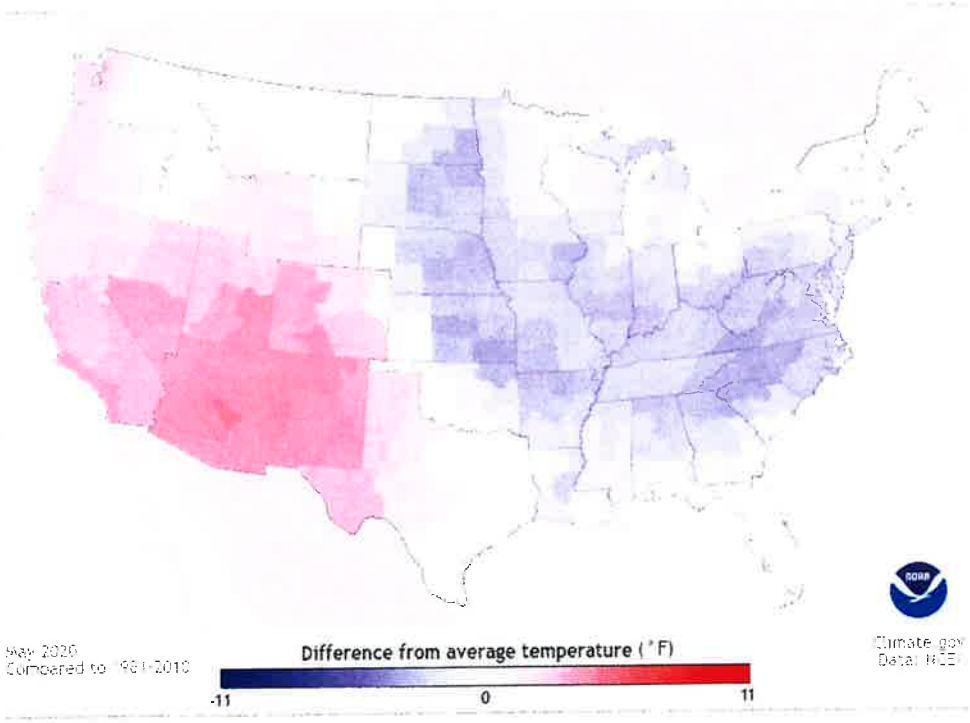
Climate.gov
science & information for a climate-smart nation

Was May 2020 warm and dry or cool and wet across the U.S.? It depends…

Author:
Rebecca Lindsey (https://www.climate.gov/author/rebecca-lindsey)

June 9, 2020

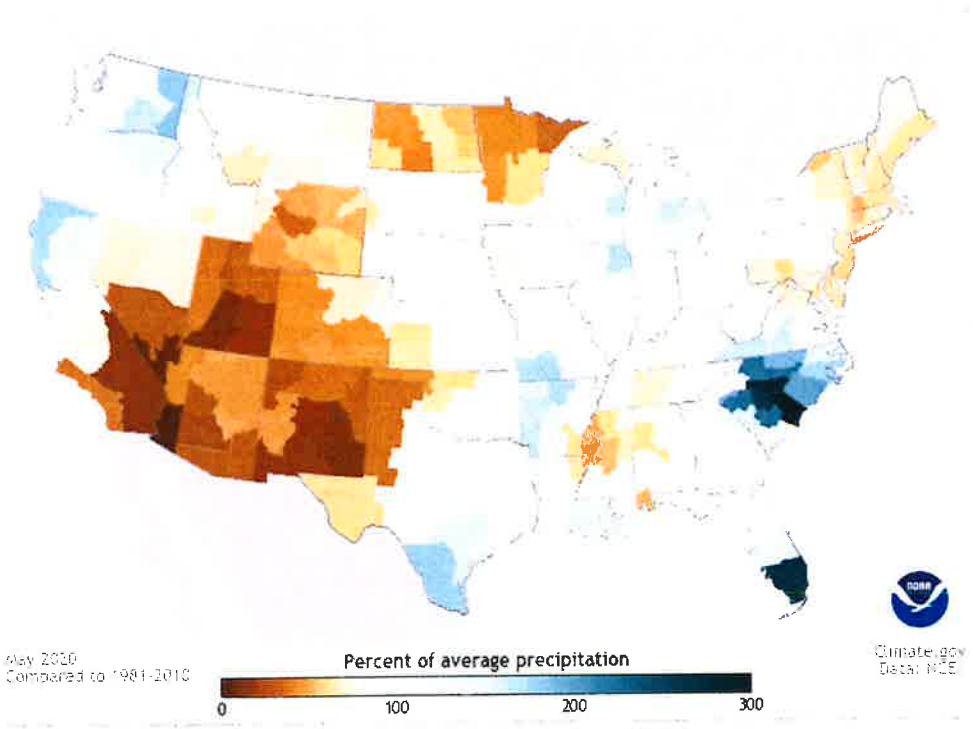
The May 2020 climate summary for the United States was released yesterday by NOAA's National Centers for Environmental Information, and the temperature patterns were mixed: a warm West and cool East. In the Four Corners region, a few areas were record warm (https://www.ncei.noaa.gov/sites/default/files/May-2020-US-Average-Temperature-Percentiles-Map.png). In the East, temperatures were much cooler than average in the Southern Appalachians in southwestern Virginia, the Carolinas, and northern Georgia.



Map of May temperatures across the United States compared to the 1981-2010 average. Much of the West was warmer than average (red), while much of the East was cooler than average (blue). Map from Climate.gov's Data Snapshots collection, based on data from NCEI.

The bigger stories in May were about extremes of precipitation—where it fell heavily and caused flooding, and where it didn't, contributing to drought. Among the big events was an atmospheric river that flowed between the Gulf of Mexico to the Great Lakes in mid-May, supplying tremendous amounts of warm, wet air to the Upper Midwest. In Michigan, several days of heavy rain ended with the collapse of a dam and the evacuation of thousands of downstream residents.

The moisture was swept up in a low-pressure system that got cut off from the wider west-to-east atmospheric flow. This cut-off low meandered generally southeast, soaking parts of the Ohio Valley and the Appalachians of West Virginia and the Carolinas over several days. Many parts of the region experienced above or much above normal precipitation.

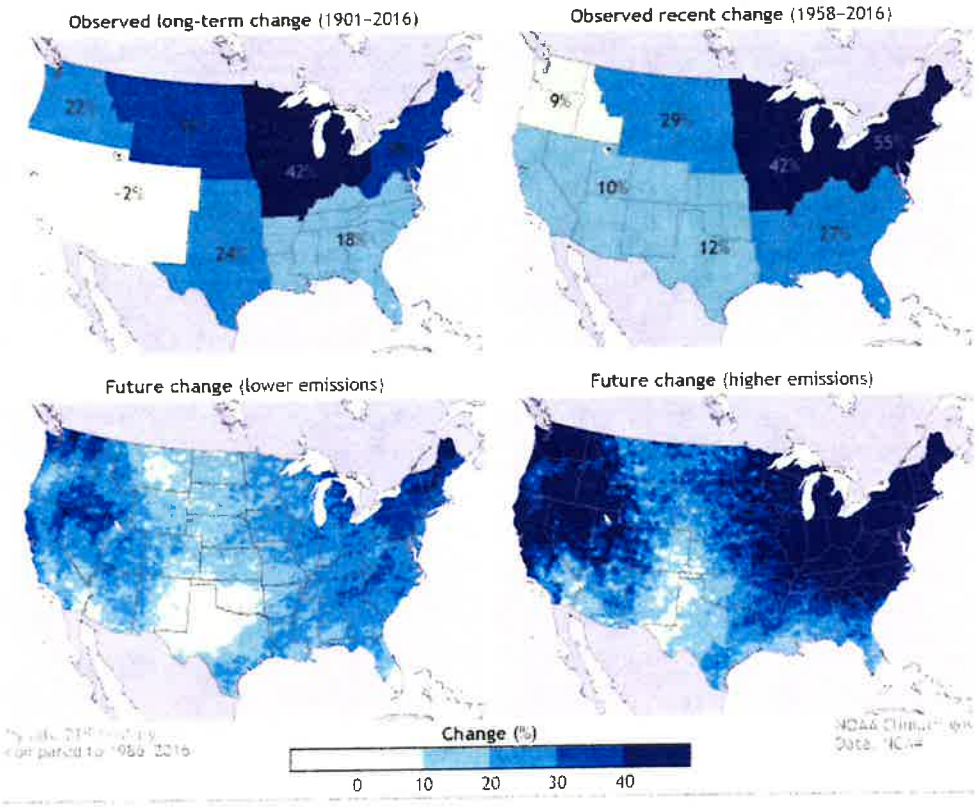


Map of May precipitation across the United States as a percent of the 1981-2010 average. Much of the West had less than 100% of their normal precipitation (brown), while much of the East had more than 100% of their normal May precipitation (green). Map from Climate.gov's Data Snapshots collection, based on data from NCEI.

May precipitation was also above average around the Gulf Coast, with some areas record or near record wet. Among the extremes was southern Florida, where rainfall associated with Tropical Storm Bertha contributed to Miami's wettest May on record. (Also noteworthy: May 2020 was a record sixth May in a row in which the first named storm of the Atlantic Hurricane Season formed before the official start of the season on June 1.)

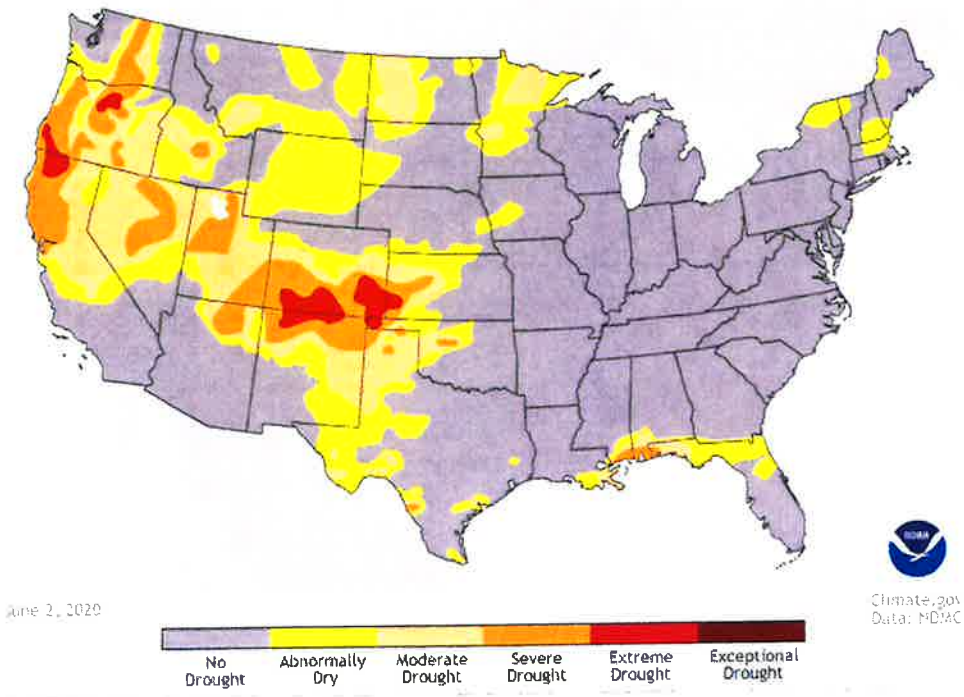
While an extreme event can happen in any month regardless of climate change, it's also the case that heavy rain events are becoming more likely across much of the country. As rising levels of atmospheric carbon dioxide boost Earth's surface temperature, more water evaporates from the ocean and land surfaces. A wetter atmosphere has the potential to make more rain during a given event. According to the National Climate Assessment, it's a trend that will continue in the coming decades, even if greenhouse gas emissions follow a lower pathway.

Change in extreme precipitation across the United States



*(**top**) Observed changes in extreme precipitation over the entire historical record (left) and over the most recent decades (right). Bigger increases appear in darker colors. Extreme precipitation has increased significantly in most regions, with the biggest increases in Upper Midwest and the Northeast. (**bottom**) Future increases in heavy rain under two possible greenhouse gas pathways, lower (RCP 4.5, left) and higher (RCP 8.5, right). The biggest increases are projected for the Pacific Northwest, the Upper Midwest, and the Northeast. Maps by NOAA Climate.gov, based on data from the Fourth National Climate Assessment.*

Meanwhile, May 2020 precipitation was below or much below average across large areas of the Rockies and the Southwest, including northern Texas. Southern California and the southwestern corner of Arizona were record dry. May precipitation deficits allowed drought conditions to deepen across Nevada, Utah, Colorado, northern New Mexico, and western Oklahoma and northern Texas. Moderate drought also emerged in North Dakota and Minnesota. The total area in the contiguous United States experiencing some level of drought rose to just shy of 20% in May.

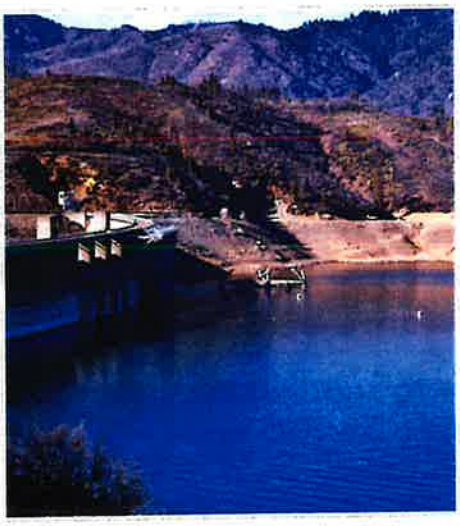


Areas of the contiguous United States affected by drought as of June 2, 2020. Moderate to extreme drought stretched across many Western states. Map from Climate.gov's Data Snapshots collection, based on data from the U.S. Drought Monitor project.

For more details on the May 2020 and spring climate summary for the United States, visit (https://www.ncei.noaa.gov/news/national-climate-202005) the NCEI website. For more information on the impacts of climate change across the United States, browse the Fourth National Climate Assessment (https://www.globalchange.gov/nca4) by the U.S. Global Change Research Program.

Reclamation announces Shasta non-critical water year

By California Water News Daily on June 9, 2020



The Bureau of Reclamation announced that the forecasted inflow to Shasta Lake is currently projected to be greater than 3.2 million acre-feet and declared we are in a "Shasta Non-Critical" year.

The California Department of Water Resources published an updated Bulletin 120 last week that shows a large increase in Shasta Lake inflow since the May 1 forecast. The forecasted inflow to Shasta Lake is now greater than 3.2 million acre-feet, changing the previous determination of a "Shasta Critical" to "Shasta Non-Critical" water year as defined in certain Central Valley Project contracts.

A Shasta critical year is declared when the forecasted inflow to Shasta Lake, (the cornerstone reservoir in the federal Central Valley Project), is at or below 3.2 million acre-feet. Storage in the reservoir as of mid-April was just over 3.7 million acre-feet.

The Central Valley Project serves farms, homes and industry in the Central Valley, San Joaquin Valley and the San Francisco Bay Area. The project provides water for 6 of the top 10 agricultural counties in California.

Central Valley Project water supply updates are posted at https://www.usbr.gov/mp/cvp-water/index.html.

drought featured

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A Pulitzer Prize-winning, non-profit, non-partisan news organization dedicated to covering climate change, energy and the environment.

New Study Shows Global Warming Intensifying Extreme Rainstorms Over North America

The current warming trajectory could bring 100-year rainstorms as often as every 2.5 years by 2100, driving calls for improved infrastructure and planning.

BY BOB BERWYN, INSIDECLIMATE NEWS

JUN 2, 2020

A pedestrian crosses in the intersection of Queen Street and Victoria Street during heavy rain in Auckland, New Zealand. Credit: Jason Oxenham/Getty Images

New research showing how global warming intensifies extreme rainfall at the regional level could help communities better prepare for storms that in the decades ahead threaten to swamp cities and farms.

The likelihood of intense storms is rising rapidly in North America, and the **study**, published Monday in the *Proceedings of the National Academy of Sciences*, projects big increases in such deluges.

"The longer you have the warming, the stronger the signal gets, and the more you can separate it from random natural variability," said co-author **Megan Kirchmeier-Young**, a climate scientist with **Environment Canada**.

Previous research showed that global warming increases the frequency of extreme rainstorms across the Northern Hemisphere, and the new study was able to find that fingerprint for extreme rain in North America.

"We're finding that extreme precipitation has increased over North America, and we're finding that's consistent with what the models are showing about the influence of human-caused warming," she said. "We have very high confidence of extreme precipitation in the future."

At the current level of warming caused by greenhouse gases—about 1.8 degrees Fahrenheit above the pre-industrial average—extreme rainstorms that in the past happened once every 20 years will occur every five years, according to the study. If the current rate of warming continues, Earth will heat up 5.4 degrees by 2100. Then, 20, 50 and 100-year extreme rainstorms could happen every 1.5 to 2.5 years, the researchers concluded.

"The changes in the return periods really stood out," she said. "That is a key contributor to flash flooding events and it will mean that flash flooding is going to be an increasing concern as well."

Better Science, Better Forecasts

The 2013 floods in Boulder, Colorado that killed nine people and caused more than $2 billion in property damage are a good example of how such climate studies can help

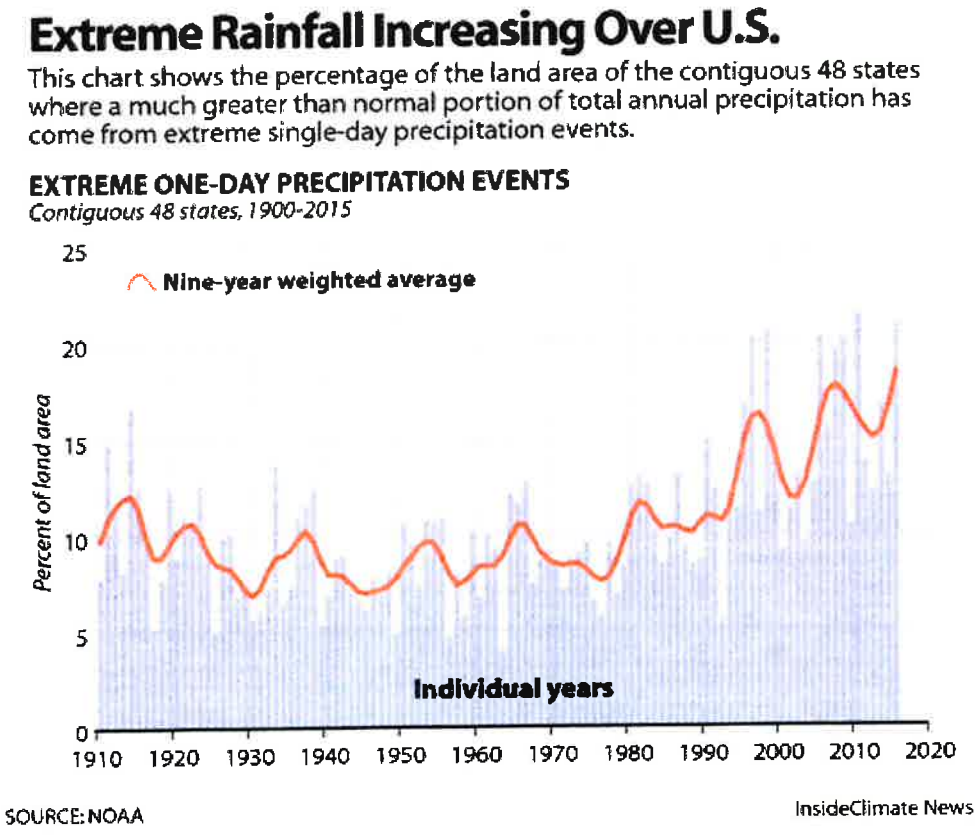
improve flood forecasts, said Kevin Trenberth, a climate scientist with the National Center for Atmospheric Research in Boulder, Colorado.

"That was an exceptional event and the rain was like tropical rain. The radars greatly underestimated the magnitude as a result," said Trenberth who returned to his home in Boulder during the floods with a broken foot, only to have to climb on his roof to direct the gushing water away from his house.

A subsequent **study** found that the rain resulted from an unusual atmospheric brew over Colorado. Mountain thunderstorms mingled with a juicy atmospheric river from the tropics, dropping up to 17 inches of rain in a few days, nearly as much as Boulder's annual average total. Human-caused climate change "increased the magnitude of heavy northeast Colorado rainfall for the wet week in September 2013 by 30%," the study found.

A separate **study** concluded that global warming actually decreased the likelihood of the 2013 floods. The conflicting results hint at the complexities of climate research, but, since then, the influence of human-caused climate change on extreme weather has become more clear.

The risks will continue to increase as the atmosphere warms, said David R. Easterling, a climate extremes researcher and director of the **U.S. National Climate Assessment**. "The detection has been there for a while on a lot of extreme events," said Easterling, who was not involved in the new study. "We're going to see increases in extreme events, and we need to be prepared."



Easterling said most current infrastructure, such as dams and bridges, was designed based on rainfall values from the mid- to late-20th century and was not built to withstand the more frequent extreme rains identified by the new research.

"There are going to be much more damaging floods that are going to wash out a lot of the infrastructure," he said. "You'll see more floods and bigger floods and major impacts to our civil engineering infrastructure."

According to the **Environmental Protection A**gency's website, data from the National Oceanic and Atmospheric Administration indicates that the percentage of total precipitation coming from intense single day events has increased significantly since about 1980, with nine of the top 10 years for extreme one-day precipitation events occurring since 1990. The EPA's **precipitation indicator website** also shows similar changes at the global scale.

Warmer Air, More Moisture and Shifting Storm Tracks

One way to visualize the planet's climate system is as a heat-driven pump that tries to balance the planet's energy by circulating it around the globe and cycling it from oceans, to land, to the atmosphere. Global warming puts more heat into the pump and that energy is manifested elsewhere in the system. For instance, for every 1.8 degrees Fahrenheit of warming, the atmosphere holds 7 percent more moisture that can fall as extreme rain, hail or snow.

But global warming can increase rainfall by much more than 7 percent in individual events. In Hurricane Harvey, for example, the estimated boost in rainfall was about 30 percent, said Trenberth.

"The outcome depends on the kind of storm. If the rainfall is in or near the center of the storm, as for a hurricane, then the extra oomph from the latent heat release intensifies the storm and makes it bigger and longer lasting," he said. "This can also happen for an individual thunderstorm." He was not involved in the new study.

For storms outside the tropics, the most rain happens away from the center, which doesn't necessarily make the rain more intense, but can affect the way the storms move and develop, he added.

"This is the atmospheric river phenomenon and requires the weather situation to remain stuck for a bit, as a river of moisture from the subtropics, like the pineapple express, pours into a region," he said. A 2019 **study** showed that atmospheric rivers cause most of the flood damage in the Western United States already, and global warming is projected to **intensify those events**.

In addition to simply having more moisture in the atmosphere, global warming may also drive more extreme rainfall by **shifting global weather patterns**, said climate scientist

Peter Pfleiderer, with **Climate Analytics** in Berlin.

In a 2019 **study** published in the journal *Nature Climate Change*, Pfleiderer and other scientists looked at how global warming changes weather patterns in ways that make heat waves, droughts or rainstorms longer or more intense. With global temperature increases of 2.7 to 3.6 degrees Fahrenheit (the range to which the Paris climate agreement hopes to limit warming), periods of heavy rain would increase 26 percent—the most of all the weather phenomena studied—the research found.

Friederike Otto, acting Director of the Environmental Change Institute at Oxford, said new research showing how global warming affects extreme rain regionally complements studies that identify the effect on individual events.

As a co-investigator with World Weather Attribution, Otto has been involved in a series of recent studies looking at how global warming affects **droughts**, **heat waves** and **extreme rain**. The strongest signal, as she expected, was with heat waves, but she expects rain events "far outside the observations so far."

"One thing I only started to realize in the last year, is how important attribution is for making projections," she said. Climate attribution studies show how the warming of the planet makes some extremes more likely, and intensifies other weather events. Linking measurements of what actually happens with model predictions "gives you more confidence that the changes are because of climate change," she said.

Escalating Impacts Require Adaptation and Resilience

Floods caused by extreme rain are among the costliest climate-related disasters. A NOAA **compilation** of billion-dollar disasters lists a long string of deadly catastrophes caused, at least in part, by extreme rain. These include the January 2020 floods in New York, Michigan and Wisconsin, where significant damage along the shoreline of Lake Michigan was compounded by extremely high water levels in the lake, as well as a lack of seasonal ice cover.

In 2019, extreme and persistent spring rainfall in the Midwest led to one of the **costliest inland flooding events on record**. Floodwaters inundated millions of acres of farms, along with numerous cities and towns and **Offut Air Force Base** in Nebraska—the third U.S. military base to be damaged by a billion-dollar disaster in a six-month period. In all, that wave of flooding caused $10.9 billion in damage, NOAA estimated.

Earlier this month, persistent heavy rains contributed to the failure of **a dam in Michigan**, and Easterling said heavy rains were also implicated in the 2017 **Oroville Dam failure** that cost $1.1 billion and forced the evacuation of 180,000 people. The flooding caused by record rainfall from Hurricane Harvey in 2017 was a big part of the $125 billion worth of damage caused by the storm.

Extreme rain can also have an impact on a smaller scale. In mountainous areas, heavy precipitation over even a small area can be disastrous. In the Rocky Mountains, such cloudbursts have caused toxic floods of acidic water from abandoned mines, and in the European Alps, scientists say extreme rains are unleashing larger and more destructive **rockfalls and landslides**.

"We are going to get more intense, extreme precipitation, this is one of the things we are sure about," said **Hannah Cloke**, a University of Reading natural hazards researcher and hydrologist specializing in flood forecasting.

The United Kingdom has been hit repeatedly by extreme rain in recent years, including Storm Desmond in 2015, which was **linked with global warming** and caused at least $550 million in damage, flooding nearly 10,000 homes and businesses. Cloke said the recent flooding has apparently even shaped her daughter's world view. For a recent school assignment, the nine-year-old used plastic bottles to build a floating house reminiscent of the movie *Waterworld*.

"Most of the design standards for storm infrastructure are not high enough for the predictions, or even what we're seeing right now," she said. "We have to get away from the idea that you can just carry on business as usual. We have to adjust our expectations of what could happen. We need to get people out of harm's way and be realistic about where we live."

Cloke said the certainty of increased extreme rainfall means that communities have to adapt by creating or restoring natural areas that can soak up the rains in the uplands, and cities need to be redesigned with green roofs and other measures to prevent flood waters from piling up and destroying property. More and more, flood experts are thinking in terms of socio-hydrology, she said.

"You can't just look at the water, at the heavier rain, and how fast it's running down the rivers," she said. "It's about how humans and water interact at all levels, and how politics controls where the water is. It's about who is at risk of flooding and whether those people have any agency to reduce the risk."

New research like the PNAS study that shows the regional fingerprint of global warming on extreme rainfall can help reduce the risk, she said, because it enables better short-term forecasts.

"We have a lot of the right science in place but we still can't predict the exact locations and amounts," she said. "We don't quite understand the development of the water cycle and we often underestimate rainfall for those reasons. But we shouldn't be surprised that these rains are happening. We're going to see entire cities at a standstill."

PUBLISHED UNDER:
EXTREME WEATHER

Seasonal Maps Provide Snapshot of State Groundwater Levels

Published: May 28, 2020

Groundwater is an important resource for Californians because rain and snowfall levels can vary dramatically from year to year. Groundwater provides 40 percent of the state's water supply in normal years and up to 60 percent in dry years when surface water in lakes, rivers and reservoirs may be reduced.

Surface water is measurable and visually one can see if water levels are low or high or if a river has run dry, but measuring groundwater conditions is more challenging because groundwater is beneath the ground and distributed among the varied layers of aquifers.

The Department of Water Resources (DWR) produces groundwater level change maps which show groundwater levels in wells throughout the state. When looked at together, these reports give a statewide picture of groundwater conditions and how they change over time – through wet periods or droughts.

Individual groundwater level change reports provide a snapshot of spring and fall groundwater conditions. Spring data is typically collected immediately before the irrigation season begins in a region. This helps show groundwater levels before summer crop irrigation and other uses. The fall levels are taken at the end of the irrigation period. To view the spring 2019 and fall 2019 groundwater level change maps, go to DWR's Data and Tools webpage, and click on "Maps," then go to "Statewide Groundwater Level Change Maps."

Groundwater level change maps are especially important to groundwater sustainability agencies. The maps provide an inside view into local basins which aids in the creation and implementation of groundwater sustainability plans.

DWR staff processes data from thousands of wells to produce groundwater level change reports. This vast monitoring network is made up of a variety of well types including production wells, such as domestic supply wells, and dedicated monitoring wells.

Bill Brewster, senior engineering geologist in DWR's North Central Region Office, heads the team that plots and checks the data and then issues the twice-a-year reports. Brewster said before joining DWR he worked for a well drilling company which gave him an appreciation for the valuable data wells can provide.

"With issues like subsidence, you can see how groundwater levels affect it. This groundwater level information helps state and local officials manage and continue to monitor land subsidence trends," he said.

Brewster explained that eight DWR staff members spend weeks pulling all of the data together, reviewing it, and then assembling the maps. He further explained there are hundreds of people from many different agencies throughout the state who are out in the field collecting well data and uploading it to the DWR database.

"Without those people, our dataset would be much smaller," he added.

Earlier this year, DWR released a report called California Groundwater Conditions Update – Spring 2019, which provides a series of groundwater level change maps, and compares data from previous years to show groundwater level trends, and long term changes. The report shows that after the drought, there were a number of wet years that filled reservoirs, lakes and rivers, and contributed to recovery in groundwater basins. But in some regions, a significant percentage of wells still showed water levels that had not recovered to pre-drought levels.

The report illustrates that groundwater levels may recover fairly quickly in shallow basins that have direct connection with surface water, while other basins may take many years to recover. A one-year comparison of groundwater levels provides information about the short-term effects of a single wet or dry year, while a multi-year comparison of groundwater levels provides information about trends in groundwater storage.

maps and reports help provide a better understanding of this unseen, yet critically important resource – groundwater.

For more information on groundwater, visit DWR's SGMA Groundwater Management webpage.

USDA

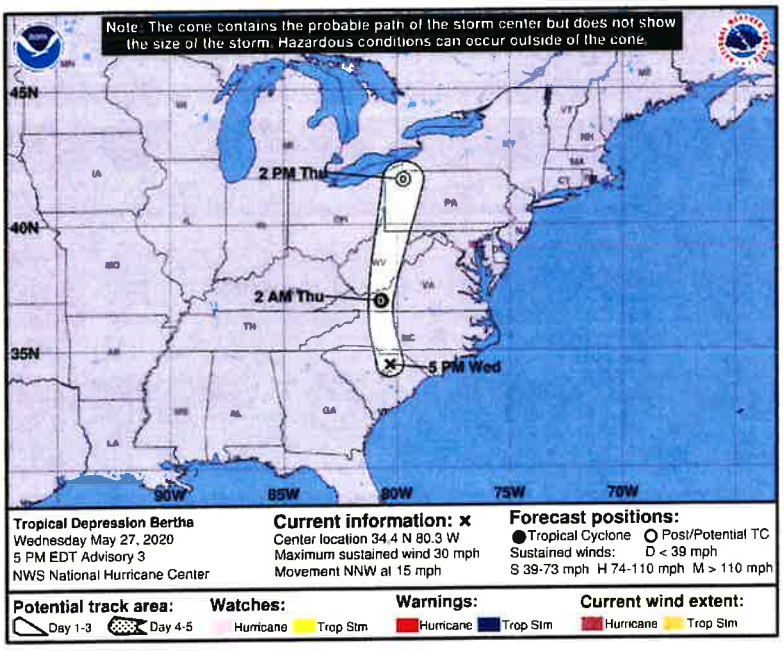
United States Department of Agriculture

Water and Climate Update

May 28, 2020

The Natural Resources Conservation Service produces this weekly report using data and products from the National Water and Climate Center and other agencies. The report focuses on seasonal snowpack, precipitation, temperature, and drought conditions in the U.S.

Second tropical storm of 2020 makes landfall in South Carolina

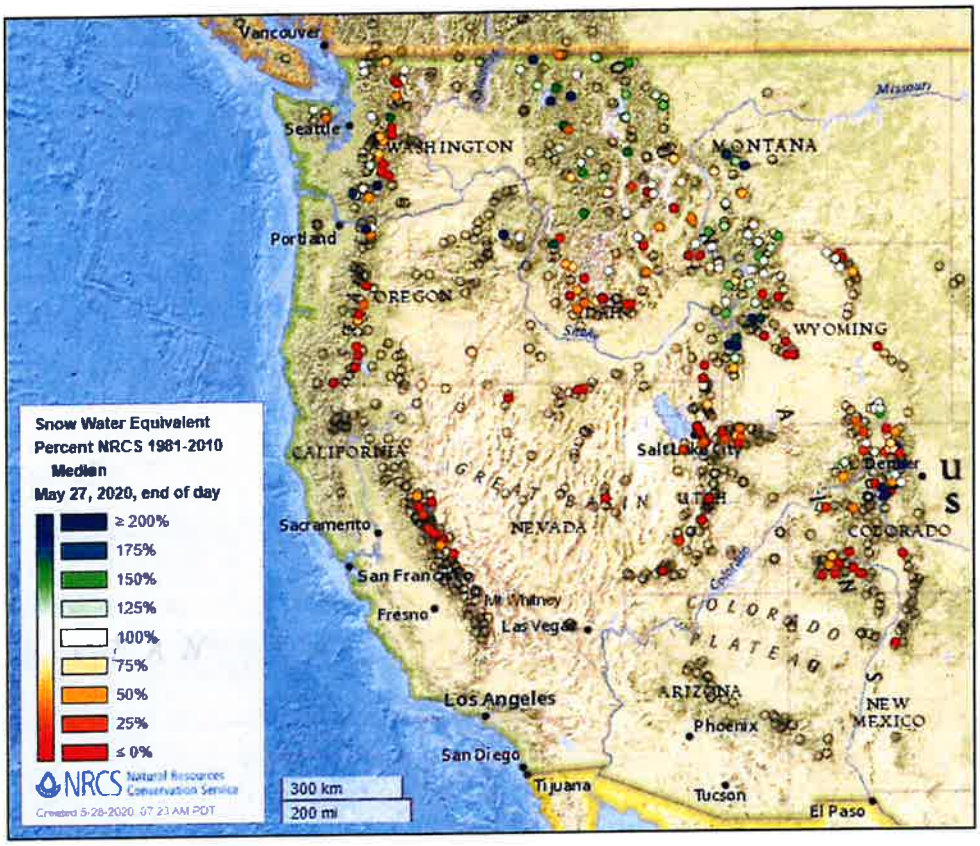


The second named storm of the season, tropical storm Bertha, strengthened quickly off the coast of South Carolina this week. Bertha had received its name just two hours before it made landfall at Mt. Pleasant. The storm began as a tropical disturbance with heavy rain in Florida accompanied by flash flooding. It strengthened quickly as it moved over water. Once over land again, Bertha left heavy rain and flooding along its track. The storm weakened significantly as it traveled inland. The remnants of Bertha are currently centered over eastern Ohio and western Pennsylvania.

Related:

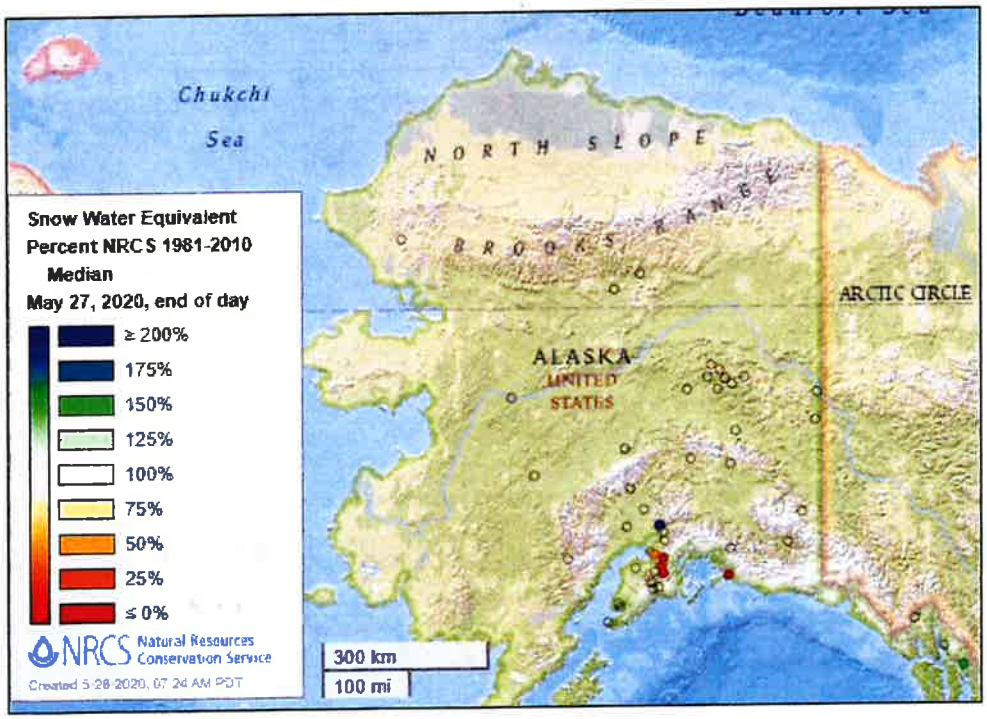
Tropical Storm Bertha makes landfall on South Carolina's coast - CBS News
Tropical Storm Bertha brings heavy winds, potential flooding for Carolinas, Virginia – NBC News
Tropical Storm Bertha quickly forms, strikes South Carolina after dumping 14 inches of rain in Miami – Washington Post
Tropical Storm Bertha develops unexpectedly, causes rain, flooding in Charleston area – The Post and Courier (SC)
Tropical Storm Bertha makes landfall less than two hours after becoming a named system - CNN
Bertha now a tropical depression – WITN (NC) on MSN

Snow



[Snow water equivalent percent of median map]

See also:
[Snow water equivalent values (inches) map]

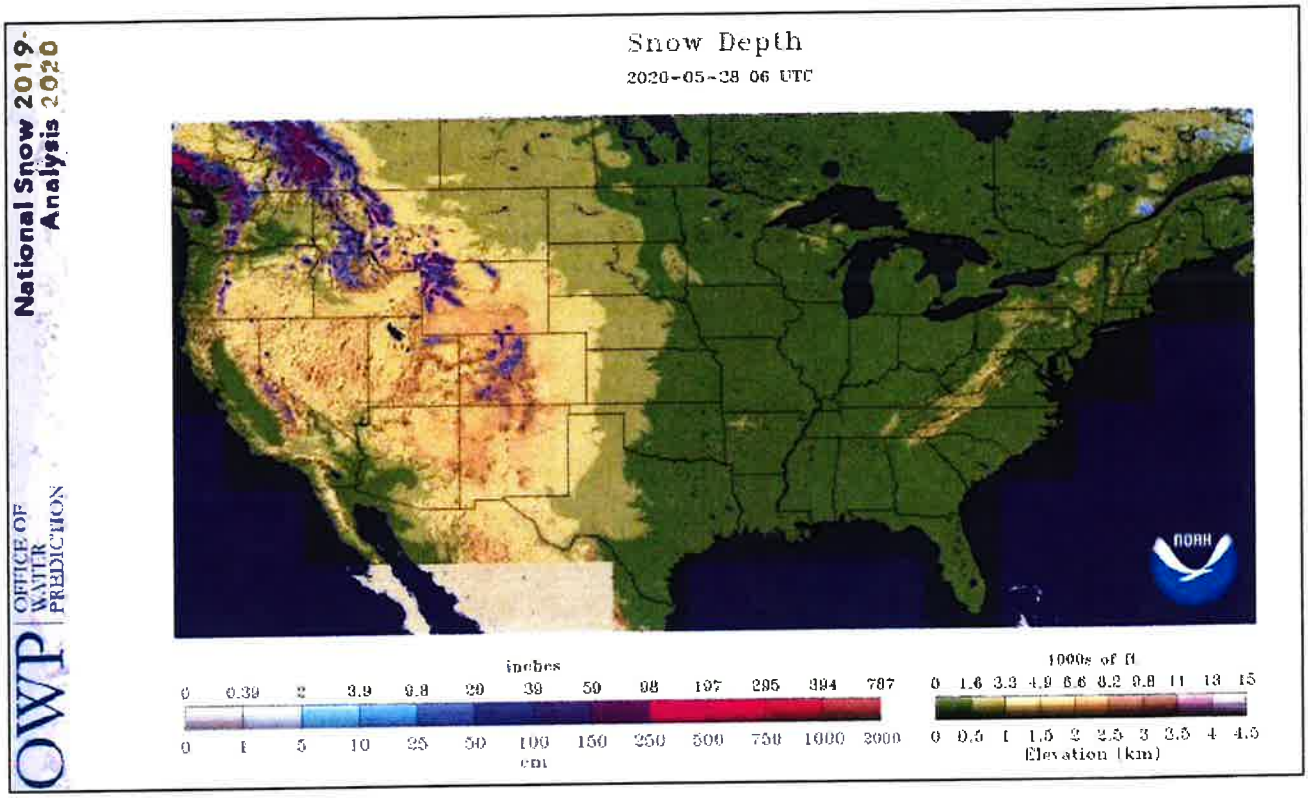


[Alaska snow water equivalent percent of median map]

See also:
[Alaska snow water equivalent values (inches) map]

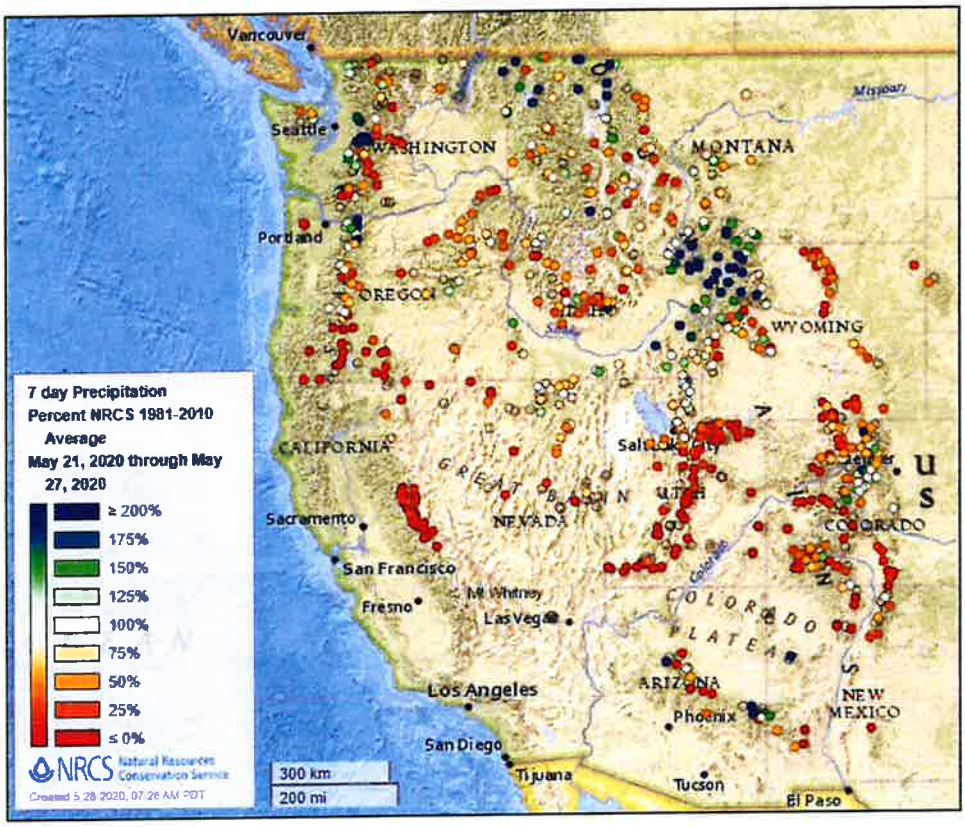
Current Snow Depth, National Weather Service Snow Analysis

Source: NOAA Office of Water Prediction



Precipitation

Last 7 Days, NRCS SNOTEL Network

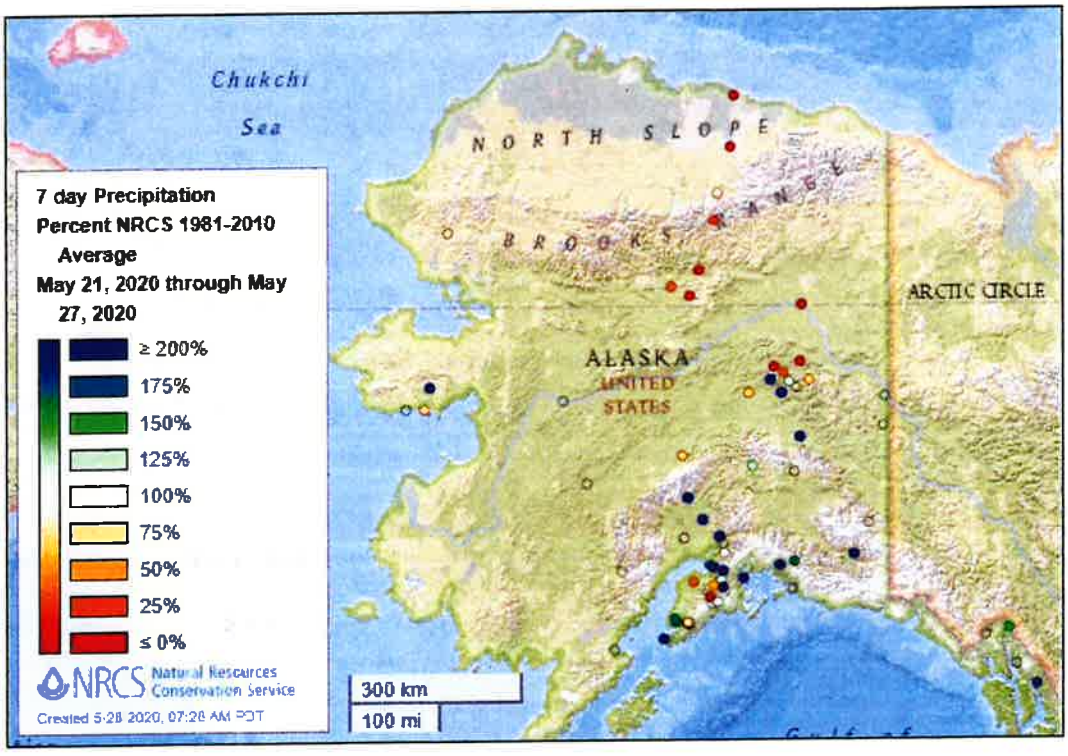


[7-day precipitation percent of average map]

See also:
[7-day total precipitation values (inches) map]

[Alaska 7-day precipitation percent of average map]

See also:
[Alaska 7-day total precipitation values (inches) map]

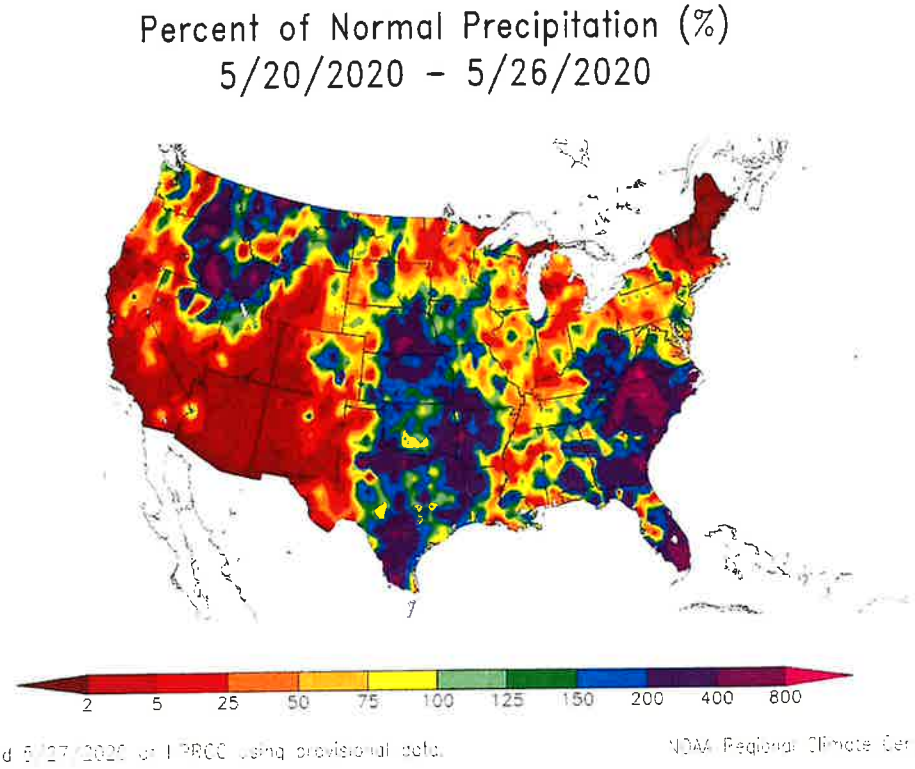


Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

7-day precipitation percent of normal map for the continental U.S.

See also: 7-day total precipitation values (inches) map

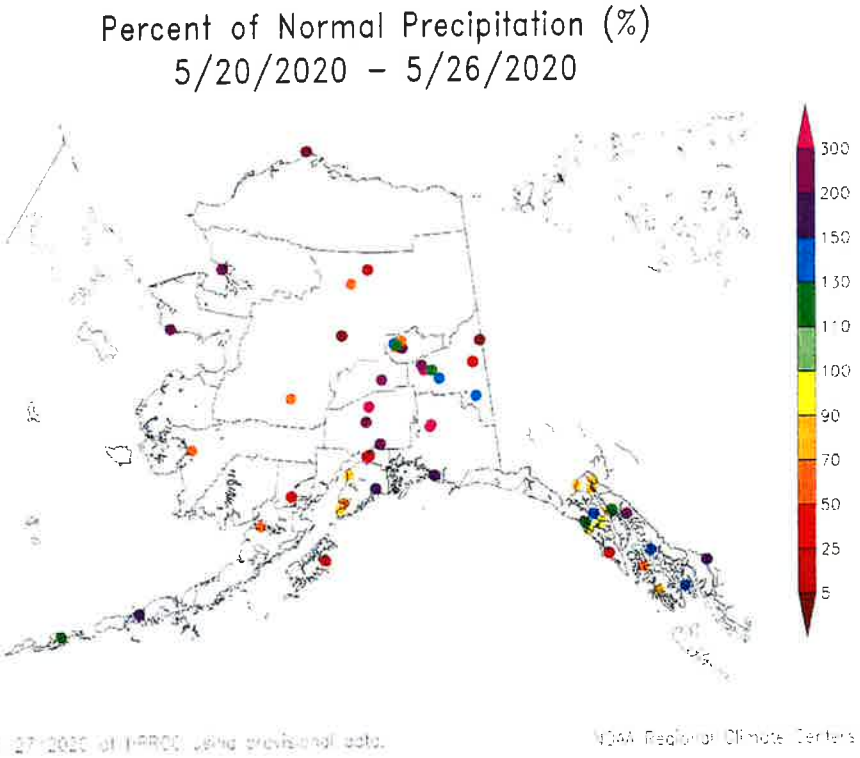


Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

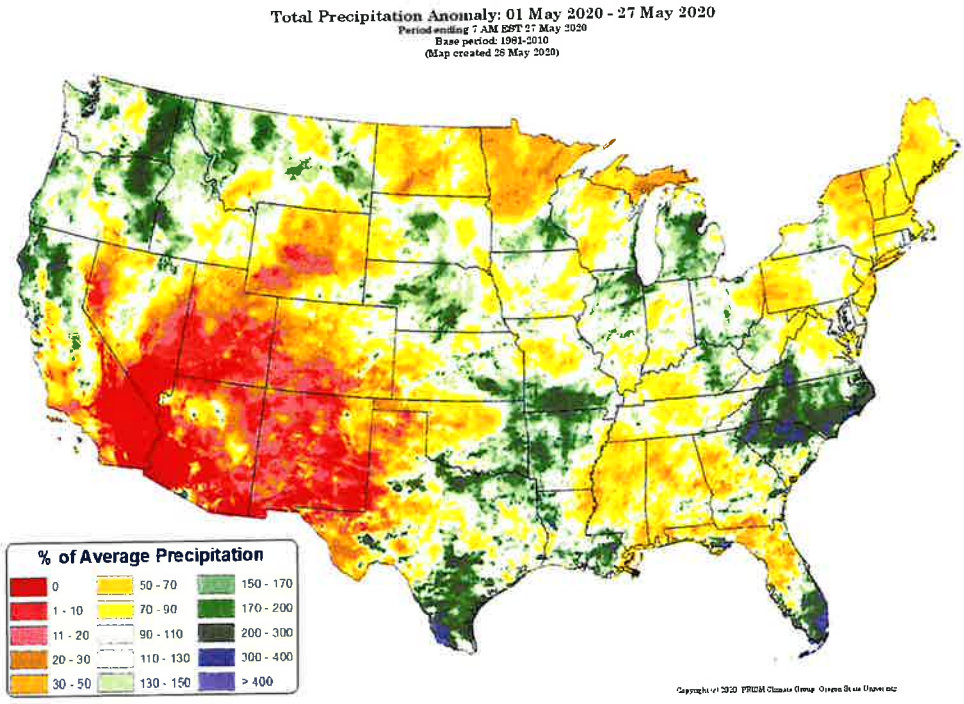
7-day precipitation anomaly map for Alaska.

See also: 7-day total precipitation values (inches) map



Month-to-Date, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

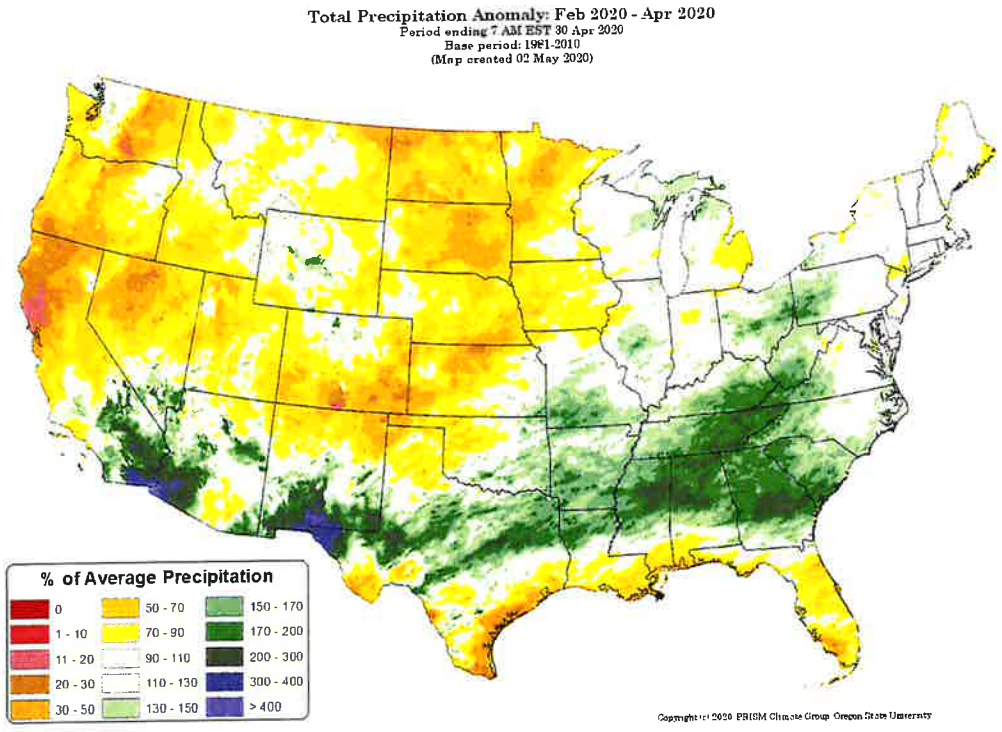


Month-to-date national total precipitation percent of average map

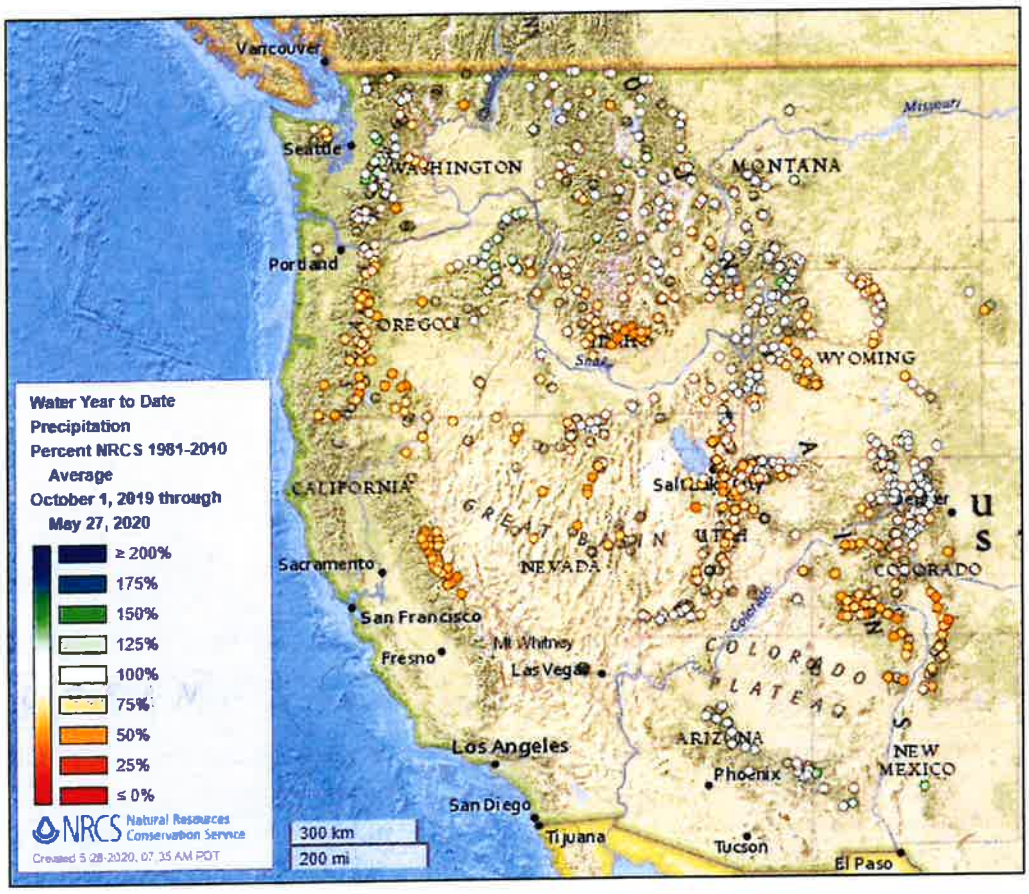
Last 3 Months, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

February through April 2020 total precipitation percent of average map

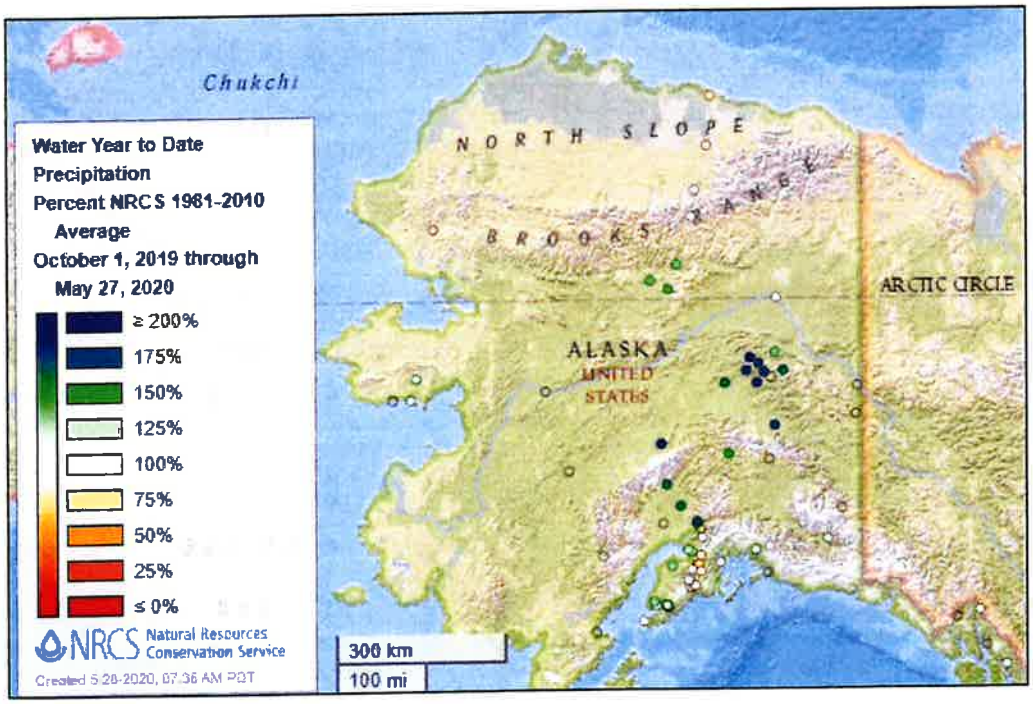


Water Year-to-Date, NRCS SNOTEL Network



2020 water year-to-date precipitation percent of average map

See also: 2020 water year-to-date precipitation values (inches) map



Alaska 2020 water year-to-date precipitation percent of average map

See also: Alaska 2020 water year-to-date precipitation values (inches) map

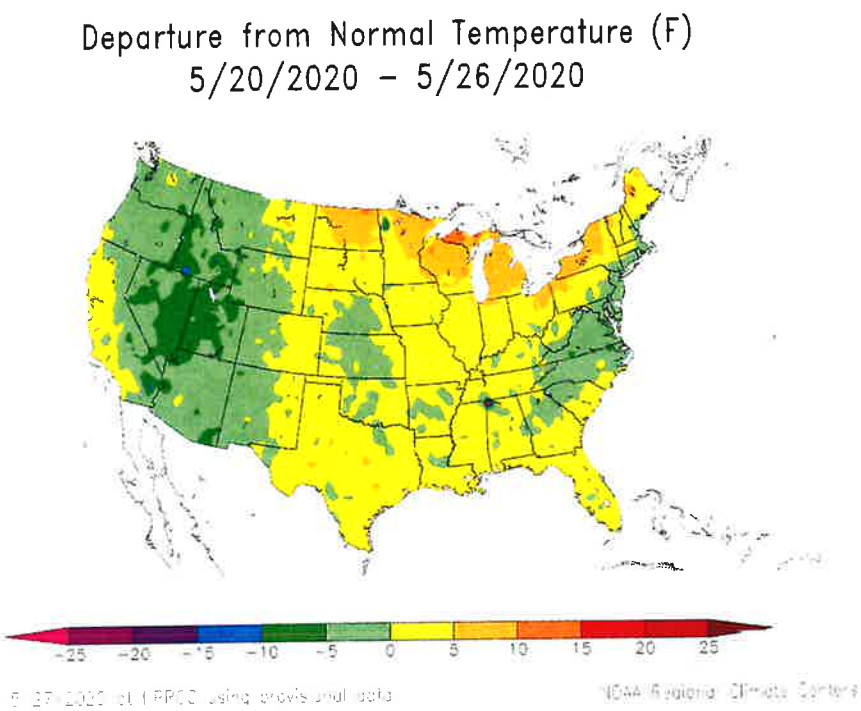
Temperature

Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

[7-day temperature anomaly map] for the contiguous U.S.

See also: [7-day temperature (° F) map]

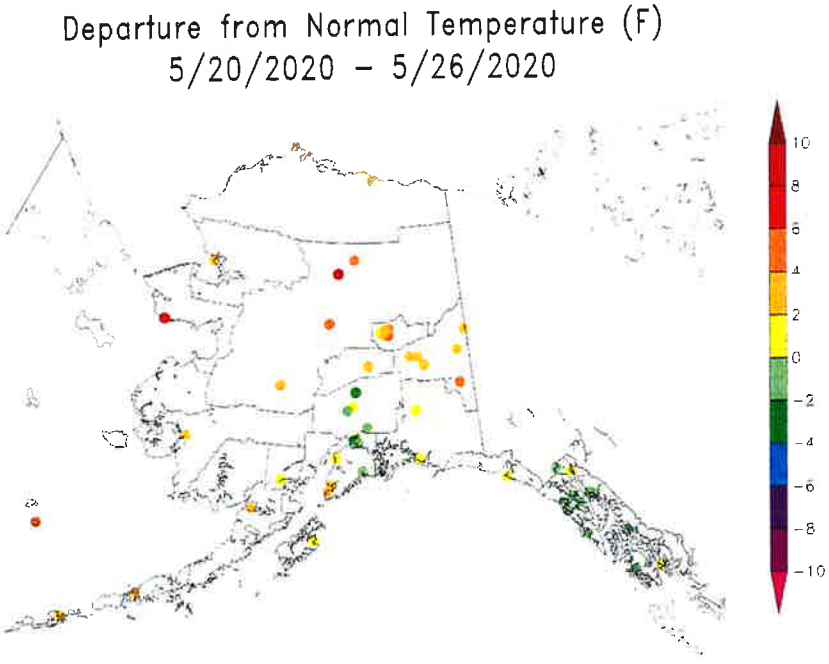


Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

[7-day temperature anomaly map] for Alaska.

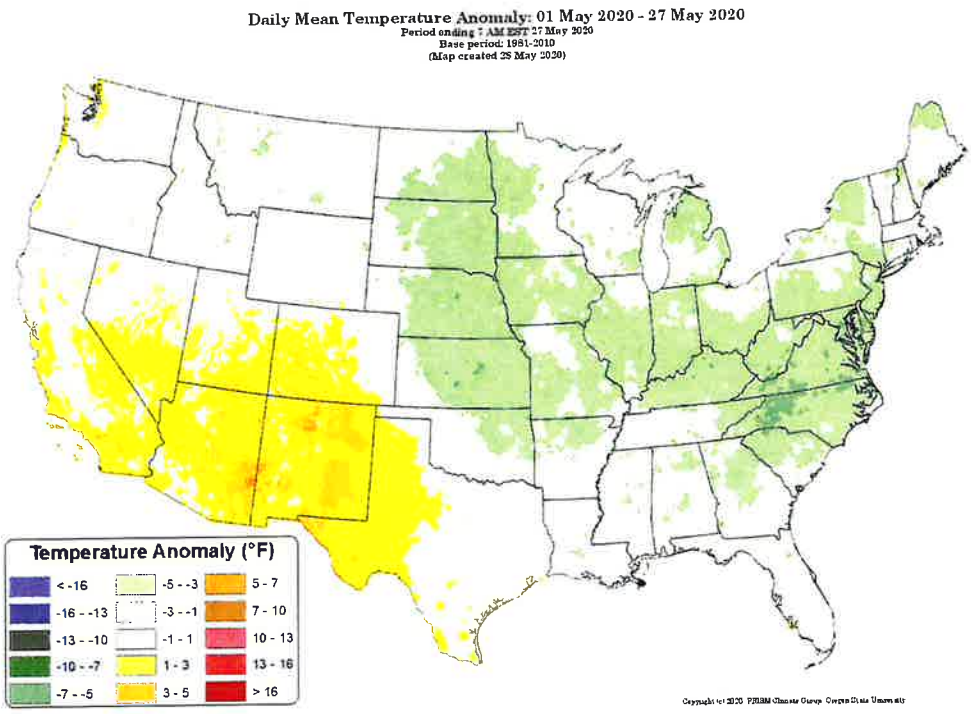
See also: [7-day temperature (° F) map]



Month-to-Date, All Available Data Including SNOTEL and NWS Networks

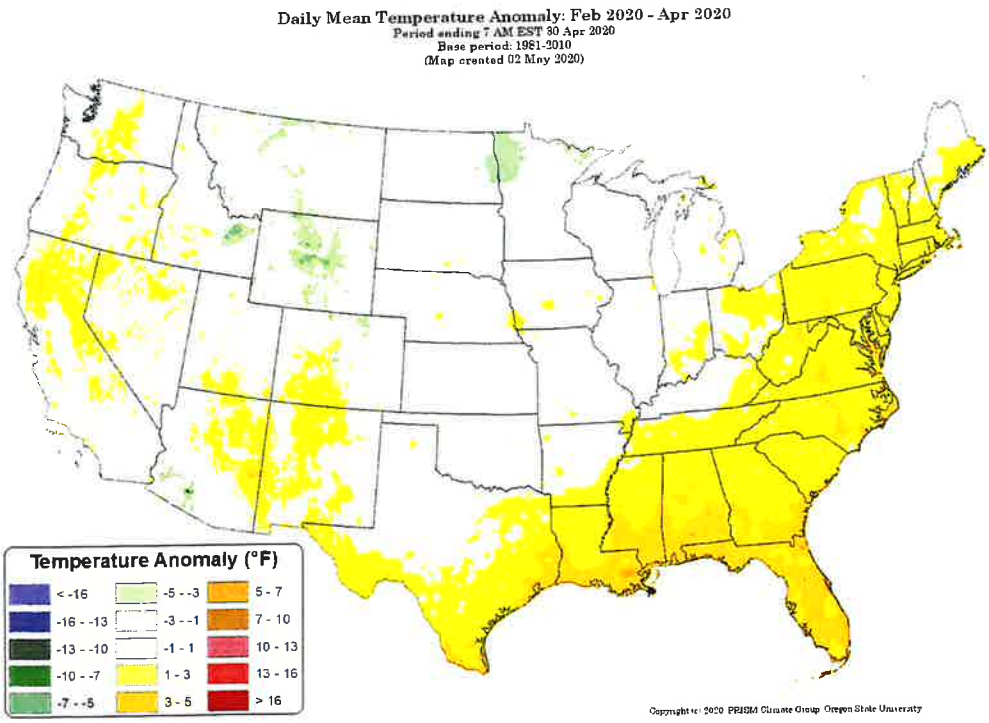
Source: PRISM

[Month-to-date national daily mean temperature anomaly map]



Last 3 Months, All Available Data Including SNOTEL and NWS Networks

Source: PRISM



[February through April 2020 daily mean temperature anomaly map]

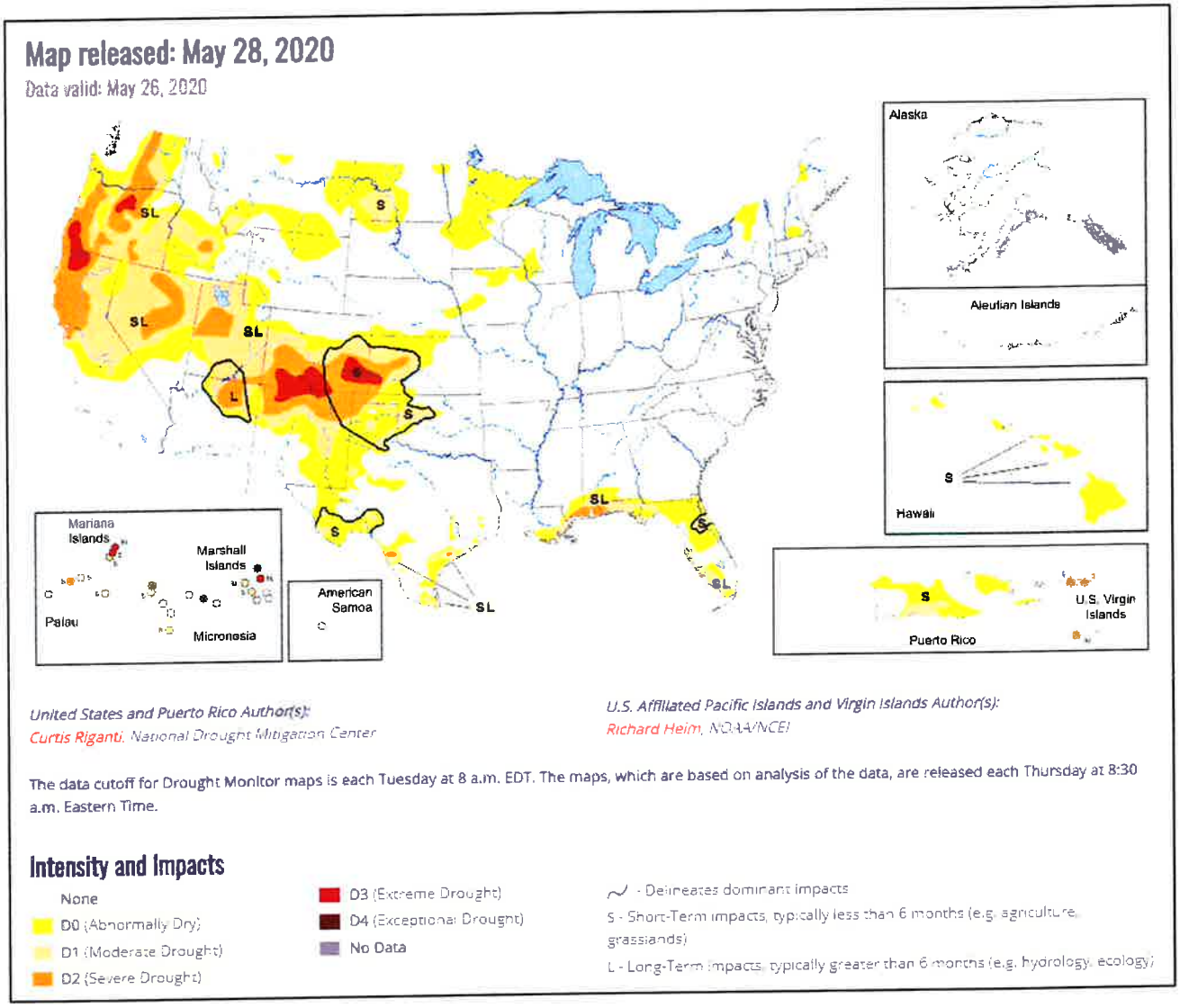
Drought

U.S. Drought Monitor

Source: National Drought Mitigation Center

U.S. Drought Portal

Source: NOAA



Current National Drought Summary, May 28, 2020

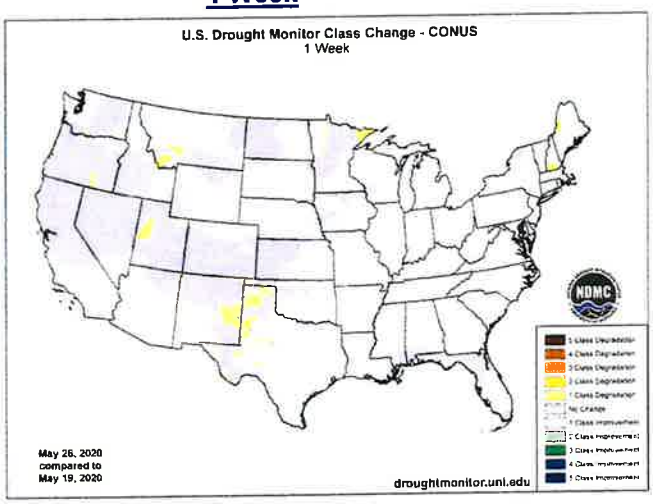
Source: National Drought Mitigation Center

"During the past week, widespread rain and thunderstorms fell across parts of the Great Plains, including a few instances of severe weather. Particularly large amounts of rain in central and eastern Nebraska, as well as in adjacent states, improved what had been a quickly drying scenario in many locations. Above-normal precipitation also fell in parts of the Northwest, which led to improvement in parts (though not all) of the ongoing drought areas there. Large rainfall amounts also occurred in south Florida and in parts of the central Florida Panhandle, leading to improvements in or removal of drought in these locations. Widespread rain in parts of Texas also led to drought improvement in the state, though some areas that missed out on the rain (particularly in the Panhandle) saw conditions worsen. Moderate and severe drought were also added to parts of Molokai and the Big Island in Hawaii. Moderate drought coverage lessened in southern Louisiana after precipitation fell there."

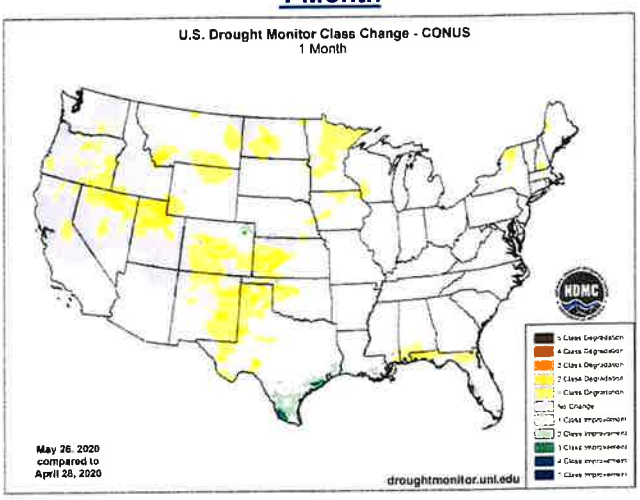
Changes in Drought Monitor Categories over Time

Source: National Drought Mitigation Center

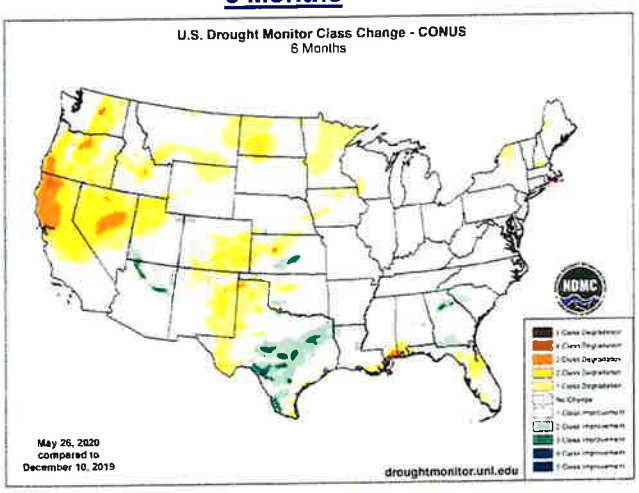
1 Week



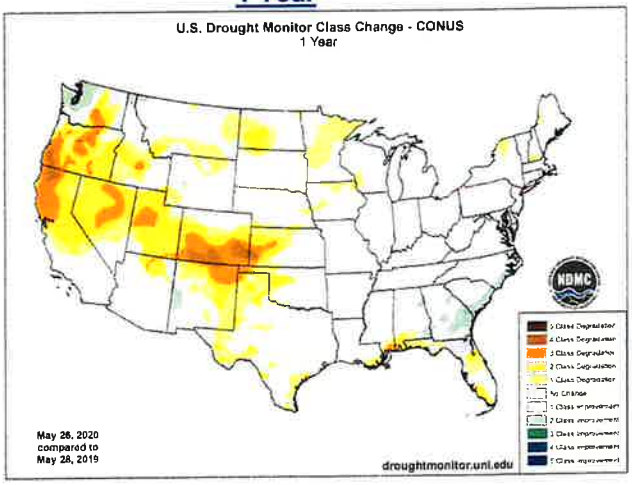
1 Month



6 Months



1 Year



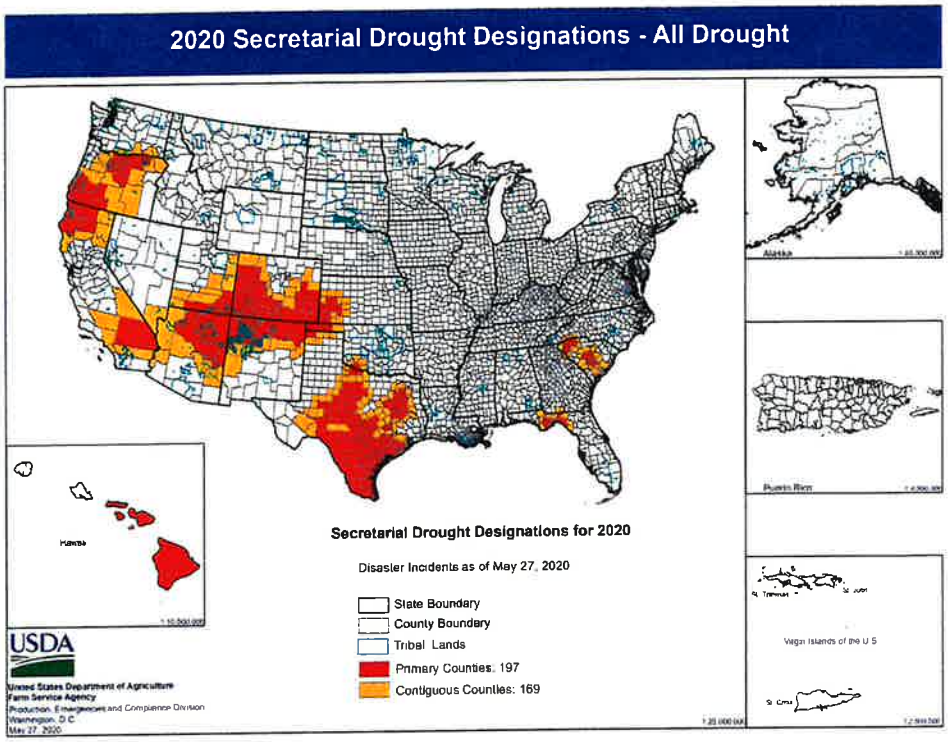
Changes in drought conditions over the last 12 months for the contiguous U.S.

Highlighted Drought Resources

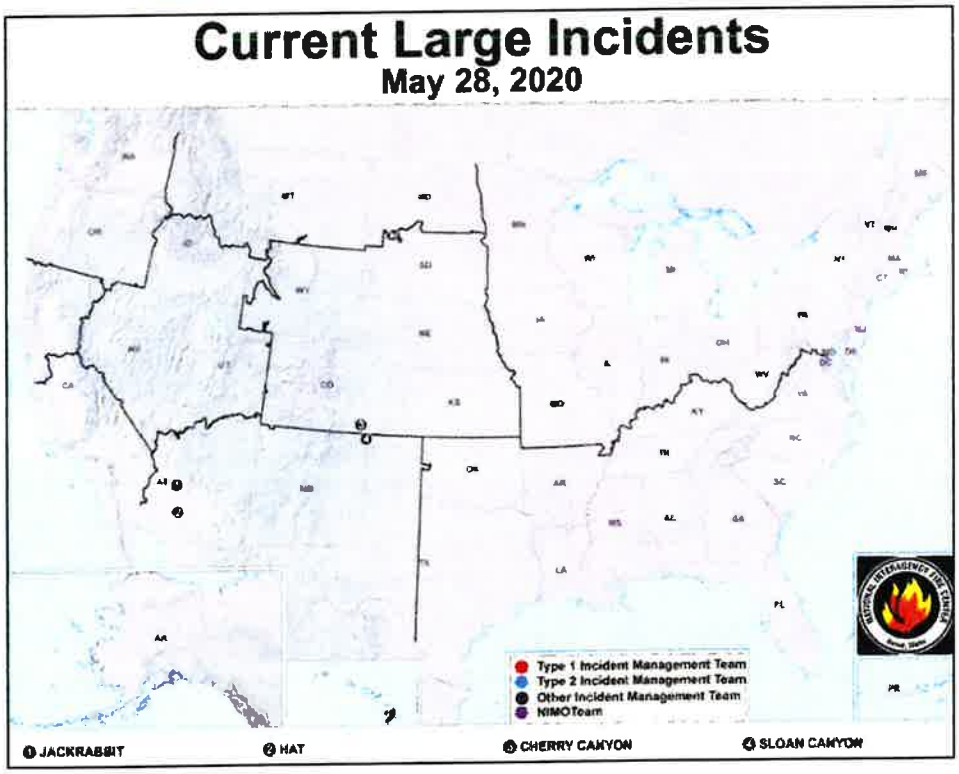
- Drought Impact Reporter
- Quarterly Regional Climate Impacts and Outlook
- U.S. Drought Portal Indicators and Monitoring
- U.S. Population in Drought, Weekly Comparison
- USDA Disaster and Drought Information

Secretarial Drought Designations

Source: USDA Farm Service Agency



Wildfires: USDA Forest Service Active Fire Mapping



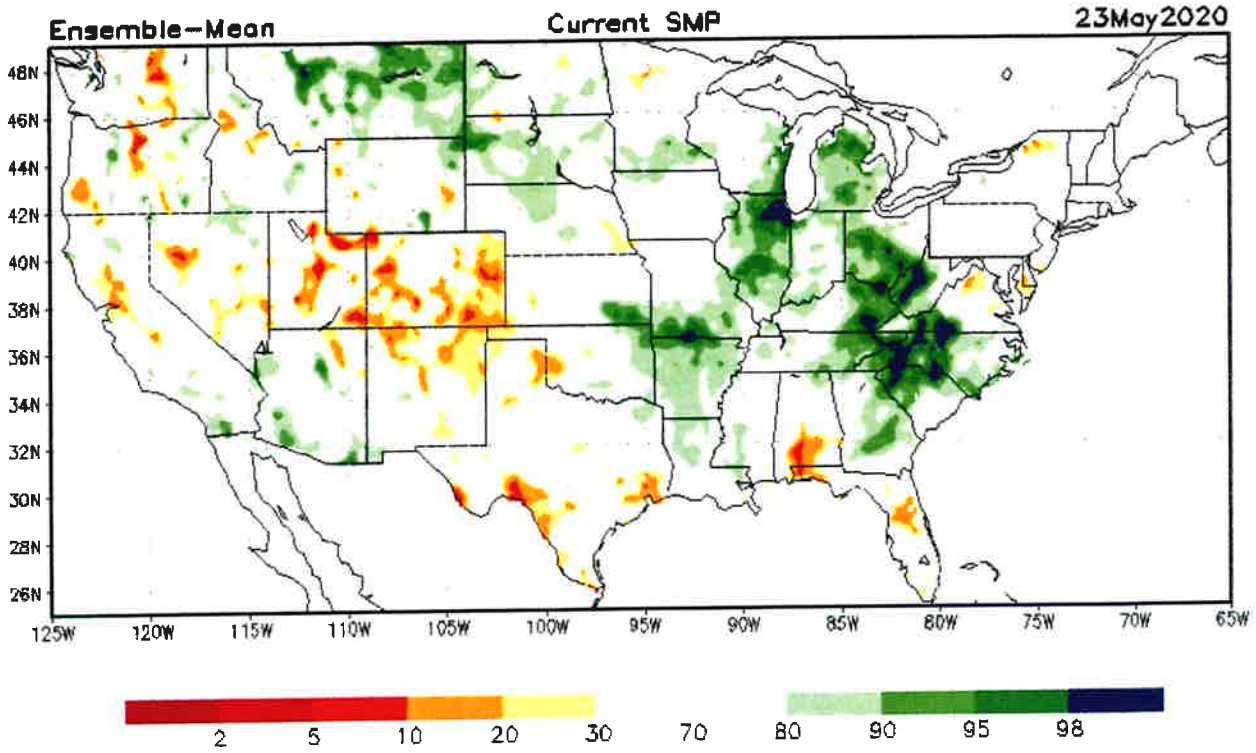
Highlighted Wildfire Resources

- National Interagency Fire Center
- InciWeb Incident Information System
- Significant Wildland Fire Potential Outlook

Other Climatic and Water Supply Indicators

Soil Moisture

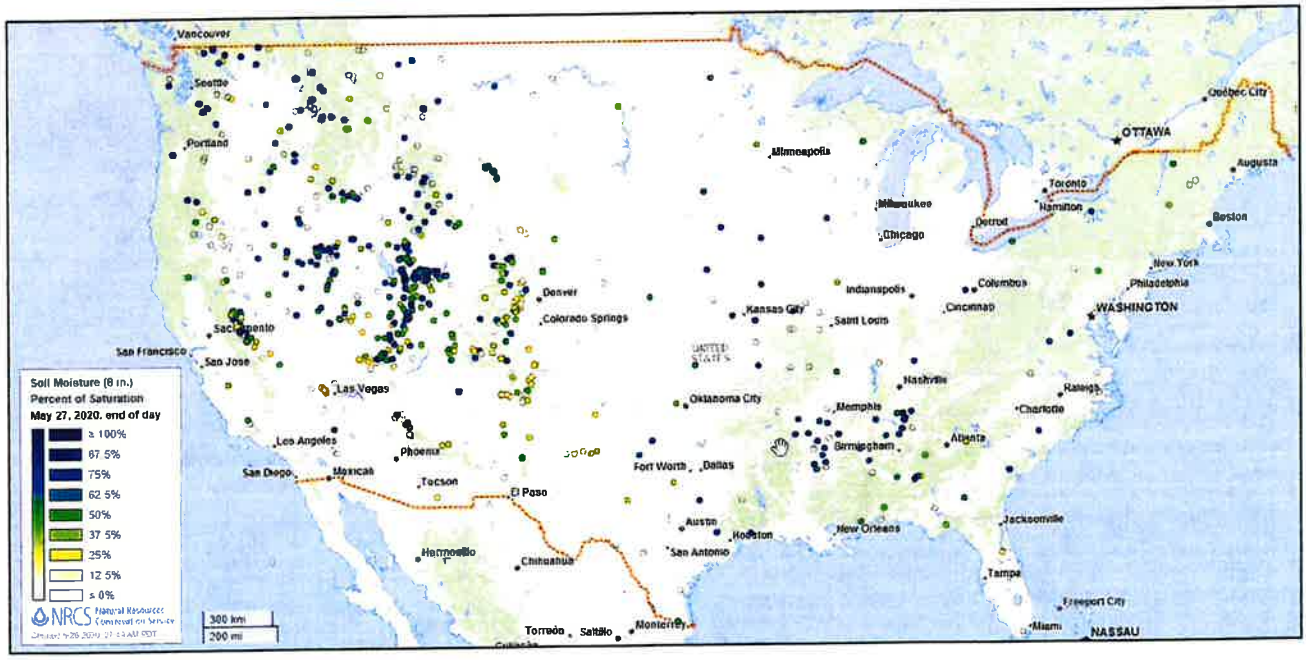
Source: NOAA National Centers for Environmental Prediction



Modeled soil moisture percentiles as of May 23, 2020

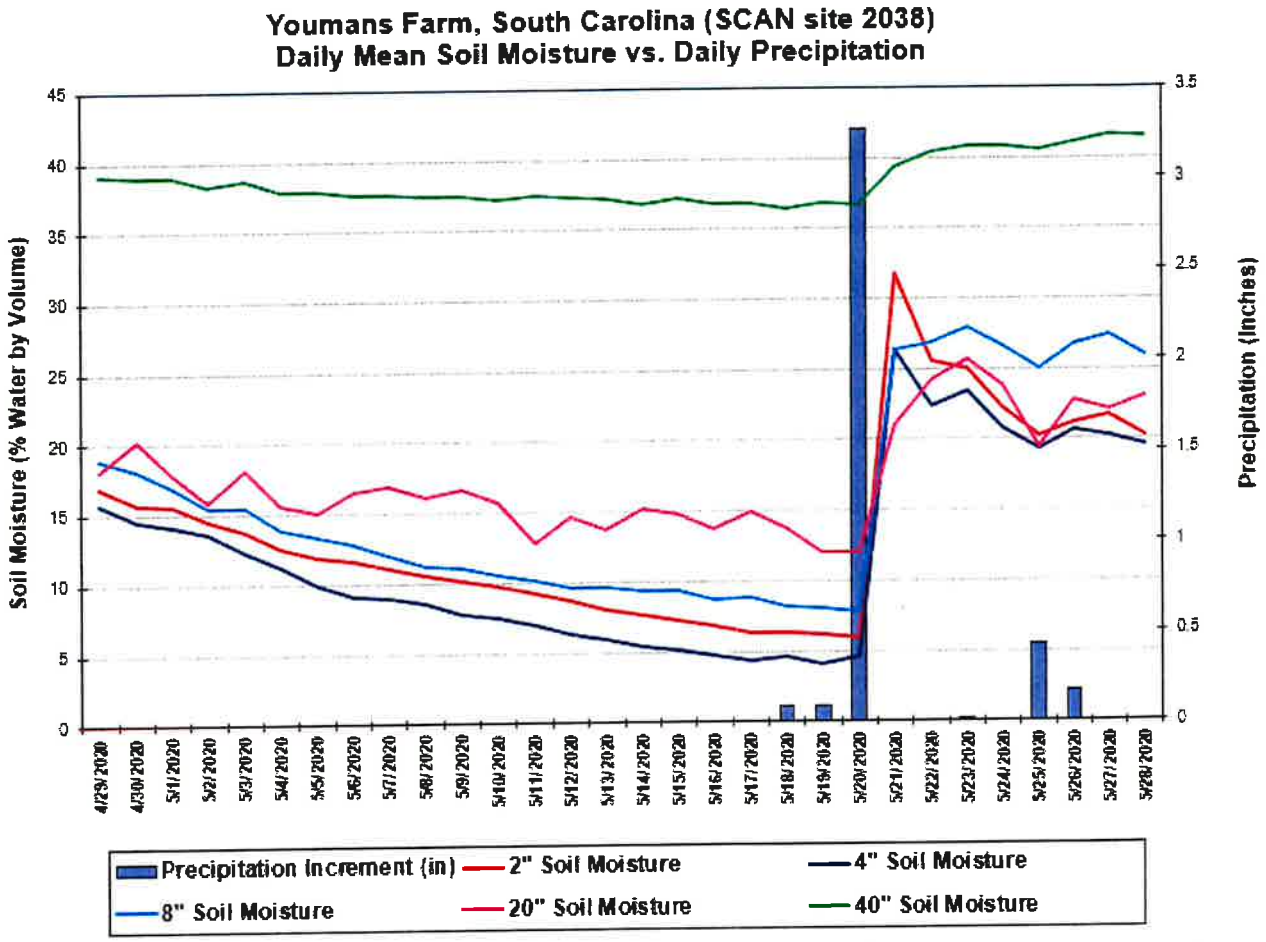
Soil Moisture Percent of Saturation

Source: NRCS SNOTEL and Soil Climate Analysis Network (SCAN)



Soil Moisture Data

Source: NRCS Soil Climate Analysis Network (SCAN)



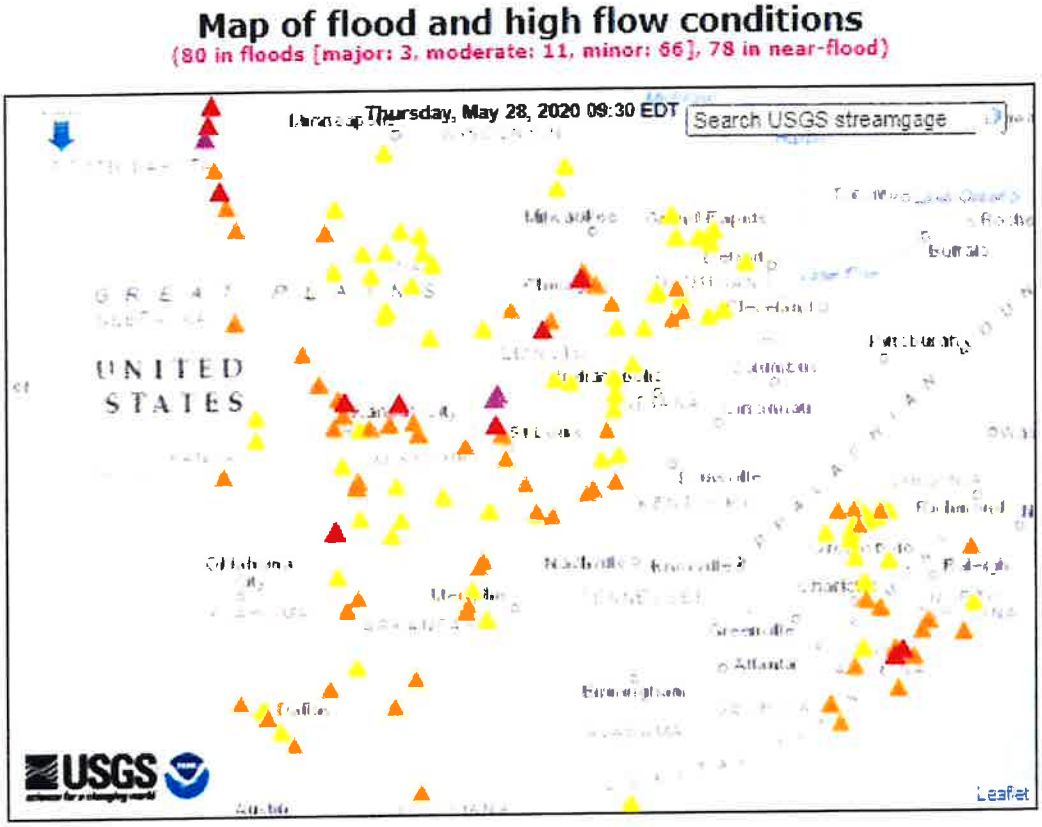
This chart shows the soil moisture and precipitation for the last 30 days at the Youmans Farm SCAN site in South Carolina. At the beginning of the period, soil moisture was gradually decreasing at all sensor levels. However, a large precipitation event of 3.27 inches on May 20 sharply increased soil moisture at the -2", -4", -8", and -20" sensors. The -40" sensor also showed an increase in soil moisture.

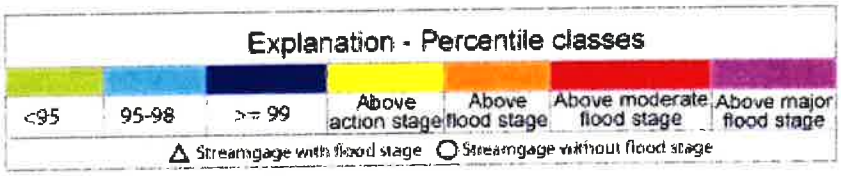
Soil Moisture Data Portals

- CRN Soil Moisture
- Texas A&M University North American Soil Moisture Database
- University of Washington Experimental Modeled Soil Moisture

Streamflow, Drought, Flood, and Runoff

Source: U.S. Geological Survey



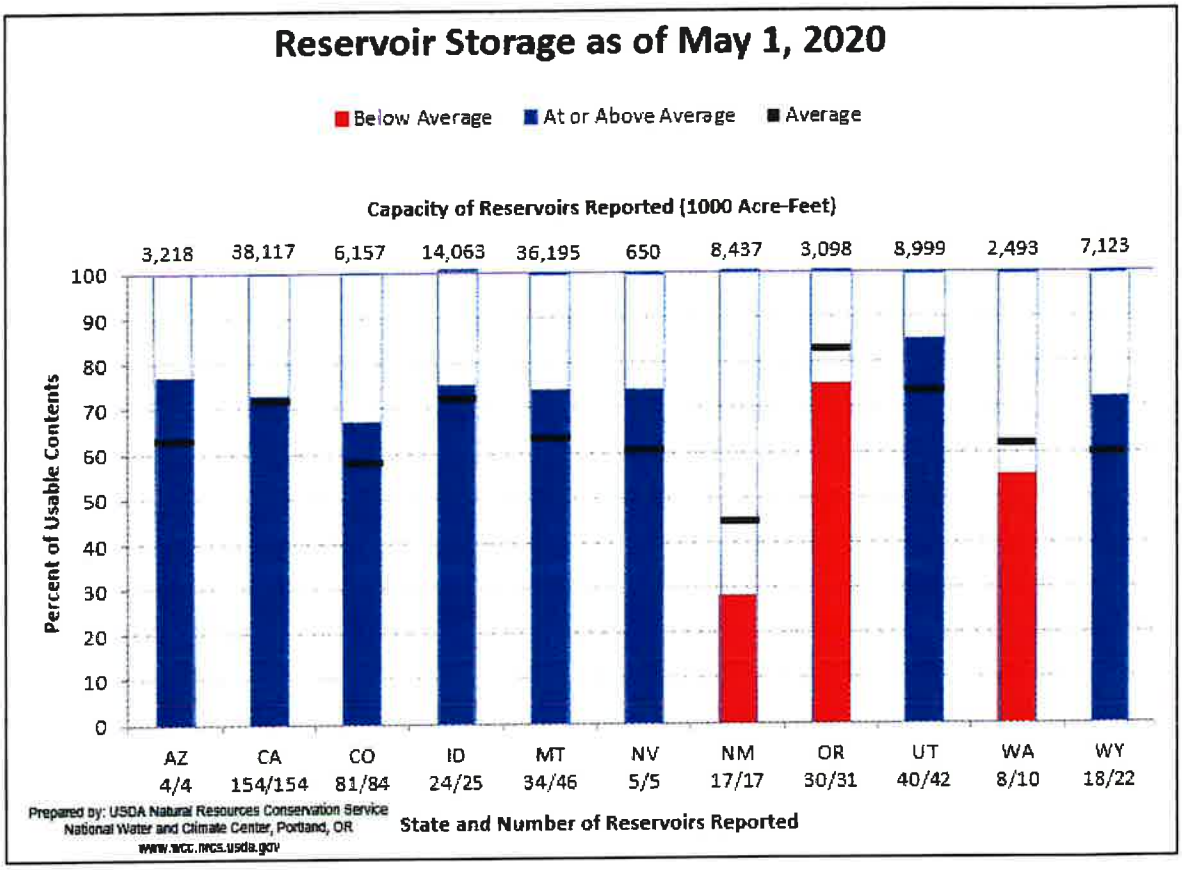


WaterWatch: Streamflow, drought, flood, and runoff conditions

Reservoir Storage

Western States Reservoir Storage

Source: NRCS National Water and Climate Center



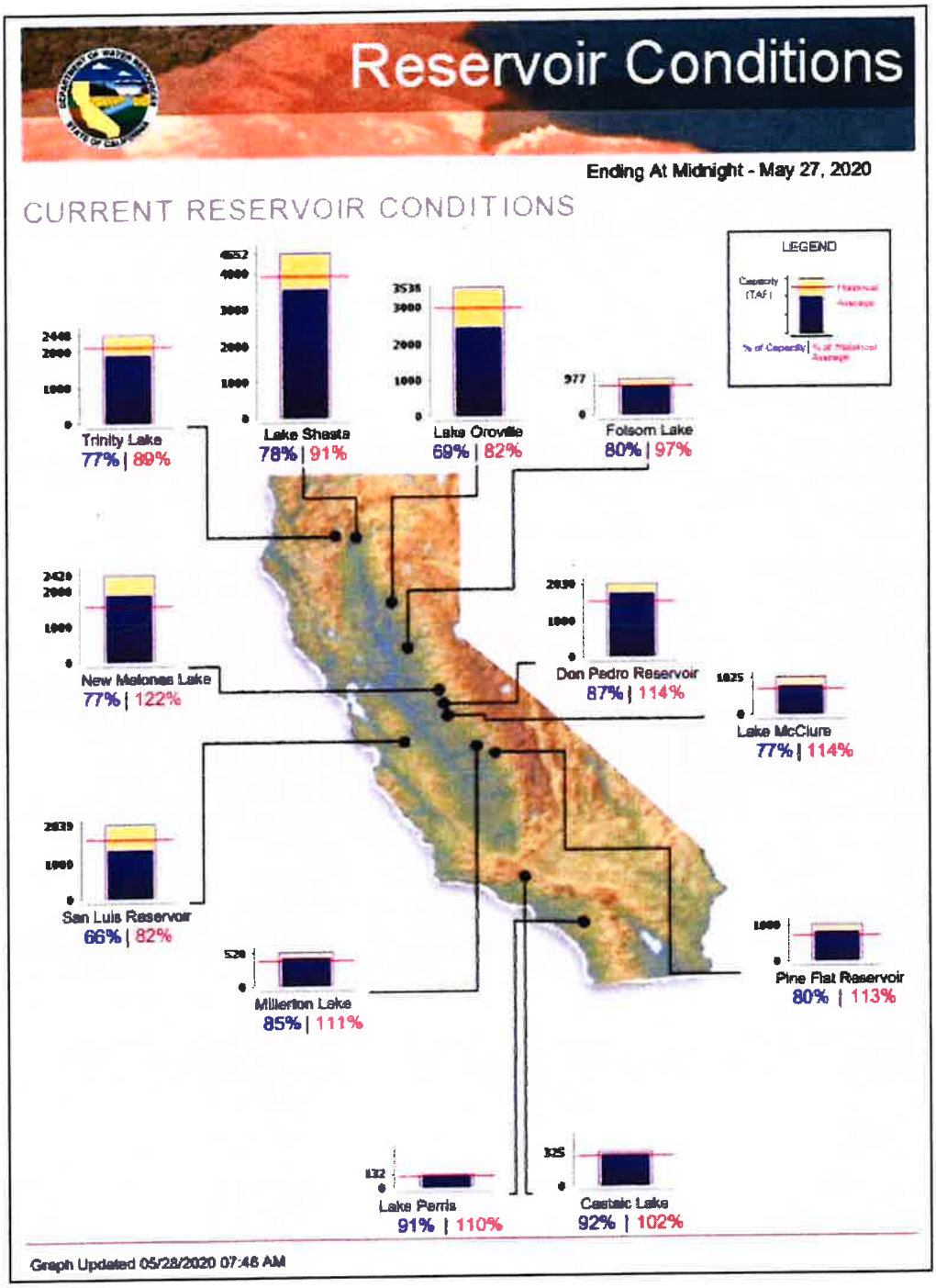
May 1, 2020 Reservoir Storage: Chart | Dataset

Hydromet Teacup Reservoir Depictions

Source: U.S. Bureau of Reclamation

- Upper Colorado
- Pacific Northwest/Snake/Columbia
- Sevier River Water, Utah
- Upper Missouri, Kansas, Oklahoma, Texas

Current California Reservoir Conditions
Source: California Department of Water Resources



Current California Reservoir Conditions

Short- and Long-Range Outlooks

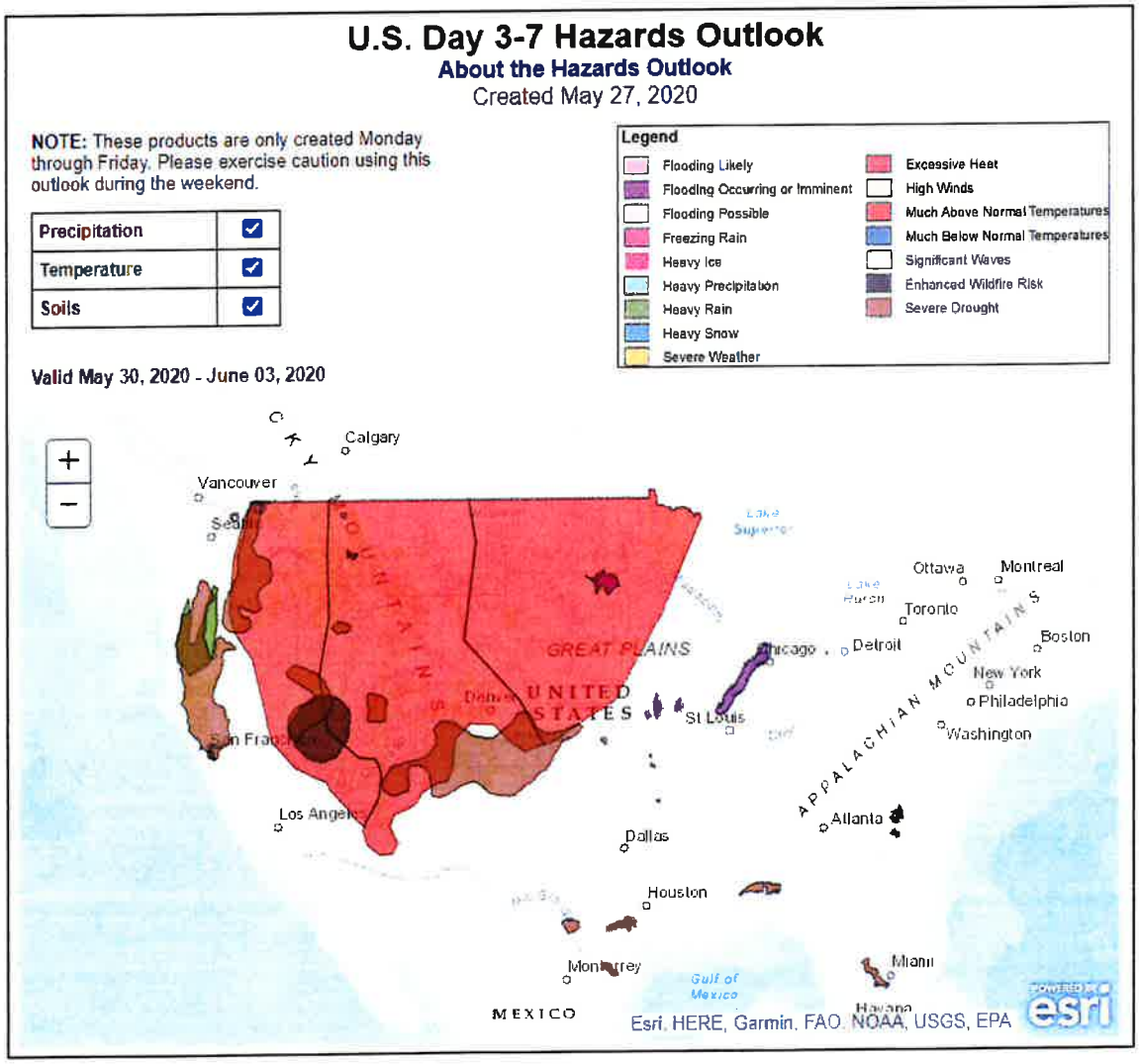
Agricultural Weather Highlights

Author: Brad Rippey, Agricultural Meteorologist, USDA/OCE/WAOB

National Outlook, Thursday, May 28, 2020: "A drier weather pattern will gradually overspread the eastern half of the country, with rain ending tonight or early Friday in the Mississippi Valley; by late Friday in the Ohio Valley; and during the weekend along the Atlantic Seaboard. Before precipitation ends, however, additional rainfall could total 1 to 3 inches in the southern Atlantic region and 1 to 2 inches in parts of the Midwest. Meanwhile, mostly dry weather will prevail from the Rockies westward, except for weekend showers in northern California and the Pacific Northwest. Elsewhere, hot weather in the Pacific Coast States will be replaced by cooler conditions during the weekend, while heat will build eastward across the nation's mid-section. The NWS 6- to 10-day outlook for June 2 – 6 calls for the likelihood of warmer-than-normal weather nationwide, except for near- or below-normal temperatures in the Pacific Northwest, the lower Rio Grande Valley, and along the Atlantic Seaboard. Meanwhile, drier-than-normal conditions in most areas from the central and southern Plains to the East Coast should contrast with above-normal rainfall in several regions, including southern sections of Florida and Texas, the Four Corners region, and the Far West."

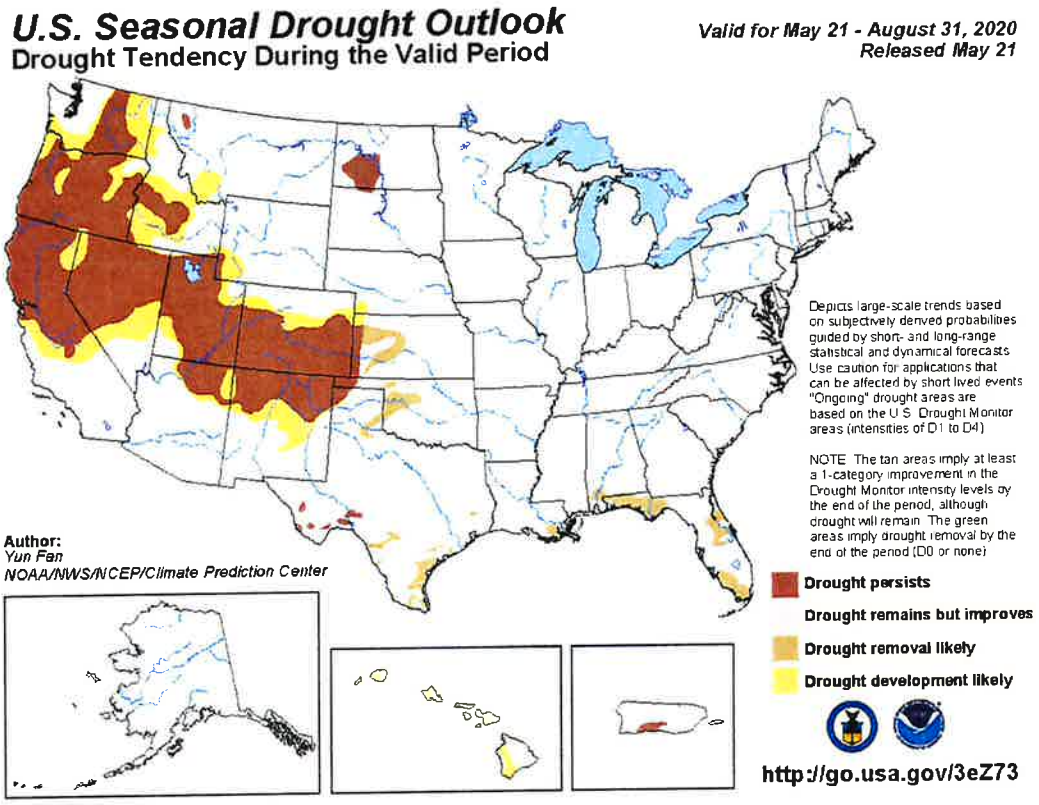
Weather Hazards Outlook: May 30 – June 3, 2020

Source: NOAA Weather Prediction Center



Seasonal Drought Outlook: May 21 – August 31, 2020

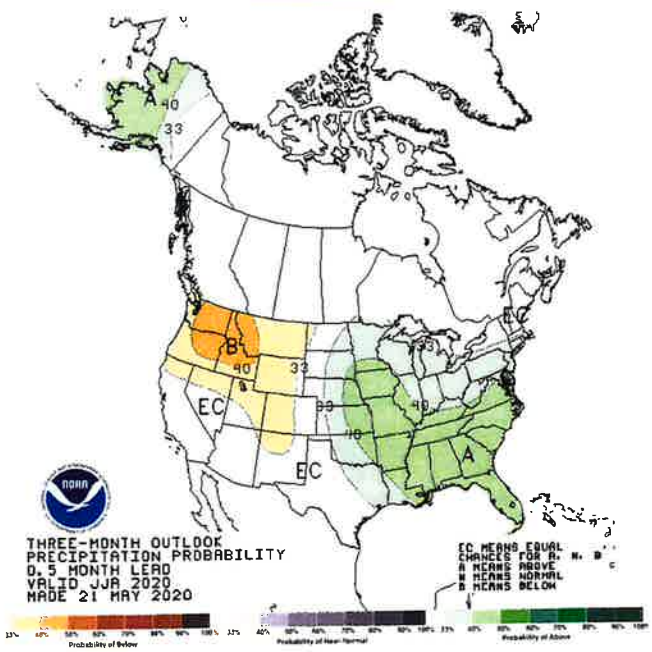
Source: National Weather Service



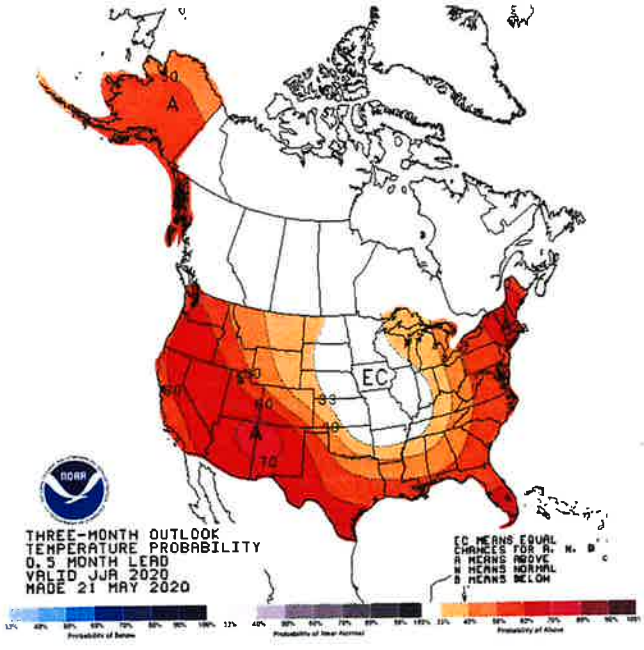
Climate Prediction Center 3-Month Outlook

Source: National Weather Service

Precipitation



Temperature



June-July-August (JJA) 2020 precipitation and temperature outlook summaries

More Information

The NRCS National Water and Climate Center publishes this weekly report. We welcome your feedback. If you have questions or comments, please contact us.

California Water News Daily

DON'T MISS Reclamation announces Shasta non-critical water year

Home > Drought > State Water Project Allocation Increases to 20 Percent

State Water Project Allocation Increases to 20 Percent

By California Water News Daily on May 27, 2020

The Department of Water Resources (DWR) announced late last week that the State Water Project will deliver 20 percent of requested supply in 2020. An initial allocation of 10 percent was announced in December and increased to 15 percent in January.

The increase in allocation comes due to an increase in precipitation in May and the latest allocation will likely be the last update for 2020.

"May storms gave us a boost following a very dry winter and allowed us to increase allocations for communities and agriculture in California," said DWR Director Karla Nemeth. "It's another example of our state's unpredictable precipitation that has been compounded by our changing climate. We must manage our water supply responsibly to not only deliver water now but ensure we have enough in reserves to protect us from future dry years."

The 2020 water year, which started October 1, 2019, has seen mostly below-average precipitation. Storms during the month of May delivered 181 percent of average in the Northern Sierra for this time of year.

According to DWR, this year's snowpack is the 11th driest on record since 1950.

A 20 percent allocation from the State Water Project equals about 843,696 acre-feet of water. The State Water Project provides water to more than 27 million Californians and 750,000 acres of farmland.

For information on current water conditions at the state's largest reservoirs and weather stations, visit the California Data Exchange Center (CDEC).

drought featured

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Cannabis Water Report moves forward; will be published in late 2020

Resource Innovation Institute, Berkeley Cannabis Research Center and New Frontier Data team up to study cannabis and hemp water practices; will publish results this year.

Jun 10th, 2020

Photo by Aphiwat chuangchoem from Pexels

PORTLAND, OR -- As cannabis and hemp regulation expands globally, its impact on water resources is relatively unknown. However, a partnership between Resource Innovation Institute (RII), the Berkeley Cannabis Research Center and New Frontier Data will change that.

The three organizations will publish The Cannabis Water Report in late 2020. The report will study water practices and usage rates across a range of cultivation methods and geographies and will offer strategic recommendations for governments and other stakeholders.

"Resource Innovation Institute has been exploring cannabis energy issues for years, and now we're expanding our scope to include the critical subject of water," said Derek Smith, executive director of RII, a non-profit organization that advances resource efficiency in the cannabis industry through the establishment of standards and best practices. "Like we did for The Cannabis Energy Report, we'll be assessing real data from actual cultivation operations to determine usage benchmarks for indoor,

Dr. Van Butsic, co-director of the UC Berkeley Cannabis Research Center, echoed the importance of the report. "Many policymakers are concerned with water withdrawal from salmon-bearing streams in California. This report will help us put cannabis water use in context," he said.

"As the cannabis industry expands globally, optimizing the resources used to grow cannabis will be vital to improving cost efficiency in an increasingly competitive industry. And in an increasingly drought-prone world, reducing cultivators' water use is not just good for businesses, it is key to the sustainable growth of the industry," said Giadha A. DeCarcer, CEO of New Frontier Data.

The Cannabis Water Report will be peer-reviewed by the newly formed Water Working Group of RII's multi-disciplinary Technical Advisory Council:

Andrew Alfred, LivWell Enlightened Health
Barb Anderson, Washington Dept. of Ecology
Chris Dillis, Berkeley Cannabis Research Center
Rob Eddy, Blue Arrow Botanicals LLC
Matthew Gaboury, House of Cultivar
Hollie Hall, PhD, Compliant Farms Certified
Kyle Lisabeth, Silver Bullet Water Treatment
Richard Miller, Argus Controls
Bob McDonald, Carpinteria Valley Water District
Chuck Nora, Desert Aire
Austa Parker, Denver Water
Sara Schoenhals, HydroLogic
Elizabeth Shilling, Ceres Greenhouses
Andy Souza, TEP Engineering
Madison Walker, Grodan
Cale Winters, Rhythm CSS
Al Zylstra, Dramm Corporation

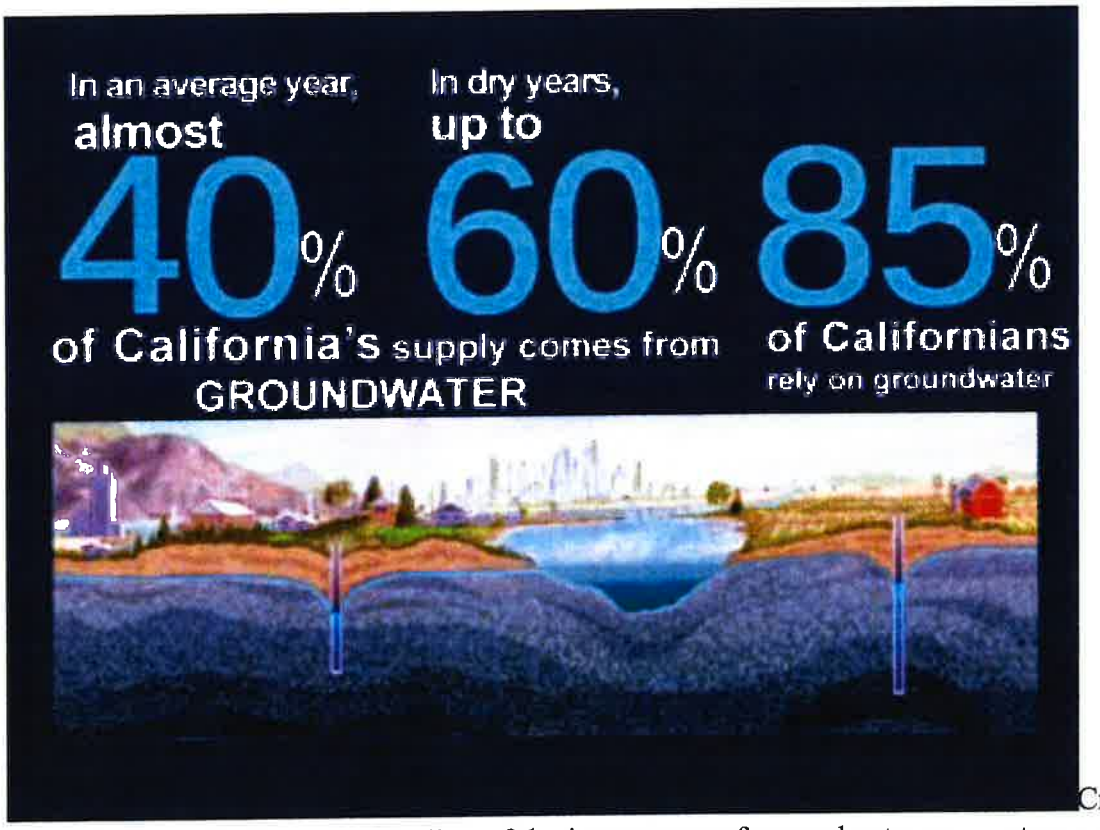
SOURCE: *Resource Innovation Institute*

STATE WATER BOARD: Update on SGMA implementation

June 10, 2020

Presentation discusses the GSP review process and highlights tools, resources, and assistance for GSAs

Since the legislature passed the Sustainable Groundwater Management Act was passed in 2014, the Department of Water Resources and the State Water Board have been working to support the local agencies the development of their groundwater sustainability plans. At the State Water Board's meeting on June 2nd, Natalie Stork, unit chief for the Groundwater Management Program at the State Water Board, and Craig Altare, chief of the Groundwater Sustainability Plan Review section at the Department of Water Resources, updated the board members on how implementation is going so far.

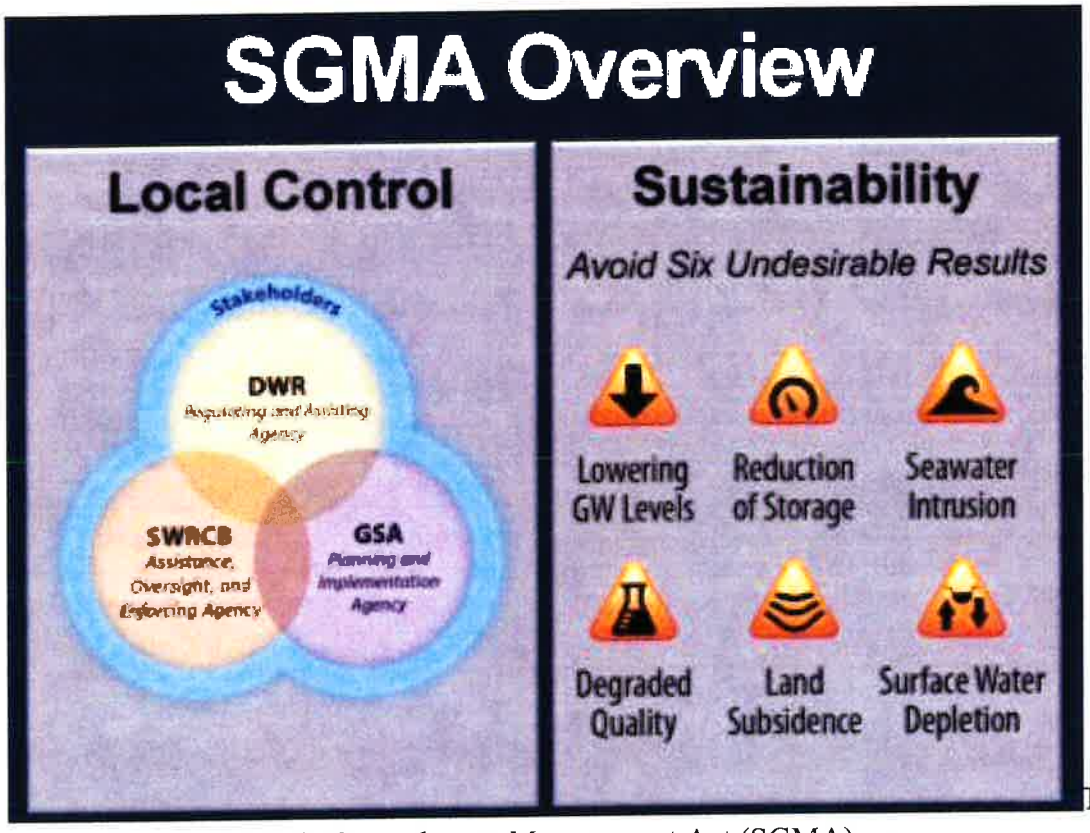


Craig Altare began the presentation by reminding of the importance of groundwater as a water resource for California.

In an average year, almost 40% of California's water supply is supplied by groundwater; in a dry year, that number increases up to 60%. And 85% of Californians rely on some way on groundwater, so it's an important component of the state's water resources.

Recognizing the need for this critical resource to be managed sustainably in California, in 2014, the Sustainable Groundwater Management Act (SGMA) was passed. The legislation became effective in 2015.

THE BASICS OF THE SUSTAINABLE GROUNDWATER MANAGEMENT ACT



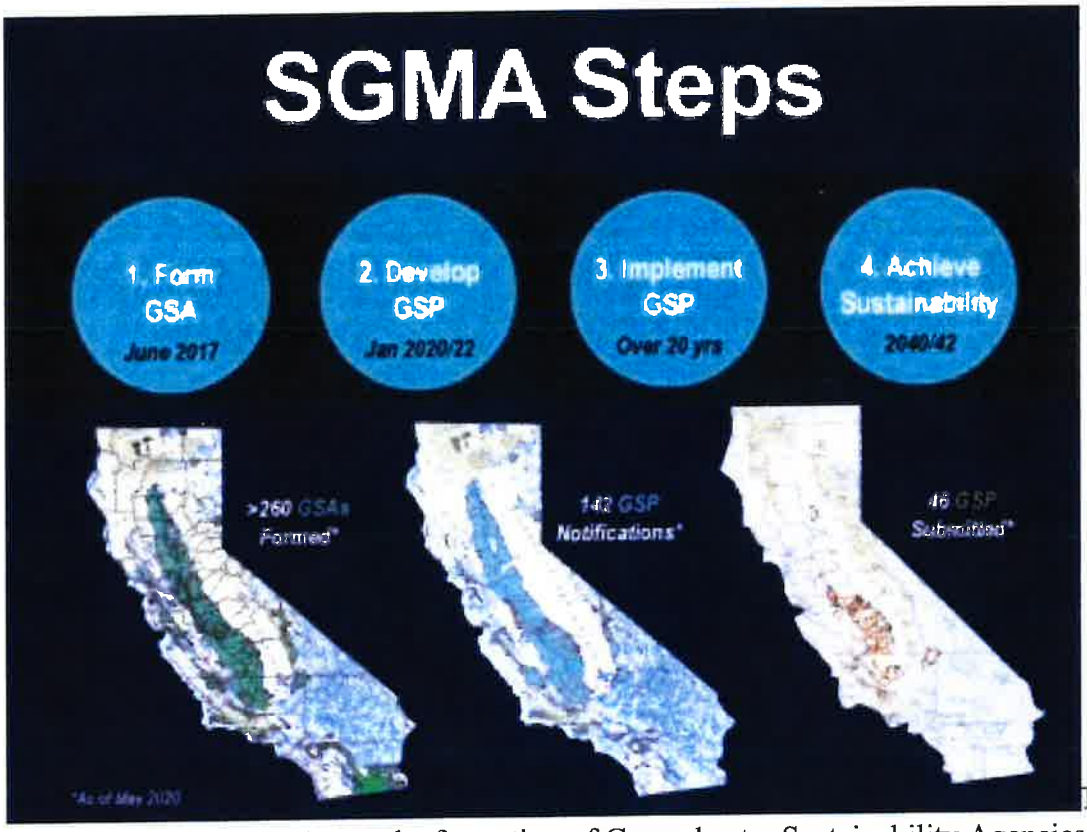
The two main tenets of the Sustainable Groundwater Management Act (SGMA) are:

Local control: The legislation acknowledges that groundwater is best managed locally and so it requires local agencies, called Groundwater Sustainability Agencies or GSAs, to develop and implement the plans to achieve sustainability in their basin. To support that local management, the legislation identifies roles for various state agencies to support sustainable groundwater management. DWR is identified as the state agency that develops regulations for groundwater sustainability plans and then reviews those plans once submitted. The State Water Resources Control Board has the role of oversight and enforcement. Both the Department and the Water Board and other agencies also perform an assistance role by providing the various data sets,

tools, and other resources to help support the GSAs in the implementation of local control of groundwater resources.

Sustainability: The legislation defines sustainable groundwater management as managing the basin so that the six undesirable results are avoided or eliminated. Those six undesirable results are the significant and unreasonable occurrence of the following things: lowering groundwater levels, reduction of groundwater storage, seawater intrusion, degraded groundwater quality, land subsidence, and depletions of interconnected surface water. GSPs need to be developed so that when implemented, the six undesirable results can be avoided.

Steps to implementing SGMA



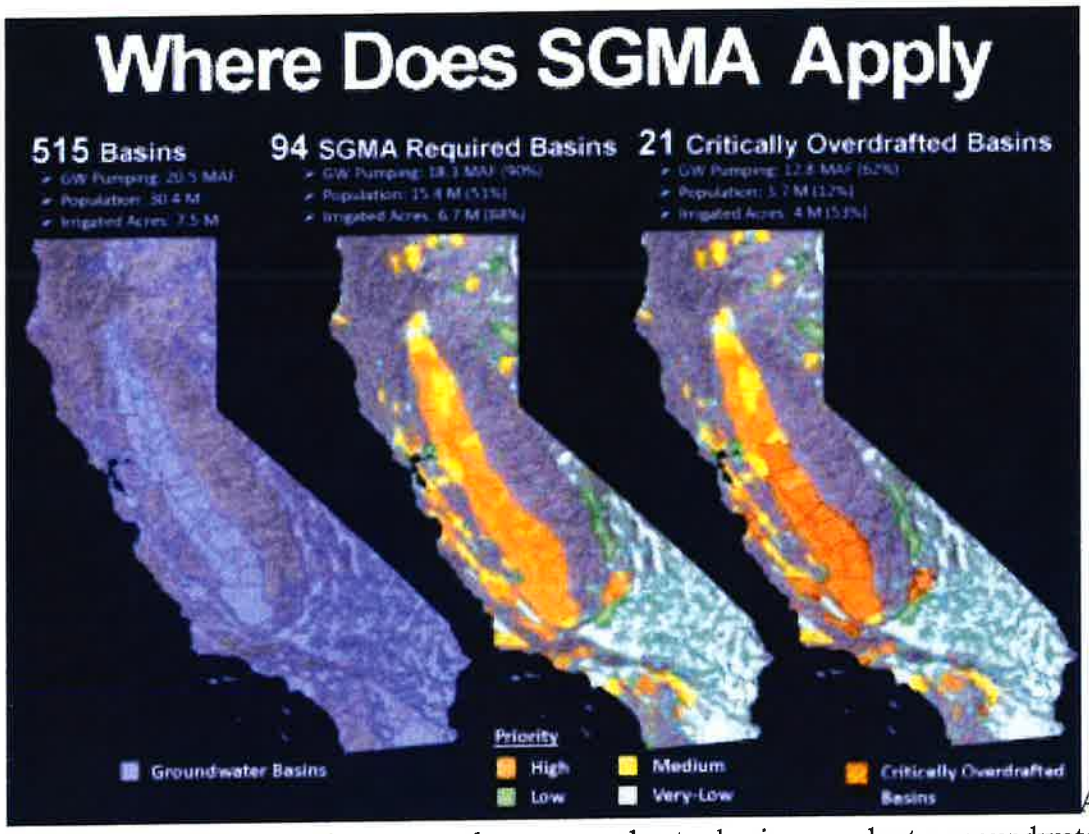
The first step to implementing SGMA was the formation of Groundwater Sustainability Agencies (GSAs). There was a statutory deadline of June, 2017 for groundwater basins subject to SGMA to be covered by a GSA or GSAs. That was very much a success story with more than 99% of the groundwater basins subject to SGMA being covered by a GSA as of the deadline.

The second step for the GSAs is to develop, adopt, and then implement a Groundwater Sustainability Plan (GSP). Those GSPs were either due in 2020 or will be due in 2022.

The third step is once the GSP is adopted, it is implemented immediately with GSAs having 20 years to implement those plans.

The fourth step is to achieve sustainability by 2040 or 2042.

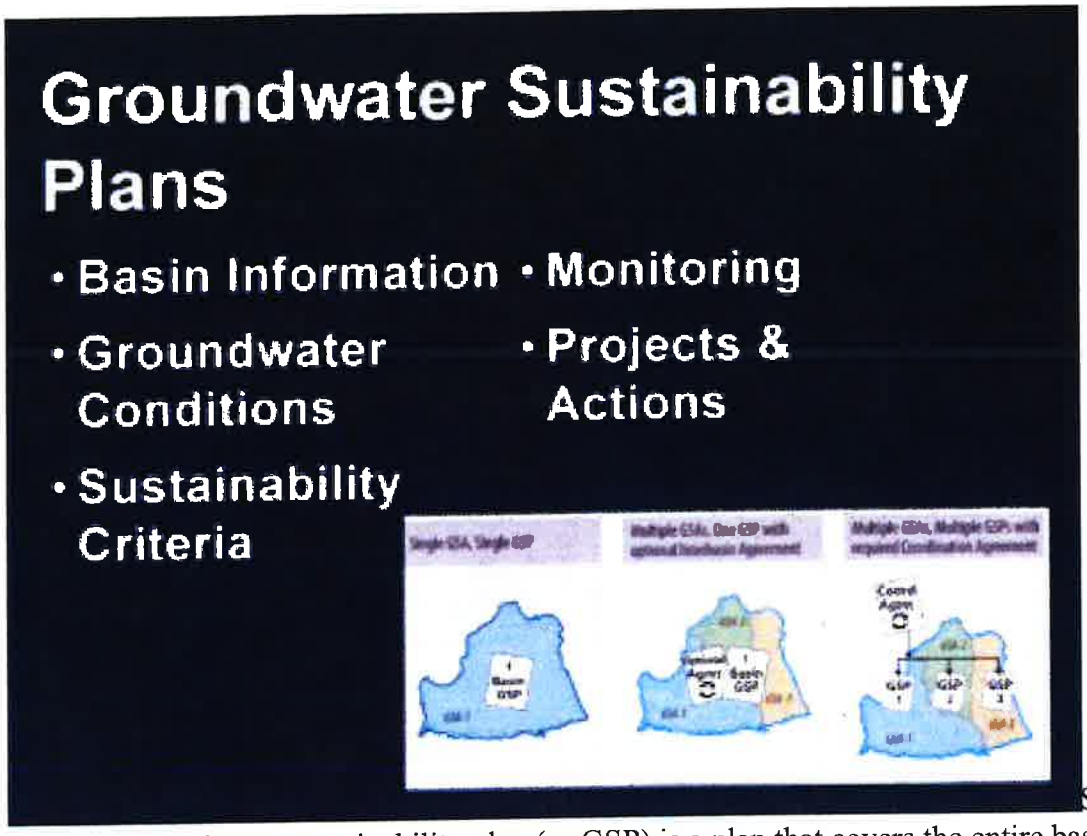
Which basins are subject to SGMA



Although SGMA applies to the entire state and any groundwater basin can adopt a groundwater sustainability plan, not all of the 515 of the state's identified groundwater basins are required to adopt a GSP. The 94 groundwater basins that have been identified through the Department's prioritization process as being either high or medium priority are shown in orange and yellow on the map in the middle pane; those basins are required to develop groundwater sustainability plans and to implement them. The high and medium priority basins account for about 90% of both the state's groundwater pumping and irrigated agriculture.

There is a subset of 21 basins that have been identified as critically overdrafted which are shown in the hatch pattern on the map on the right. Those basins have the most aggressive planning deadlines with GSPs due January of this year. Mr. Altare noted that all critically overdrafted basins did adopt GSPs and submit them by the statutory deadline.

GROUNDWATER SUSTAINABILITY PLANS (GSPs)



Simply stated, a groundwater sustainability plan (or GSP) is a plan that covers the entire basin that's intended to demonstrate how the locally defined sustainability goal will be achieved, he said.

There are three different options for how GSAs can prepare GSPs. The most simplified management option is a single GSA that covers the entire basin and prepares a single GSP. If there are multiple GSAs in the basin, those multiple GSAs can work together to prepare one GSP for the whole basin; they might enter into optional agreements but it is not required. The most complicated scenario is for multiple GSAs to prepare multiple GSPs, in which case a coordination agreement is required.

The basic components of a groundwater sustainability plan (GSP) are:

Basin information: This includes what agencies are present in the basin, what beneficial uses and users of groundwater are present in the basin, how those users and uses have they been considered during the plan development and how will they be communicated with going forward.

Groundwater conditions: The GSP is required to describe the groundwater conditions in the basin. The plan must include a hydrogeologic conceptual model which shows the distribution of aquifers, aquitards, how groundwater flows, and how recharge works in the basin. The plan must also include both a historical water budget and a future water budget that accounts for the projects and actions they plan to implement as well as the anticipated effects of climate change.

Sustainability criteria: Plans are required to describe the sustainability goals and the quantitative metrics that will be set by the local agencies that are yardsticks for what sustainability is in their basin.

Monitoring data: A lot of monitoring data is required to demonstrate sustainability so the GSPs are required to describe the monitoring networks in the basin.

Projects and actions: GSPs are required to describe the projects and actions, which define the activities that will be undertaken by the GSA to achieve or maintain sustainability in their basin.

The GSP regulations further describe the requirements for GSPs, how plans are submitted to the Department, how the plans will be reviewed, reporting requirements, and other things.

STATE WATER BOARD INTERVENTION

The state intervention process starts when groundwater sustainability plans aren't submitted by the deadline or are found to be inadequate.

Natalie Stork, unit chief for the Groundwater Management Program at the State Water Board, said there are three important things to note about intervention:

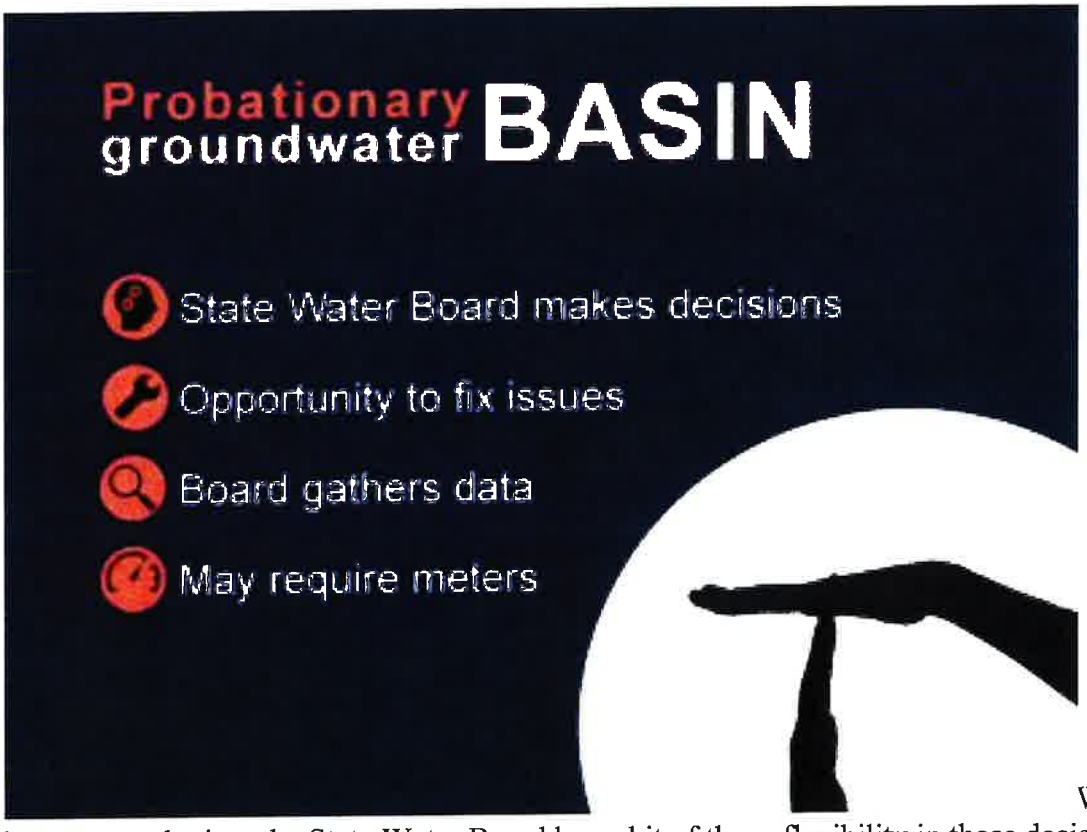
The board only steps in when local efforts fail. "*That means the board can't step in whenever it wants to*," she said.

The state intervention process is designed to temporarily protect the basin until locals come up to speed, so it's meant to be temporary fix, not a permanent fix – or a permanent fix but not a permanent intervention, she said.

The state intervention process is triggered by SGMA deadlines. The first deadline was in 2017 when all of the medium and high priority basins had to be covered by groundwater sustainability agencies; there was 99% compliance. The next deadline was January 31, 2020, which was when all of the critically overdrafted basins had to have plans adopted and submitted to the Department of Water Resources; all critically overdrafted basins did submit plans as required. The next deadline is in 2022 when the rest of the medium and high priority basins need to have their plans adopted and submitted to the Department of Water Resources.

The intervention process

When state intervention is triggered, the State Water Board can hold a hearing and decide whether or not to take the basin into probation. "*It's an open and transparent process, and the board has some flexibility in its decisions it can make at that hearing*," Ms. Stork said.



When a basin is put on probation, the State Water Board has a bit of those flexibility in those decisions, especially around how much of the basin is subject to a probationary determination or who has to report the groundwater extraction reporting.

During this time, the Board will be gathering the data it needs in case it needs to develop an interim plan for the basin, which can include requiring meters on groundwater wells to the data it needs to develop the interim plan, if needed.

There's time built into the process for the GSA to fix the issues that caused the basin to be put on probation; however, if those issues aren't fixed after a certain period of time, the Board can start developing its interim plan. The interim plan would be adopted via another Board hearing in another open and transparent process.

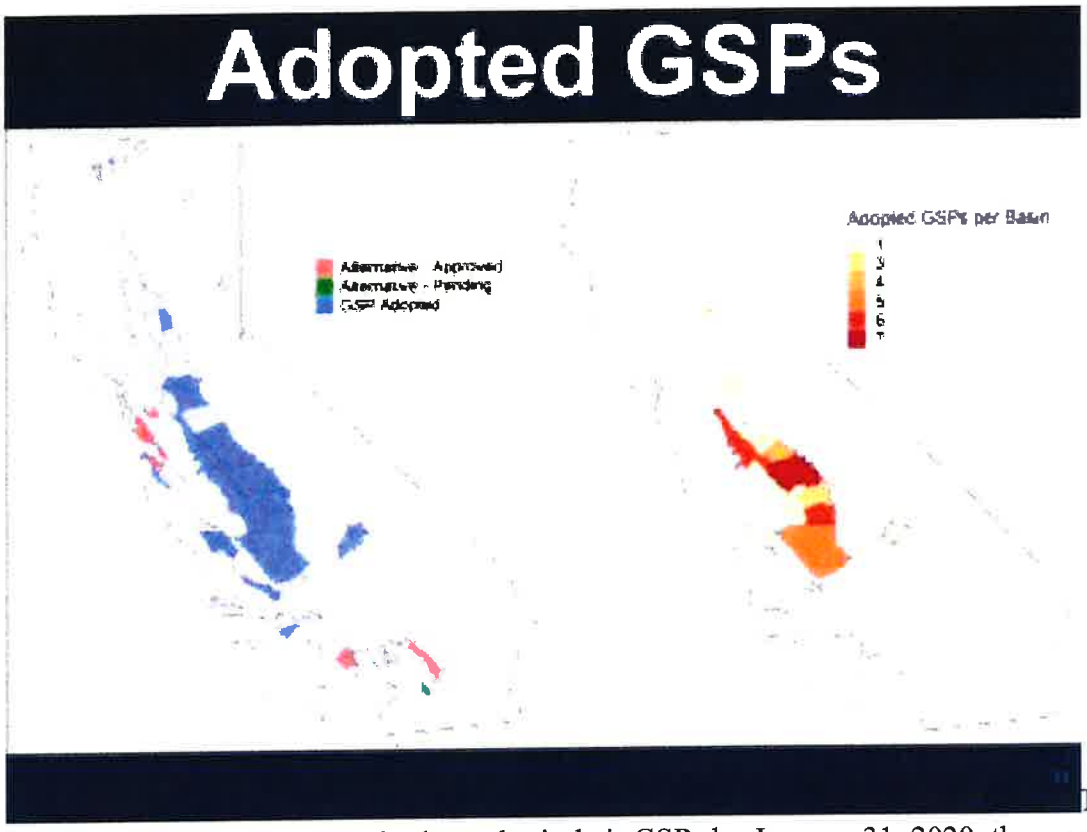
The interim plan

The four main components of an interim plan are:

- Corrective actions to get the basin back on track;
- Monitoring to measure progress;
- A schedule for those actions; and
- Enforcement to make sure the plan is followed.

"*The important thing is that an interim plan isn't meant to replace a GSP, it's meant to be temporary,*" said Ms. Stork. "*So the statute has several different options that the board can consider when it comes to corrective actions, but since it's meant to be a temporary plan, demand management is the most likely action that we'll pursue for corrective actions.*"

CRITICALLY OVERDRAFTED BASINS SUBMIT THEIR PLANS



The critically overdrafted basins were required to submit their GSPs by January 31, 2020; the map on the left hand side of the slide shows the basins that provided groundwater sustainability plans by that date. There were 18 basins critically overdrafted basins required to submit plans; a total of 43 individual plans were submitted. There were three additional basins that had the 2022 deadline, but went ahead and submitted their plans early.

In total, 46 GSPs were submitted to the Department of Water Resources. Nine basins had approved alternatives, and there is one basin (Borrego Springs) that has a pending alternative that was provided in lieu of a GSP by the January 31, 2020 deadline.

Six basins in total that prepared multiple GSPs and the number of GSP per basin ranges from 3 to 7 for those basins. Mr. Altare noted that those are the most complicated in terms of coordination as the Department does its review.

THE GSP REVIEW PROCESS

When the GSPs are submitted to the Department, the Department opens a public comment. Because of the timing of the submissions, there were essentially two public comment periods. When the first public comment period closed, the Department had received nearly 300 comments. The Department will consider all those public comments that are submitted on a basin by basin or GSP by GSP basis during the review of that basin's plan.

The Department has teams of scientists, engineers, and geologists to review the plans. They have divided the submitted plans between them and they are beginning their review. The Department has two years from the submission of the plans to complete their review.

There are three possible outcomes for the review:

The plan could be approved: If the plan is substantially compliant with the GSP regulations and it complies with the directives of SGMA, then that plan will be improved. For basins with approved plans, they continue to implement the plans. There are continuing obligations in that the GSA must report their progress towards achieving the goals they set forth in their plans to achieve sustainability within 20 years.

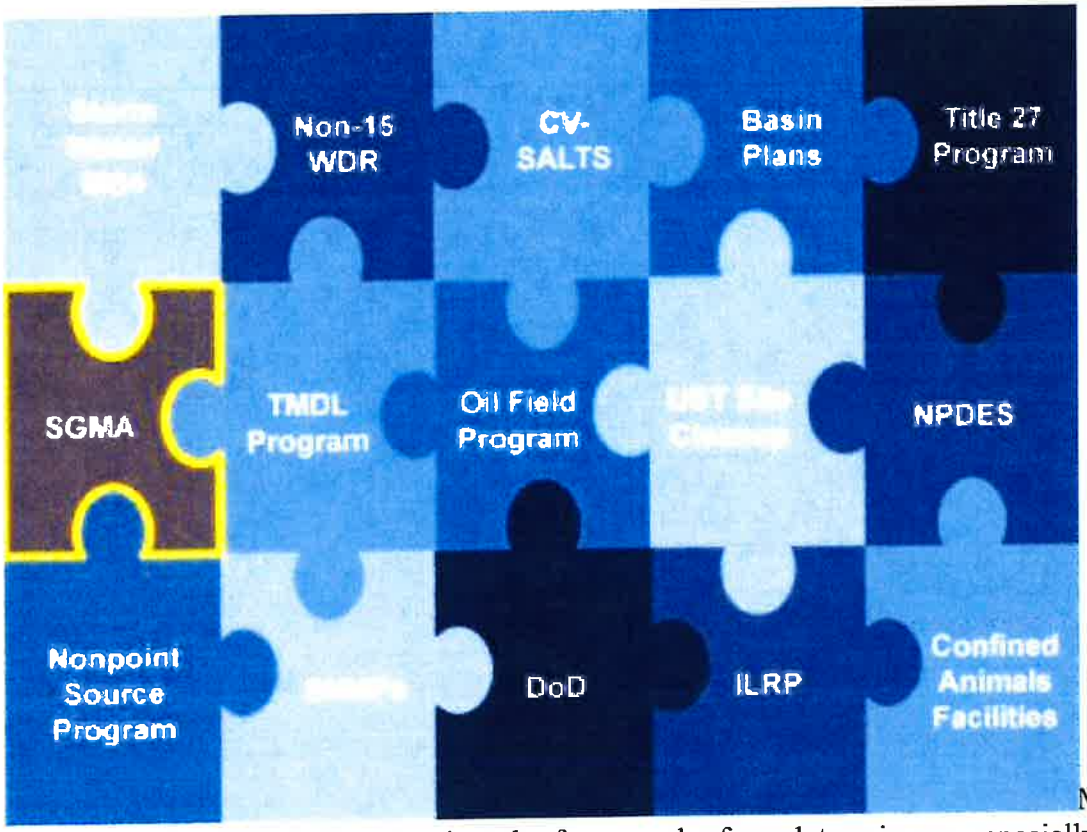
The plan could be deemed incomplete: An incomplete plan is one that has some deficiencies or discrepancies that preclude approval today but the Department believes can be fixed within a period of six months or 180 days. The GSA will have an opportunity to make those corrections and resubmit the plan to the Department.

The plan could be determined to be inadequate: An inadequate plan has significant deficiencies that preclude approval. The finding that a plan is inadequate is a trigger for State Board intervention. "*I want to highlight though that a finding that the plan is inadequate would not come until a required period of consultation between the State Board and the Department of Water Resources, so both the agencies would be very aware and coordinated for the next steps in the event the plan is determined to be inadequate*," said Mr. Altare.

SGMA COORDINATION BETWEEN THE DEPARTMENT OF WATER RESOURCES AND STATE WATER BOARD

The State Water Board is working to support the Department of Water Resources' GSP review. While the statute states that the Department has the ultimate say in whether plans are adequate or inadequate, the State Water Board and the regional boards have extensive regulatory experience in certain areas, especially around drinking water, water rights, and water quality, said Ms. Stork.

"*The state and regional boards are currently implementing several programs that have some crossovers with SGMA, especially in regards to stakeholders or data that's collected that could be used for multiple programs, and as such, we want to make sure that we're working to support the Department's review appropriately*," she said. "*So there's coordination going on with the groundwater management program between us and several other parts of the state and regional boards to make sure we are supporting the Department's review.*"



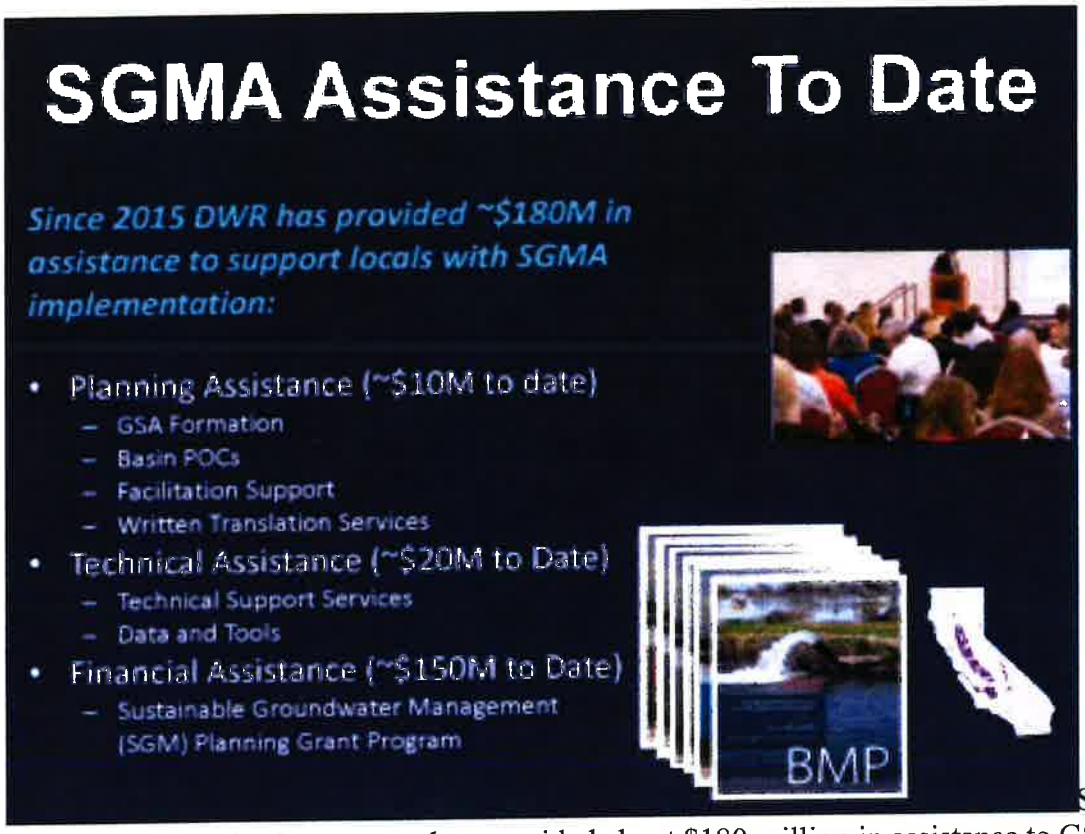
Ms. Stork pointed out that SGMA fits into a broader framework of regulatory issues, especially around water quality, drinking water, and other issues.

"*SGMA, when it was passed in 2014, wasn't designed to fix all of these issues in itself*," she said. "*Some people hoped that it could, but SGMA wasn't designed to address legacy issues, and in fact the statute doesn't require GSAs to address issues that occurred prior to 2015. It provides GSAs with the tools to address those issues if they choose to, but there isn't a requirement.*"

She pointed out that there are several different water quality programs that are currently being implemented by the state and regional water boards, and SGMA is not intended to take over all of these programs.

"*However, SGMA can work in combination with all these programs and with SGMA, largely focusing on 2015 issues going forward. So the State Board and DWR are going to continue to coordinate on GSP review and also providing assistance to GSAs and interested parties.*"

DEPARTMENT OF WATER RESOURCES TECHNICAL AND PLANNING ASSISTANCE



Since SGMA went into effect, the Department has provided about $180 million in assistance to GSAs. This assistance can be broken down into three types:

Planning assistance: About $10 million has been distributed for planning assistance, which includes third party independent facilitators to help GSAs run meetings for GSP development, and implementation. Written translation services are also provided as part of that planning assistance. Planning assistance also includes providing points of contact, (or POCs) for each high and medium priority basins who attend meetings, help in the discussions with the GSAs, provide support and clarification, and when needed, bring issues up to headquarters.

Technical assistance: About $20 million to date has been invested in providing tools and datasets such as groundwater levels, well completion reports, land subsidence data, and statewide land use data which are important datasets for GSAs as they are developing their GSPs. The Department has also developed best management practices and guidance documents for various components of the GSP that describe best practices for how to develop plans that satisfy the requirements of the regulations.

Financial assistance: The Department has provided about $150 million through the Sustainable Groundwater Management Planning Grant Program.

"*Especially the technical assistance we've provided, it's important not only for us to make the investments and collect that data, it's also important to make that data readily accessible and available for the public to use, whether it's GSAs or other members of the public that are interested in viewing this data*," Mr. Altare said. "*So on our website is our Data and Tools page*

which has links to our SGMA data portal as well as to a data viewer, which is an easy way for people in an interactive map format to access some of these datasets we've provided. Also all of our data is provided to the Natural Resources Agency open data platform, so it's open and transparent and available to the public for their use."

RESOURCES FROM THE STATE WATER BOARD

The State Water Board has tools and data that can help with GSP development and SGMA implementation:

Drinking Water Watch has data on all of the public water systems in the state of California. Users can look at public water systems by county, find out how many wells they have, how many connections they have, what the sources are, and get the contact information for these public water systems. This could be an important resource for GSAs to consider when they are looking at all beneficial users and uses of water in their basins, said Ms. Stork.

The exceedance and compliance of public water systems tool has information on public water systems that have problems with meeting drinking water quality standards. "*While SGMA is not intended to address legacy issues, these data might be important when developing the basin setting or when considering the potential impacts of management actions that a GSA is considering implementing in their basins*," said Ms. Stork.

There are a number of water quality tools available on the Groundwater Ambient Monitoring and Assessment program (or GAMA), including:

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  - The GAMA Groundwater Information System, an interactive map that has water quality data compiled from several sources.
  - The USGS trend analysis tool which allows a user to come in and look at water quality trends for 38 different analytes.
  - The domestic well water quality tool estimates water quality in domestic wells; Ms. Stork said this is part of our needs analysis for the state of drinking water in California that the Board is currently working on.
  - View all GAMA tools by clicking here.

With groundwater recharge being an important component of many basins' plans for sustainability, the Division of Water Rights has had several efforts underway to streamline surface water permitting for recharge projects:

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  - A streamlined recharge permitting program for local agencies with water or land use authority or GSAs that are interested in implementing projects that meet

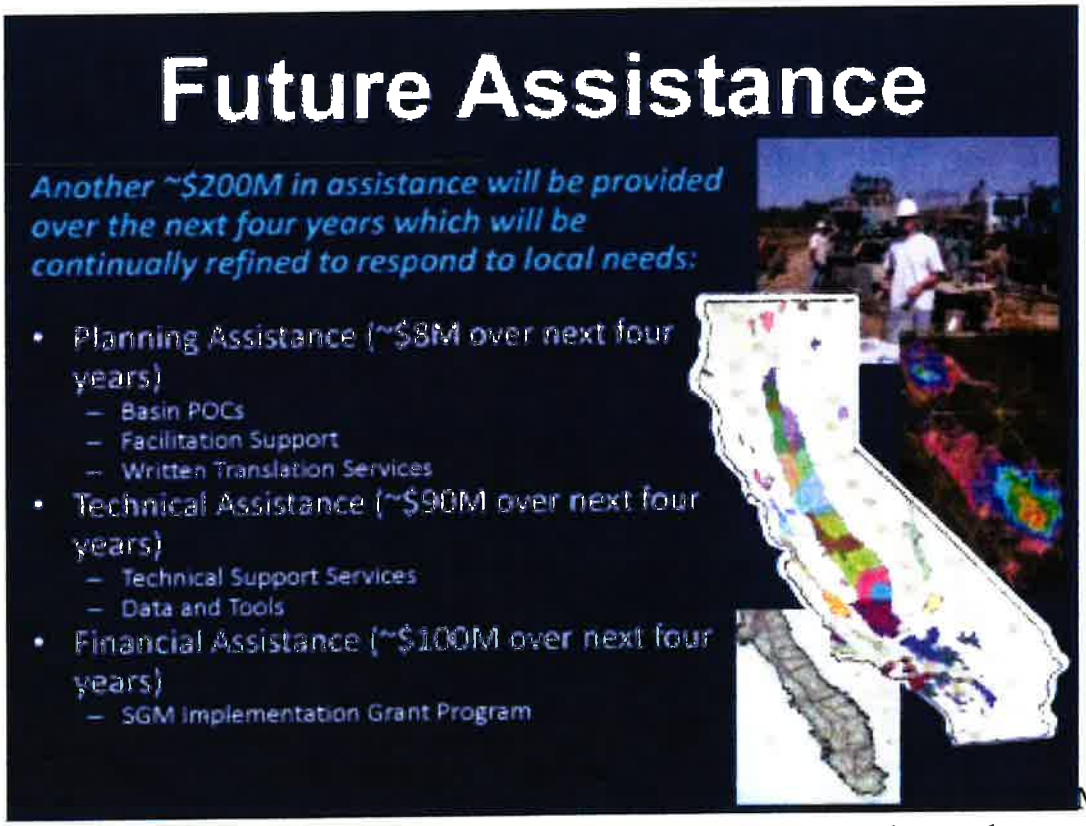
certain criteria can utilize a streamlined process to potentially receive a surface water permit for those recharge projects.

- New five-year temporary permits for GSAs and public agencies with water or land use authority that will also speed up the process when appropriate and when certain criteria are met for these recharge projects.
- More on water rights for groundwater recharge by clicking here.

The Fully Appropriated Stream Systems Tool is an interactive map that shows which streams the Board has determined that there's no more surface water available for appropriation. It's an important resource for GSAs who are considering those recharge projects.

"*That being said, there is the possibility for agencies to potentially pursue temporary permits for certain circumstances on a case by case basis in some of these areas that are fully appropriated*," said Ms. Stork. "*For more information, reach out to the Division of Water Rights*."

ONGOING AND FUTURE ASSISTANCE EFFORTS



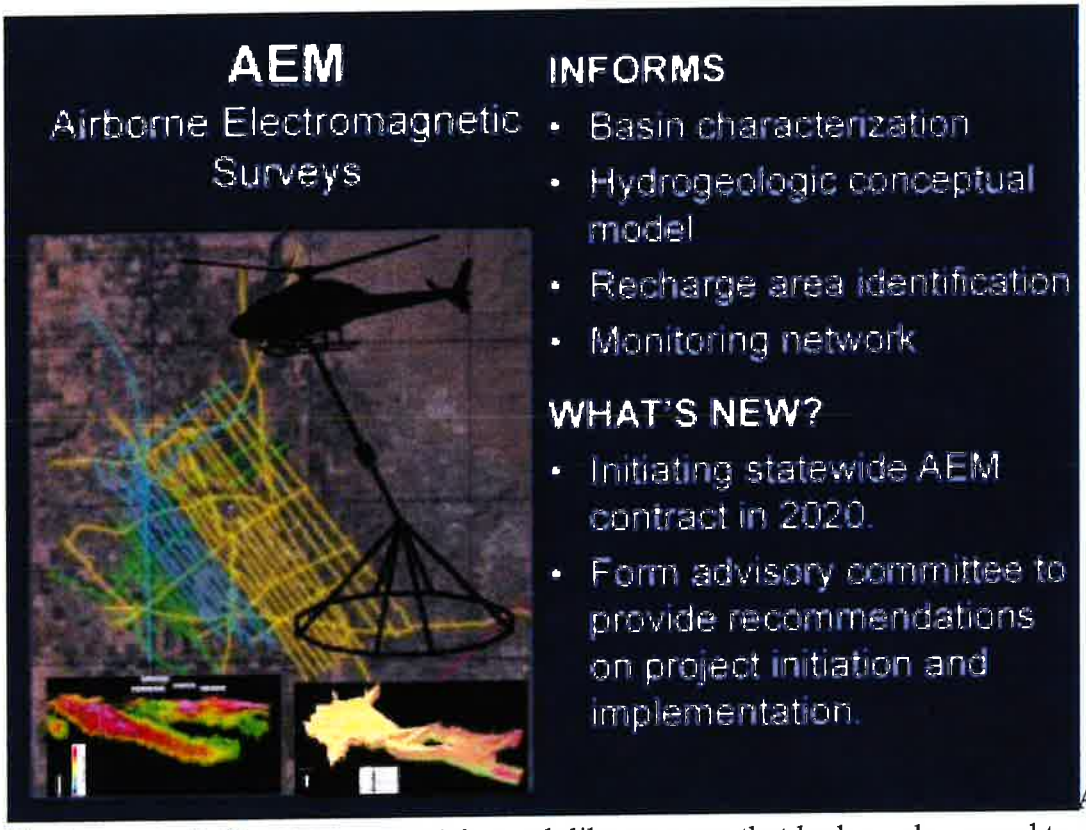
Moving forward, it's important that assistance continues because an approved groundwater sustainability plan is not the end of the SGMA process, but rather the beginning because the plan must be implemented over the next 20 years. And as GSPs are developed and implemented, data is being

collected by the local agencies and is being reported to the state both annually and in five-year progress updates.

"*We anticipate as better data is collected both locally and statewide, that information will be incorporated into future plans and it will ultimately improve the management of groundwater resources going forward,*" said Mr. Altare.

The Department of Water Resources' technical, planning, and financial assistance will continue through the GSP implementation period. Another $200 million in assistance will be provided over the next four years, with half of that going to provide financial assistance to GSAs through the Sustainable Groundwater Management Implementation Grant Program.

Airborne Electromagnetic Surveys (AEM)

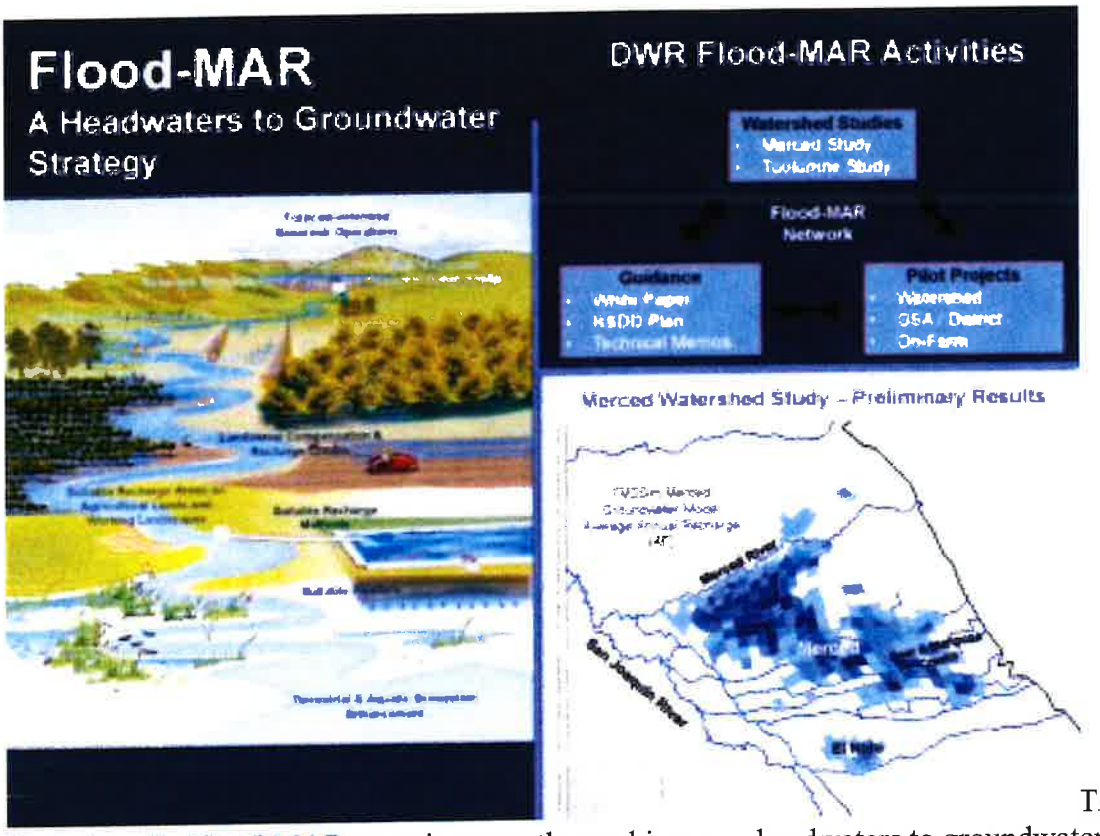


An Airborne Electromagnetic Survey (or AEM) is much like an x-ray that looks underground to determine the distribution of aquifers, aquitards, and other geologic information. The AEM survey technique can provide information on basin characteristics up to 1500 feet deep.

"*It will really help to inform important components of the plan like the conceptual model and importantly, it can help to identify where recharge water moves once it's in the ground and help identify good locations on the ground surface to recharge water,*" said Mr. Altare. "*As we move into 2020, we'll be moving forward with the AEM effort. We have had some successful pilots and we're working to take that statewide.*"

Click here to learn about Airborne Electromagnetic Surveys.

Flood MAR study



The Department's Flood MAR team is currently working on a headwaters to groundwaters research initiative to look at optimizing generally the application of flood flows to the surface to recharge water.

"*Managed Aquifer Recharge is an important component of plans we've received to date and will likely be an important component of plans we receive in the future, and so the Department is definitely committed to helping advance this area of study along*," said Mr. Altare. "*We have a Merced watershed study that the Flood MAR team is looking at ways to couple different water management models and tools to take advantage of those excess floodwaters and apply them to landscapes in a way that not only provides recharge benefits but other benefits as well.*"

Click here to learn more about FloodMar.

Groundwater Evaluation, Analysis, and Reporting System (GEARS)

The State Water Board has developed the Groundwater Evaluation, Analysis, and Reporting System (or GEARS) as an internal tool for meeting their obligations to collect reporting information under statute when state intervention is triggered; groundwater extractors that are required to report can log in, click where their well is, click where the place of use is, and provide annual extraction reporting data to the State Water Board.

However, board staff realized the tool might be really useful for GSAs to use in their basins when collecting information on groundwater extraction. "*An important thing to note is if this provided publicly, this will be separate from our system, so the State Water Board wouldn't necessarily be able to peer into the information that GSAs are collecting,*" said Ms. Stork. "*So that's something that we're building into consideration, but we see this is a tool that would be great if used throughout basins in California to help GSAs, and we've put a lot of time and effort into it already and if possible, we'd like to help GSAs by providing this to the public. It's the early days and stay tuned for more information in the future.*"

Q&A

Ex-EPA staffer on leaked water research, 'insane' regs

Hannah Northey, E&E News reporter • Greenwire: Friday, June 5, 2020

Ronnie Levin, a former EPA staffer, was instrumental in the agency's policymaking on lead standards for drinking water. Lance Cheung/U.S. Department of Agriculture(water sign); EPA(water tower); Francis Chung/E&E News(EPA flag), MIT Office of Sustainability(Levin)

Thirty-four years ago, Ronnie Levin's research on lead in drinking water sounded the alarm for many Americans about risks lurking in their tap water. As the Trump administration propels forward a new rule, Levin is still fighting to make sure communities, especially the most vulnerable, have safe drinking water.

Levin's pivotal research, which laid the groundwork for EPA's first lead rule, was leaked to major newspapers across the nation in 1986. "Dangerous Amounts of Lead in Much Drinking Water, EPA Says" was the ominous headline in ***The Washington Post***.

Her research, which warned that nearly one of every five Americans served by public water systems was consuming unsafe levels of lead, helped cement the nation's first federal limits on copper and lead in drinking water coming out of the tap, targeting potent neurotoxins blamed for causing lower intelligence in children, hypertension, strokes and heart attacks in adults, and higher risks during pregnancy.

The rule was revolutionary for recognizing that lead leaches into drinking water via pipes, and required utilities to go into people's homes to test drinking water, rather than relying on samples taken at treatment and distribution plants.

Levin, who retired from EPA three years ago and now manages the water and health program at Harvard University's T.H. Chan School of Public Health, is still fighting to strengthen those limits — but this time she's working from outside the agency to take on the Trump administration's most recent proposed rule. She's doing so on behalf of the Environmental Protection Network, a group of former EPA career staffers and confirmation-level appointees.

What's at stake, she says, is the health of some of the most vulnerable communities in the nation.

"The people who end up being exposed to lead in drinking water are core inner city people. It's not rich suburbs, and it's not rich towns," Levin said during a phone interview. "It's Flint, Mich.; Detroit; Newark, N.J.; Cleveland, Ohio; Washington, D.C.; and Providence, R.I. That's who it is."

EPA's proposed Lead and Copper Rule has proved divisive, drawing pushback from the agency's own science advisers.

EPA, which has said it will consider public comment, is proposing to require utilities to begin removing pipes once lead concentrations reach 15 parts per billion at 10% of taps tested. It would also institute a 10 ppb "trigger level" at which utilities would be required to consult state regulators on how to prevent lead pipes from corroding (***Greenwire***, Feb. 24).

While EPA has said the proposal reflects the best science available, critics have countered that the agency's proposed rule is confusing and unenforceable and provides too much time for replacing old, leaching lead pipes.

Levin spoke with E&E News from her home in Newton, Mass., about her new gig, her leaked research and taking on EPA:

So your research was leaked to the press?

I had this whole analysis that was written but was sitting around for months. And it got leaked to the newspapers. We know who did it. It was not me. [Laughter] But it got leaked to the newspapers, and in one day, it was on the front page of every major newspaper in the United States.

What was your reaction?

I freaked out. EPA was in this very dicey position. You have to remember, this was under [former President] Reagan. This was in 1986. To his credit, the head of the agency, who was Administrator Lee Thomas at the time, said, "We're owning it and we're gonna publish it." The water office never wanted it.

How did you end up working on lead in drinking water?

I was at EPA and we had worked on lead in gasoline, which is the major public health environmental achievement of the second half of the 1900s. Huge. And right after that, my office was reorganized. Instead of focusing on policy and economic analysis, I worked on water policy and economic analysis.

It was maybe 1985, and the water office decided to propose changing the [maximum contaminant level] for lead in drinking water.

My office said to me, "All right, go do lead in drinking water." So I went to take a look at lead in drinking water, and I knew nothing. So I did it the old-fashioned way. I read every article on lead in drinking water. Lead that could be in drinking water. Drinking water without lead. Everything. I've read every article.

What did you learn?

EPA's limit at the time for lead and copper of 50 parts per billion, measured at the entry point of a distribution system, was insane. And the way that drinking water standards were in 1985 — they have since changed — is that there was one sample taken in a water system once a year. And if you did it OK, then it was every three years. One sample.

The water office needed to up its game here. It needed to be not one sample, but many, many, 50 to 100. And it needed to be repeated constantly because microconditions change. And so that's what I came up with.

And you found there's an economic case to be made for controlling lead?

The way that lead gets into your drinking water is not that it's in the water. It's in the pipes — the water corrodes the pipes. That's how the lead gets to be there. The way that you deal with lead in drinking water is you reduce corrosion. And if you reduce how corrosive the water is, then your pipes last longer, and your hot water heaters last longer, and your radiators last longer, and your water meters last longer.

And there are huge economic benefits of doing corrosion control. That's where I really came in, as an economic analyst, to regulate corrosive water.

What was EPA's response to your research?

The drinking water office was not interested in it at all. They just ignored it because they're bureaucrats and they're risk-adverse and they're conflict-averse and that's how it's done.

But that study led to the nation imposing stricter lead levels in drinking water?

Yes. So it had been 50 ppb in the distribution system. What EPA ended up proposing was 20 ppb in home samples, 50 samples. So, I mean, I didn't win everything, but I won 90%. And then it came down to 15 ppb in the final rule that was adopted in 1991.

What do you think of EPA's current Lead and Copper Rule proposal?

It's so poorly done, so poorly written that it's certainly going to be litigated. It was proposed because they wanted to try and capture some environmental good news, but it's just not. It doesn't do anything for anybody.

It's not enforceable. It doesn't make any sense. They cut by half the rate of replacing lead service lines.

Do you think you'll affect the rule?

The question is how they're going to be able to change it, and it's for sure going to be litigated.

Where did you grow up?

I'm a military brat. My dad was a physician. He was in the public health service, and he ran a refugee camp in Southern Europe. So Naples, Spain. So for being a nice white girl, daughter of a Jewish doctor, I saw stuff that most people don't see. This was in the early '50s, and people were really poor. And I saw that.

How did that experience shape you?

He ran a refugee camp, so when someone got sick, the entire family went to the hospital. And I saw kids who were scrounging in the dirt and picking up debris that fell off the trash can at the hospital and the street, kids my age. I knew there were a lot of kids out there like me who didn't have food.

I thought, "This is how things are," and I knew we were different.

Your husband, Joel Schwartz, is also a former EPA staffer who studied lead. How did you meet?

We went to graduate school together at Brandeis University. And then we both went to EPA for 15 years. That's how I got to EPA. He was at EPA, and somebody offered me a job that I couldn't refuse. So I didn't refuse.

We worked together on lead and gasoline for years.

This interview has been edited and condensed for clarity.

Email: **hnorthey@eenews.net**

Leading Water associations urge EPA to expedite regulation of PFAS

National Ground Water Association and others draft letter to EPA Administrator, urging science and research to be the leading factor in determining PFAS regulations.

Jun 4th, 2020

Photo by Lisa Fotios from Pexels

Protection Agency (EPA) to move expeditiously as it evaluates drinking water standards for two per- and polyfluorinated substances (PFAS).

In a letter to EPA Administrator Andrew Wheeler, the National Ground Water Association (NGWA), Association of California Water Agencies (ACWA), Association of Metropolitan Water Agencies (AMWA), American Water Works Association (AWWA), Ground Water Protection Council (GWPC), Irrigation Association (IA), National Association of Water Companies (NAWC), National Rural Water Association (NRWA), and National Water Resources Association (NWRA) asked EPA to employ a holistic regulatory approach that protects source water from PFAS contamination, addresses public health concerns, and ensures public confidence.

In February, the EPA announced its proposal to regulate PFOS and PFOA, two PFAS compounds, and requested comment on regulatory approaches for other PFAS. In the absence of a federal standard, several states have moved forward with setting their own regulations for various PFAS.

PFAS are a large group of man-made chemicals used in consumer products and industrial processes. In use since the 1940s, they have properties that make them persistent in the environment.

"At NGWA we have always believed good regulations are based on sound science" said NGWA CEO Terry S. Morse, CAE, CIC. "The implications of regulating these substances will be far-reaching so it's crucial they are crafted with input from the scientific community."

Three years of testing found that 72% of testing detecting PFOS and PFOA sent to the EPA were found in groundwater.

The following requests are outlined in the letter to the EPA:

1. Provide the resources required to complete the technical and economic analyses necessary to support a proposed SDWA action for PFOA and PFOS.
2. Begin engagement with outside experts to develop and review a public health risk assessment for PFAS beyond PFOA and PFOS to guide determining which PFAS or

3. Actively engage water systems, local government, state agencies, and other key stakeholders in the practical implementation of PFAS risk management including establishing the adequacy of analytical methods and capacity, effective risk communication, and sustainable treatment options, among other important factors.
4. Accelerate research on water treatment, occurrence, and health effects to support future decision making and contaminant prioritization.
5. Leverage available regulatory tools in other statutes to gather occurrence and health risk assessment data and organize them to support research and decision making, using regulatory tools that include the Toxics Release Inventory, Sections 4 and 8 of the Toxic Substances Control Act, and the Unregulated Contaminant Monitoring Rule.

SOURCE: NGWA

Village News - Also serving the communities of De Luz, Rainbow, Camp Pendleton, Pala and Pauma

CWA approves detachment conditions resolution

By Joe Naiman
Village News Reporter

The San Diego County Water Authority will oppose the detachment of the Fallbrook Public Utility District and the Rainbow Municipal Water District from the SDCWA unless certain findings can be made.

A May 28 SDCWA board vote approved a resolution that the CWA will oppose the detachment unless it can be demonstrated that FPUD and Rainbow can guarantee that all obligations promised to their own ratepayers are met, that the detachment will not adversely affect the other 22 CWA member agencies or the county as a region, that the detachment and annexation into the Eastern Municipal Water District will not increase reliance on the Bay-Delta, and that the detachment will not reduce the CWA's voting power at Metropolitan Water District of Southern California board meetings.

"This resolution does not oppose these detachment applications. It lays out a process to thoroughly review," Sandra Kerl, general manager of CWA, said. "Today's resolution is intended to get the ball rolling."

FPUD general manager Jack Bebee and Rainbow general manager Tom Kennedy, who are also their district's representatives on the CWA board, cast the only votes against the resolution. Two city of San Diego representatives on the CWA board recused themselves: Jimmy Ayala is an executive for Pardee Homes, whose Meadowood project will be served by Rainbow, and Chris Cate is the San Diego City Council alternate on the Local Agency Formation Commission board.

FPUD has been part of the San Diego County Water Authority since the SDCWA was formed in 1944. Rainbow was formed in 1953 and received CWA membership in 1954. The Metropolitan Water District of Southern California began delivering water to San Diego County in 1947.

MWD's San Diego Aqueduct conveys water to a delivery point 6 miles south of the Riverside County line, which allowed MWD and the CWA to provide equal contributions for the connection between MWD's Colorado River Aqueduct and the San Vicente Reservoir in Lakeside.

The CWA northern boundary is the county line. All but one of FPUD's connections are from MWD pipelines rather than from CWA pipelines and four of Rainbow's eight connections are to the MWD portion of the pipeline.

The CWA's supply rate is a melded rate which melds the cost of water delivered from MWD, water purchased from the Imperial Irrigation District under the Quantification Settlement Agreement, and water produced by the Claude "Bud" Lewis Carlsbad Desalination Plant in Carlsbad.

The CWA also has transportation, storage, and customer service charges along with fees and charges for fixed expenditures which are incurred even when water use is reduced.

FPUD and Rainbow believe they can reduce their cost of purchasing water – and thus their rates – by detaching from the CWA and becoming part of another MWD member agency.

"They would be completely dependent upon MWD water. Their customers would no longer have access to Water Authority supplies," Kerl said.

Before the 1991 drought, approximately 95% of the CWA supply was purchased from MWD. Over nearly three decades the CWA has worked to diversify its supply and only 40% of the 2018 supply was from MWD. Additional projects along with a QSA schedule which provides for quantity increases are expected to reduce the MWD amount to 2% of the CWA's supply by 2035.

MWD supply is obtained either through the State Water Project, which transports water from Northern California including through the Bay-Delta, or from the Colorado River Aqueduct which runs from Parker to Lake Mathews.

Although the "March Miracle" in 1991 provided enough rainfall to cancel plans for mandatory water cutbacks, MWD had planned to cut back deliveries to the CWA by 50% including deliveries to customers with the agricultural discount by 90%.

MWD phased out its Interim Agricultural Water Program during a subsequent drought and the CWA responded with its Special Agricultural Water Rate program which provides a discount with the condition of cutbacks in a drought.

FPUD and Rainbow have filed applications with LAFCO to detach from the CWA and annex to the Eastern Municipal Water District, which is a member of MWD and purchases imported water directly from MWD. The Western Municipal Water District is also a member of MWD and provides retail water sales of MWD supply to the Elsinore Valley Municipal Water District and to the Rancho California Water District.

If FPUD and Rainbow detach from the CWA and join Eastern, their status would be similar to that of the two water districts which obtain MWD water from Western. The Eastern Municipal Water District currently covers 555 square miles and includes Hemet, Menifee, Murrieta, Perris, Romoland, San Jacinto, Temecula and Winchester. Eastern has more than 140,000 water customers.

The CWA at one time had wholesale districts selling water to non-CWA retail district members, and that was responsible for the Lakeside Water District becoming the first member to leave the CWA in 1957. Lakeside was an original member but partnered with two other water districts to create the wholesale district which eventually became the Padre Dam Municipal Water District, a wholesale district.

In 2006, the two remaining retail districts merged v
became a CWA member. That is also the most rece

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some agencies being eliminated from CWA membe
Municipal Water District, which merged with FPUD in 1990.

In no previous case has territory been removed from the CWA boundaries when an agency ceased to be a CWA member.

"It's a landmark effort and it needs to be very thought out," Kerl said. "I believe that LAFCO would be benefited by guidance from this board."

Although Bebee and Kennedy opposed the resolution, they believe that the list of issues will facilitate discussion regarding the detachment conditions.

"It's helpful to have all this," Bebee said.

"We look forward to talking with the Water Authority about that," Kennedy said. "We are happy to sit down and talk."

LAFCO staff analyzes any proposed reorganization both for service impacts and for financial impacts. The analysis will conclude with the preparation of a report and a staff recommendation. The LAFCO board will hold a public hearing and may or may not adopt the staff recommendation.

The analysis will include the economic impacts not only for FPUD and Rainbow but also to the CWA and the other member agencies. The LAFCO board and staff members prefer that FPUD and Rainbow work out financial terms to compensate the CWA and the 22 remaining agencies, although LAFCO would consider financial terms if no agreement is reached.

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US home water use up 21% daily during COVID-19 crisis

June 2, 2020 by N.F. Mendoza

The average US home used nearly 729 additional gallons of water in April than it did in February, according to a new study from water-monitoring company Phyn. This means usage was up 21% daily, as most Americans followed orders to work and shelter from home, in an effort to "flatten the curve" and curb the spread of the coronavirus.

The spike in water use seems perfectly plausible, given that trends and shifts in water use were bound to change, as people spent more time at home. The Phyn study explains how the 24.3 gallons a day in the US is broken down:

- 21% more sink use
- 20% more toilet use
- 16% more shower use
- 3% more washing-machine use

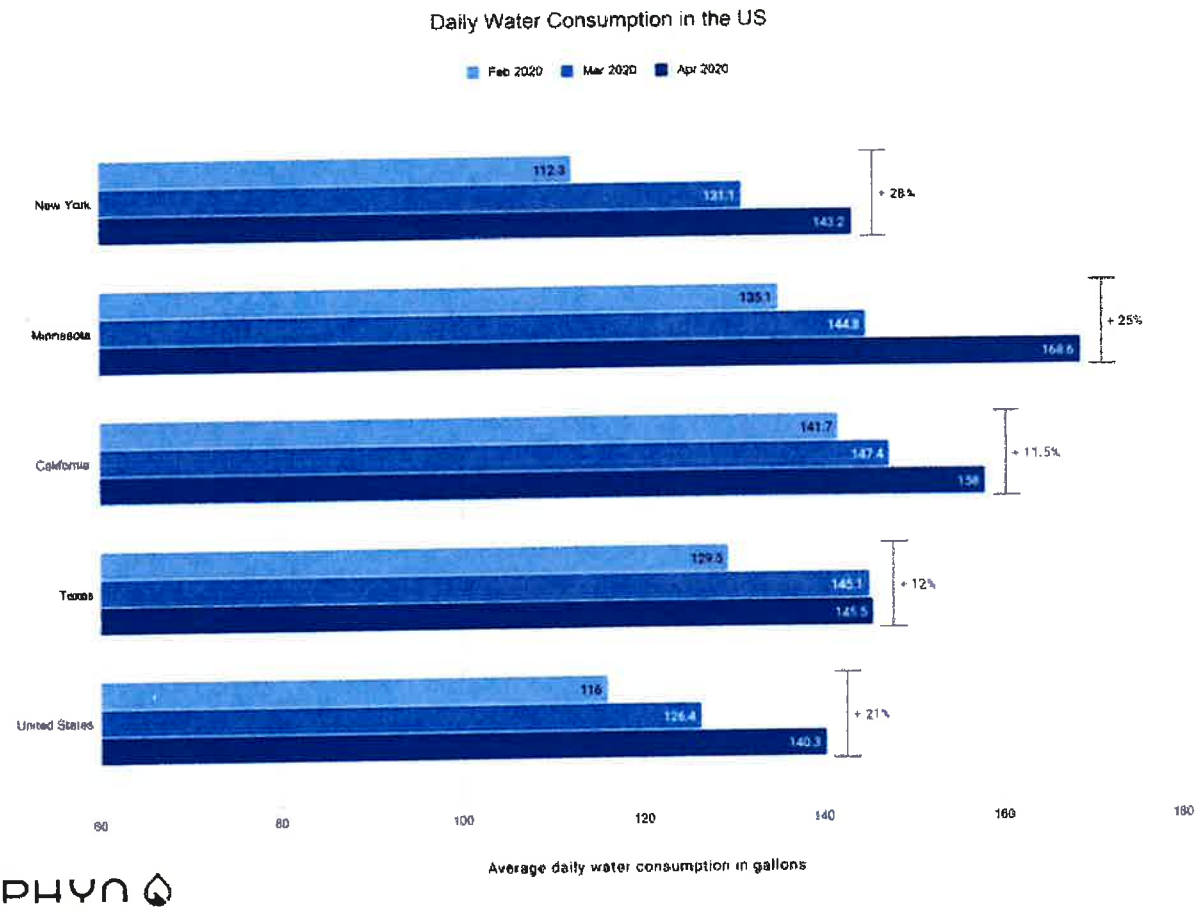
"We anticipated and were correct in the assumption we'd see a natural increase in sink and toilet use, as a result of just 'being home,'" said Ryan Kim, Phyn CEO. "On the flip side, we predicted fewer showers taken, as workers did not have to go into the office and kids weren't leaving for school."

The US state hardest hit by COVID-19, New York, also had the highest daily water consumption at the early epicenter of the pandemic: 28% used more at home (30.9 gallons) on a daily basis.

Minnesota also had a big surge, from 135.1 in February to 168.6 (or a 25% rise) in April. The most populated state (40 million residents or 12% of the entire US), California, was at 141.7 in February, and up to 158 in April (or 11.5% rise). Meanwhile, the second-largest state, Texas, went from 129.5 to 145.5 gallons of water, from February to April.

Shifting bathroom habits

Phyn's study states "Water consumption patterns are following other notable trends of the new normal stay-at-home life." Families are no longer all rising and using peak morning consumption at 7 am, but two hours later, at 9 am. Despite the significantly later-in-the-morning start, the average day still wraps at the time it previously did.



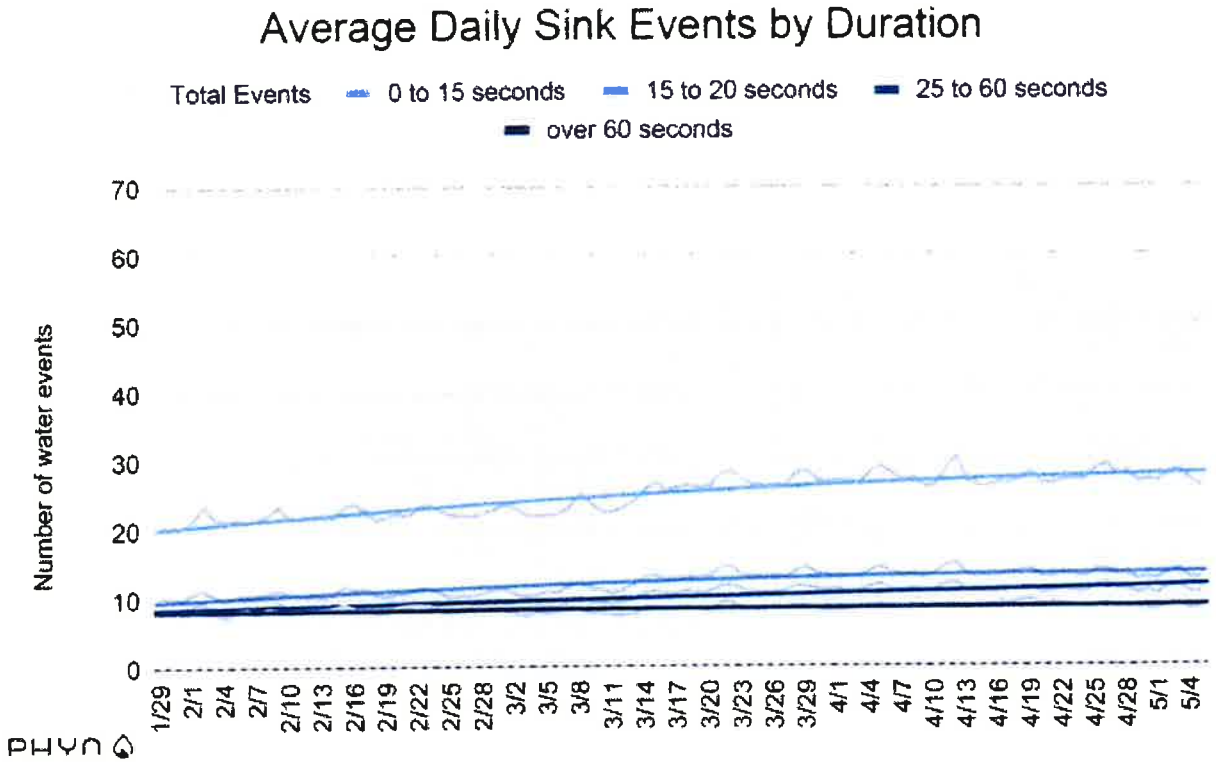
Usage patterns

The highest increase in water use happens in the afternoon, presumably when e-schoolers and their employed adult residents take a break, get up to use the restroom, wash their hands, or prep meals.

20 seconds or sing "Happy Birthday" twice

If Americans have learned one thing from the COVID-19/infectious disease experts, whether it be Dr. Anthony Fauci of the US or Dr. Kim Woo-joo of Korea, it's that washing hands is an imperative, and likely a major contributor and self-protector. It's less surprising, then, when Phyn released the research around sink use. The average US household visited the sink in their home nearly 50 times daily in April, which is 10 more daily visits than in February. The report pointed out that sink visits don't always mean more handwashing. They're just spending more time at the sink.

Phyn data shows families making more daily trips to the sink in April, 0-15 seconds in duration, 27 times daily (up from 22 in February). Slightly longer trips, which the report cites as within the CDC handwashing guidelines, at 15 to 25 seconds occur 13 times per day, up from 11 seconds in February.



Down the commode

On the average, Americans are using their home bathrooms three times more in April than they did in February. To compare, New Yorkers are actually flushing their toilet five times more in April than they did in February.

No to B.O.

Whether Americans are finally addressing hoarding tendencies in their enforced time at home (thus working up a serious sweat from organizing/applying the philosophies of Marie Kondo), or adopting a regular fitness regime (bringing on the inherent resultant sweat), they're apparently showering more, three times a week as many times, as they did before the pandemic.

As the average general water-use starts later in the day, so goes the American shower habits. Morning showers shifted to later in the morning. There was an increase in midday (noon to 4 pm) showers, where were up nearly 40%, as were evening (4 pm to 11 pm) showers, up a little more than 20% than in February.

"We don't generally think about water until the bill comes, but we're constantly using it throughout the day, every day," Kim explained. "It's logical increased home water usage is a byproduct of the COVID-19 lockdowns, and highlights the impact this virus has on the consumption of a precious and finite resource."

May days

Looking ahead, Kim said: "We anticipate seasonal increases in water use for irrigation and expect to see a gradual offset of increased consumption, as cities continue to open up. People will spend less time at home and shift some water use to work, restaurants, and other businesses. What will be very interesting is to see and compare how quickly this shift happens based on the timing of, and adherence to, local restrictions."

Methodology

"We will continue to watch and publish this water consumption data as an ongoing effort as the pandemic continues to play out," Kim said. "We are eager to see if and how the easing of stay-at-home restrictions impacts residential water use and habits."

Phyn randomly selected 2,000 homes across the US that had Phyn Plus devices (monitors) installed and the data was set from Feb. 1 to April 30.

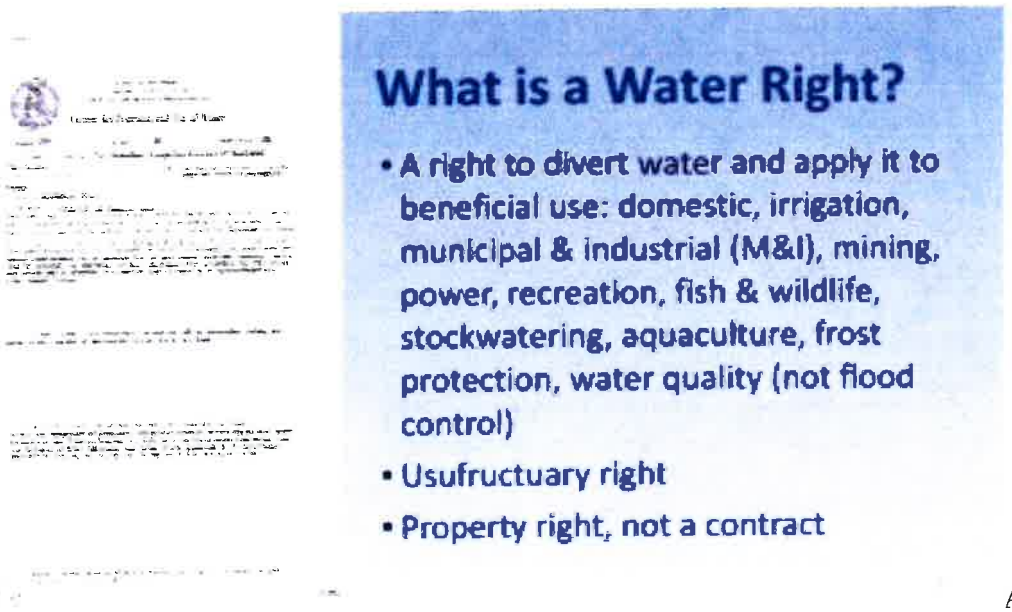
FEATURE: Water rights 101

June 3, 2020 - Maven

California water law is complex, governed by both state and federal law, part property law and part environmental law. The system incorporates a traditional water rights riparian system with the appropriative system found elsewhere in the West with the result being confusion that often leads to more questions than certainty.

At a recent staff training session at the State Water Board, Senior Staff Counsel Dana Heinrich gave this introduction to water rights in California where she explained the legal distinction between surface water and groundwater, the different types of surface water rights and groundwater rights, the public trust doctrine, the prohibition against the waste and unreasonable use of water, water right change petitions, the water board's enforcement authority, and statutory stream adjudications.

WHAT IS A WATER RIGHT?



A water right is the right to divert water and put it to beneficial use. In the State Water Board's regulations, the recognized beneficial uses include domestic use, irrigation, municipal and industrial uses, mining, power generation, recreation, fish and wildlife protection, stock watering, aquaculture, frost protection, and water quality. Ms. Heinrich pointed out that flood control is actually not a beneficial use for purposes of water rights.

A water right is a usufructuary right which is a legal way of saying it is the right to use water, but the water itself is actually owned by the people of the state of California. "*That's an important concept because the public retains a significant interest in water resources which are a public resource and the law protects that public interest in a variety of ways*," she said.

"*Another important concept is that not all entities or people who divert and use water are water right holders*," she continued. "*Many diverters actually have water supply contracts with water right holders, so contractors have to abide by both the terms of their contract which can vary as well as the parameters of the water right.*"

SURFACE WATER AND GROUNDWATER, DEFINED

Water right law divides water into two basic classifications: surface water and groundwater. Surface water is defined under the water code as streams and lakes, as well as a legal construct called a subterranean stream. Everything that's not basically surface water is considered percolating groundwater.

"*The distinction between water in a subterranean stream and percolating groundwater is important because our surface water permitting system only applies to surface water, including water flowing in subterranean streams*," said Ms. Heinrich. "*It does not apply to percolating groundwater, although with the passage of Sustainable Groundwater Management Act, now groundwater is regulated under SGMA but our permitting system doesn't apply to percolating groundwater. There is the legal presumption that groundwater is percolating groundwater unless there is evidence to the contrary.*"

The State Water Board has developed a four part test for determining whether groundwater is part of a subterranean stream which was recently upheld in the North Gualala Water Company v. State Water Resources Control Board case ((2006) 139 Cal.App.4th 1577): There needs to be a subsurface channel, relatively impermeable bed and banks, the course of the channel needs to be known or capable of being known through reasonable inference, and groundwater needs to be flowing in the channel. Oftentimes, there is groundwater flow discharging into the alluvium and then the alluvium is discharging into the surface water stream, which is interconnected groundwater, but Ms. Heinrich noted that the test for a subterranean stream is not an impact test; application of the four part test determines whether water is in the subterranean stream or not.

"Subterranean streams are not the same thing as interconnected groundwater, and it is at least hypothetically possible to have something that satisfies the test for the subterranean stream that is not connected in any way to a surface water body," she said. *"Conversely, just because groundwater is interconnected with the stream, whether gaining or losing, doesn't mean that it's a subterranean stream."*

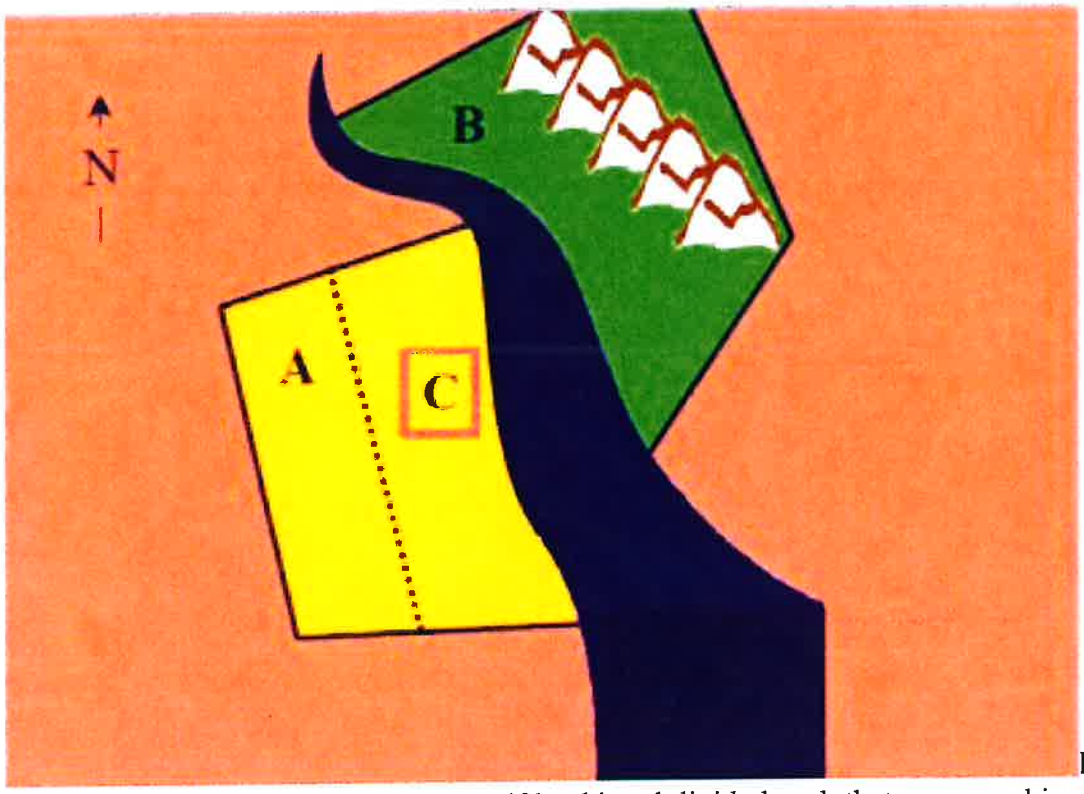
TYPES OF WATER RIGHTS

There are five different types of surface water rights, and basically for every type of surface water right, there's a corresponding groundwater right. For surface water, there are riparian rights, pre-1914 appropriative rights, post-1914 appropriative rights, pueblo rights, prescriptive rights, and federal reserved rights. The groundwater rights that correspond to riparian rights are called overlying rights; there are also appropriative rights, pueblo, prescriptive, and federal reserved rights to groundwater.

"The main distinction between surface water rights and groundwater rights is our permitting system," Ms. Heinrich said. *"Since 1914, a water right permit from the State Water Board or its predecessor has been required to get an appropriative right to surface water. That is not the case with respect to groundwater, although groundwater is now being regulated under SGMA."*

Riparian rights

A riparian right is the right to reasonably and beneficially use water on riparian land, which is defined as land that is adjacent to a surface water body. Riparian rights and part and parcel to the land, so they can't be separated from the land; when the land is sold, the riparian right is sold along with it.



Riparian rights are also subject to severance, so if land is subdivided such that one parcel is no longer contiguous to a stream, the riparian rights that were attached to that land go away unless there is some language in the deed or other evidence of intent to retain a riparian right. But basically the law does favor riparian rights, so once the land is no longer touching the surface water body, normally the right is gone, she said.

So on the graphic, if Parcel A is sold and separated from Parcel C and there was no evidence of an intent to retain a riparian right, then parcel A would lose it's riparian rights. On Parcel B, the water can be used on the land is contiguous to the stream, but land outside the watershed cannot be supplied with water under riparian rights.

Riparian rights only extend to natural flows; they don't extend to 'foreign water'. Water can be considered foreign either if it's been imported into the watershed from a different watershed; it can also be foreign in time, such as releases from upstream storage. Any time water would not under natural conditions be present is considered foreign water and riparian rights don't attach to that, she said.

"*That's important because, for instance, if you're looking at whether a riparian right holder might be injured by some change that takes place upstream, if the nature of the change is only affecting foreign water to which the riparian right holder is not entitled to begin with, then there's no injury to that riparian right holder*," she said.

Water cannot be seasonally stored under riparian rights, which is generally taking water during a time of surplus and holding it for use later during a period when water is in short supply.

Riparian rights are correlative to one another, which means that they all have the same priority, regardless of the patent date of the land; they are all basically on equal footing. When there isn't enough natural supply to satisfy all the riparian right holders, they are all supposed to cut back, but there isn't a set procedure for how that happens.

Riparian rights also generally tend to be senior to appropriative rights, although the priority of the riparian right dates to the time the land was patented. Ms. Heinrich noted that there are appropriative rights out there with very old priority dates, so it's conceivable that if an appropriative right were developed with a priority date older than the patent date of the riparian right, then the appropriative right can be senior to riparian rights, but as a general rule, riparian rights are senior.

Because they are based on land ownership, riparian rights don't have to be exercised in order to be retained. In other words, they can be dormant and unused and they are still part of the land, even if they are not used, and they retain their seniority. Ms. Heinrich noted there are exceptions, such as during a statutory stream adjudication, the water board can actually subordinate the seniority of unexercised riparian rights to otherwise junior appropriative rights; it is not common but it has happened in the past and so that possibility exists.

Overlying rights

Overlying groundwater rights are analogous to riparian rights; they attach to land overlying a groundwater basin. Similar to riparian rights, the water can only be used on the overlying land and can't be exported outside the groundwater basin.

Overlying rights only extend to native water within the groundwater basin. For example, down in Southern California in particular, a lot of water districts recharge their groundwater basins with imported water; that's foreign water, so overlying rights don't attach to that imported groundwater. With groundwater recharge, if you are specifically storing surface water

underground, legally that is considered a surface water, so it is not a groundwater in that circumstance and it becomes no different than if you were storing it in a surface water reservoir.

Overlying rights, like riparian rights, are senior to appropriative rights to the same groundwater basins. They are correlative with one another and they are not subject to loss for non-use, so they exist as part of the overlying land. Overlying rights are typically exercised by agricultural users because the water has to be used on the overlying land and typically the use is agricultural.

Appropriative rights

There are three types of appropriative water rights; pre-1914, post-1914, and appropriative rights to groundwater.

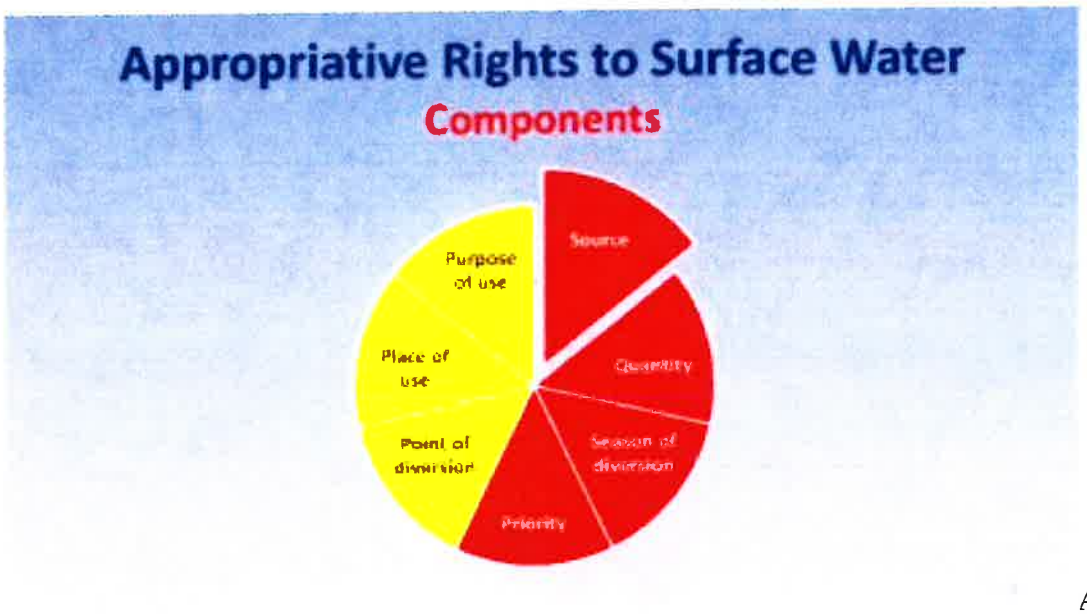
View of gold miners excavating an eroded bluff with jets of water at a placer mine in Dutch Flat, CA between 1857 and 1870.

Appropriative rights date back to the Gold Rush era. Miners typically needed water to work their claims in California and elsewhere in the west, but they didn't own the land as usually it was federal land they were operating on, so local customs for allocating the water were developed and were typically on a priority system of 'first in time, first in right'. Later those local customs were ratified by the law and eventually it developed into the appropriative water rights system we have today.

Appropriative rights, unlike riparian and overlying rights which are based on land ownership, are based on the actual diversion and use of water. They can be developed over time, so a diverter can start small and grow, but there's a fundamental concept where appropriative rights have to be developed with due diligence – you can't just hoard water on future plans and never fulfill them and prevent anyone else from coming along and appropriating water.

Appropriative rights are not limited to riparian land or overlying land; they can be exported outside the watershed. They also are not limited to native water like riparian and overlying rights, so if there's an upstream appropriator who imports water into a watershed, that return flow is available for appropriation downstream as long as it is abandoned by the party that imported the water to begin with. With appropriative rights, water can be stored.

The priority of appropriative rights relative to one another is based on the concept of 'first in time, first in right' with the priority date based on the date when the appropriator first manifests intent to develop the appropriative right. They are subject to forfeiture or loss from non-use.

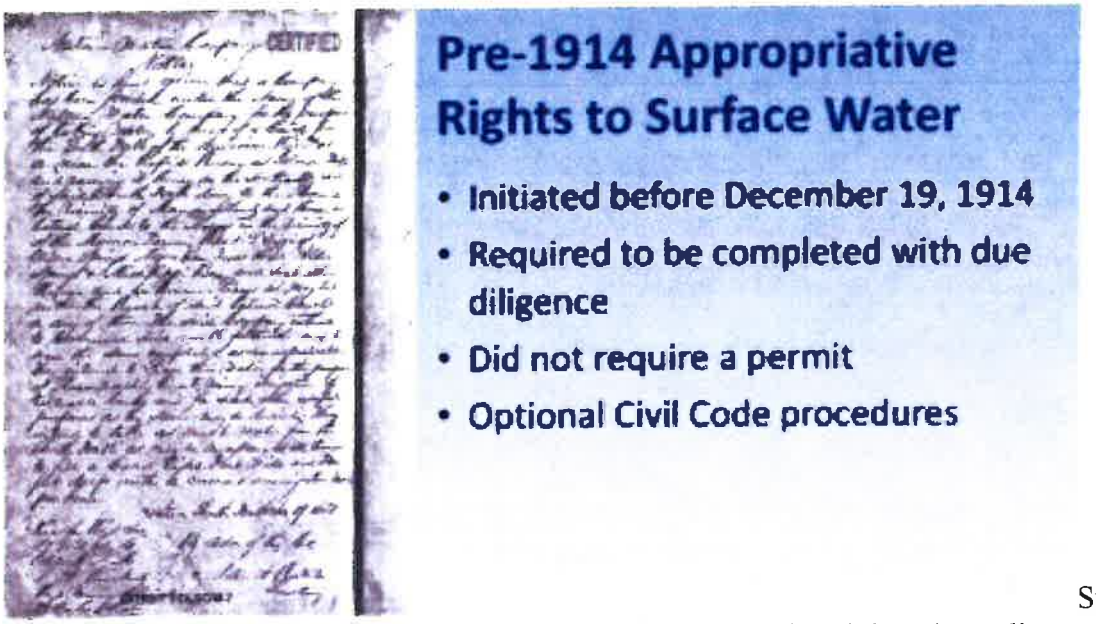


All appropriative rights to surface water have certain components. They are a right to a particular source so they are not fungible; it's based on the actual diversion and use from a particular water body. Appropriative rights are limited to a particular quantity that is based on actual diversion and use and is usually measured in terms of a rate, either miner's inches or cubic feet per second or gallons per day, and a total volume, usually measured in acre-feet or both.

Appropriative rights are limited to a season of diversion; it can be year round, but most often is for an irrigation season. Appropriators have a particular priority of right, a particular point of diversion, a place of use, and purpose or purposes of use. The components on the pie chart in red are generally not subject to change; the yellow components are subject to change, depending on the circumstances.

"*These are the foundational components of an appropriative right,*" said Ms. Heinrich. "*Most modern appropriative rights also have many other permit conditions, like reporting requirements, monitoring requirements, and the like. But these are sort of the foundational components of all appropriative rights.*"

Pre-1914 appropriative rights



Surface water rights can be divided into pre-1914 and post-1914 appropriative rights, depending on whether they were initiated before or after the effective date of the Water Commission Act of 1914, which was the legislation that created the permitting system that the State Water Resources Control Board now administers. Prior to that date, appropriative rights were developed in accordance with the common law that came out of those early mining customs, but since 1914, the exclusive way to obtain an appropriative right to surface water is by getting a permit from the State Water Board.

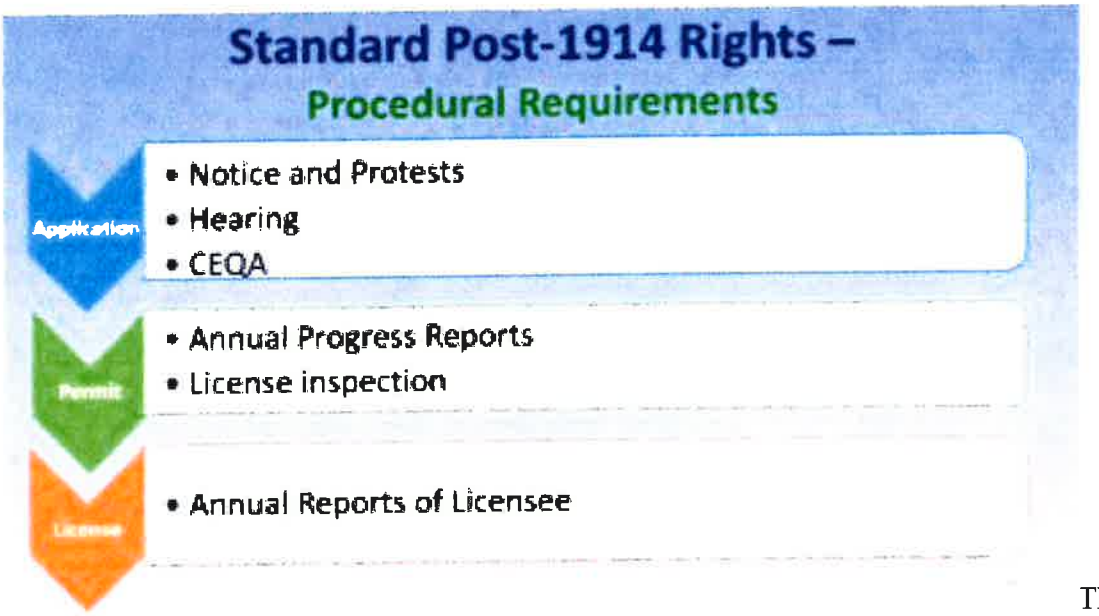
"*Before the December 1914 effective date of the Water Commission Act, there was a civil code procedure for posting and recording notice of your intent to appropriate water and developing an appropriative water right, but it was optional*," Ms. Heinrich said. "*So just because a party didn't follow those procedures doesn't mean that they don't have a valid pre-1914 right; the benefit to it was that it established a clear date for the priority of the pre-1914 right. It was good for record keeping but wasn't mandatory.*"

She also noted that pre-1914 appropriative rights needed to be initiated before December 19, 1914, but not necessarily completely developed by that date. "*There's a doctrine called progressive use and development, so if a pre-1914 appropriator establishes an intent and initiates the development of a pre-1914 right – remember I said it could be developed over time, so particularly for a small town or something like that, as long as there was a pre-1914 plan of development and that is followed with due diligence, than you can actually have pre-1914 rights that sort of straddle December 19, 1914; so they didn't have to be completed by that date, but they did have to be initiated by that date.*"

Post-1914 appropriative rights

There are three basic types of post-1914 appropriative surface water rights: permits and licenses (which are essentially the same type), temporary permits, and registrations. Ms. Heinrich also noted that there used to be provisions in the water code for acquiring a stock pond certificate and federal non-reserved statements, but those programs have expired, so although people cannot file

for those anymore, those that did file before the statutory deadline still may be utilizing those rights.



There is a three-step process for obtaining a post-1914 appropriative right to surface water:

Step 1: An application is filed with the Division of Water Rights who issues notice of the application. Protests can be filed on the basis that the appropriation would interfere with senior water rights, adversely affect fish and wildlife, or other public trust resources, or would not be in the public interest. Depending on whether those protests are resolved, the Board may hold a hearing to resolve the protest or any other material issues of fact that need to be resolved in order for the Board to act on the application.

The Board also has to comply with CEQA, the California Environmental Quality Act, before acting on an application unless the project is exempt. Ms. Heinrich noted unfortunately there are a lot of illegal projects out there, and often for those projects, an existing facility exemption under CEQA applies.

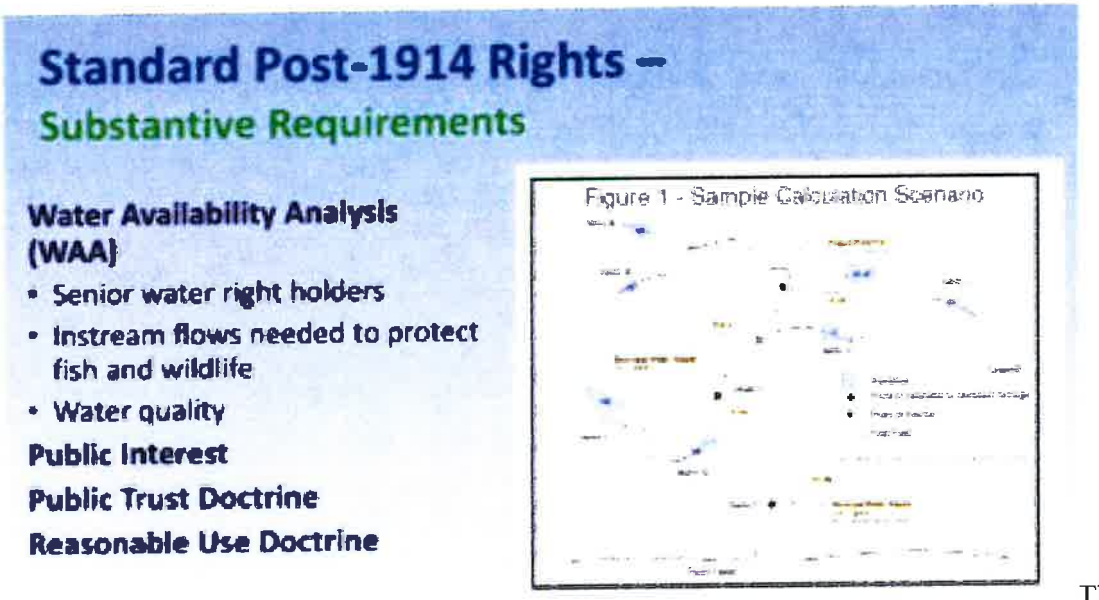
Step 2. Assuming the Board approves an application, a permit is issued. Generally, for projects that have not been constructed before obtaining a permit, there is a period of development when the permittee is authorized to go out and build their project, build their diversion facilities, and start applying water to beneficial use. During that time, they submit annual reports documenting their progress.

Once that period is over, the Division conducts a licensing inspection. If the Division finds that water has not been diverted and applied to beneficial use in accordance with the terms of the permit, then the permit can be revoked, but assuming that the Division confirms actual diversion based on the licensing inspection and the progress reports and any other relevant information in the application file, and the use is in accordance with the permit, then a license is issued confirming the a right to the amount of water that's actually been applied to use. So the license

can be issued for less than the full face value of the permit, depending on how much water the permittee has actually put to use.

"*The two-step system whereby first a permit is issued and later a license is issued reflects the legal principle that an appropriative water right is only acquired through the actual diversion and use of water*," said Ms. Heinrich. "*So a permit when it is issued is not actually a water right. It's what's called a inchoate right to develop an appropriative right by diverting and applying to beneficial use water. A license is significant because it documents and it confirms that the permittee has done that, so a license is a vested water right.*"

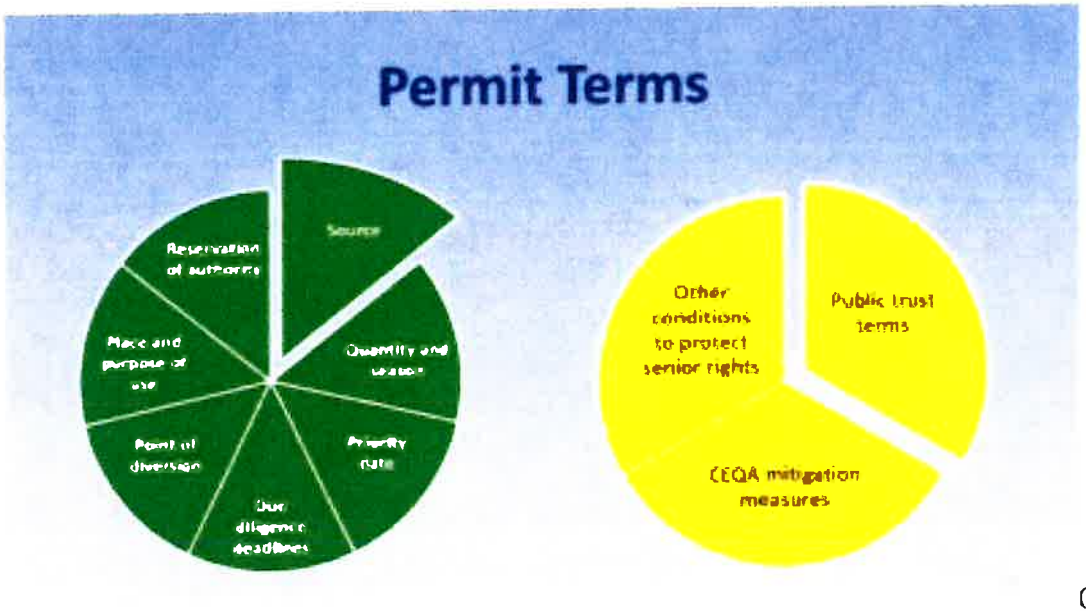
She acknowledged there is currently a licensing backlog due to staffing shortage and other division priorities. "*So it's not to say because there are projects out there that have been completed and are still operating under permits that those projects are somehow illegal*," she said. "*They can operate that way indefinitely. It's just that there's always going to be uncertainty as to the validity and the scope of the right unless or until it is licensed.*"



The most substantive requirement for a water right application is the water availability analysis. Under the water code, the water board is charged with determining whether there's surplus water available for appropriation and that means looking at the demands of senior water right holders and how much water needs to remain instream for fish and wildlife and water quality and other instream beneficial uses.

"*That sounds pretty straightforward in concept but in reality, the analysis can actually be quite complex*," she said. "*How much water may be available at a given point on a stream can be quite complicated because you have to look at upstream demand, downstream demand, instream flows, and how much water is available and then you back out the demands for senior water right holders and instream flows and see if you have anything left that's available for appropriation.*"

The State Water Board also has broad public interest authority, so it is charged with evaluating the public interests in whatever use the appropriator or the applicant wants to put the water to, weighing that against competing demands for the water, and deciding whether and under what conditions issuing a permit is in the public interest. The public trust doctrine and the reasonable use also come into play in the application process.

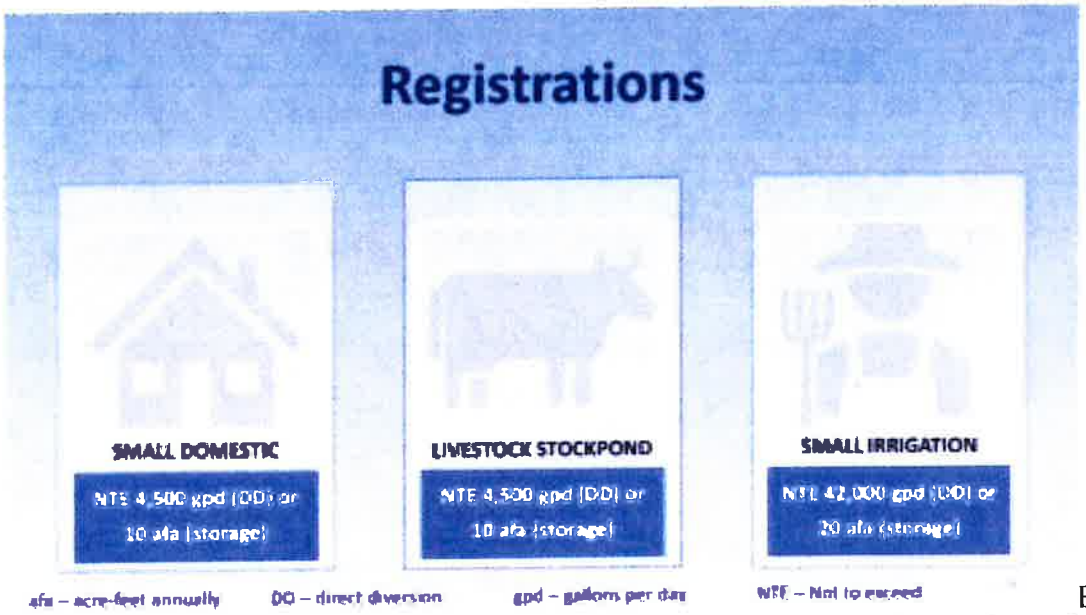


On the slide, the permit terms shown in green are the permit terms that are always in permits; those shown in yellow are usually in permits in addition to those shown in green. The components shown in green are the same basic components of appropriative rights: a specified source, a quantity, a season, and a priority date which, for permits, is based on the date when the application was filed.

Ms. Heinrich noted that there are deadlines to enforce the due diligence requirement for appropriative water rights, so there is a deadline to complete construction and a deadline to complete application of water to beneficial use. The point or points of diversion and sometimes rediversion are specified, as well as the place and purpose of use and a reservation of authority to make future changes as warranted to the permit.

She also noted that for modern day permits, there's almost always additional terms to protect senior water rights such as bypass flow conditions or to protect instream flows; there are often terms that specify the CEQA mitigation measures for environmental impacts.

Registrations



Registrations are for minor appropriations. There are three types: small domestic, livestock stock pond, and small irrigation. The allowable quantities are the same for small domestic and livestock stock ponds which is not to exceed 4,500 gallons per day by direct diversion or 10 acre-feet per year. For small irrigation registrations, the amounts 42,000 gallons per day by direct diversion or 20 acre-feet per year by storage.

Essentially, the processing of a registration for the Division of Water Rights is ministerial. The right is obtained by filing a registration that meets statutory requirements with the Board and then applying water to beneficial use.

"*Our job is to ensure that the statutory requirements are met*," said Ms. Heinrich. "*The Department of Fish and Wildlife has more discretion to impose custom conditions on particular registrations*."

The Board maintains a list of fully appropriated streams and registrations cannot be filed for a fully appropriated stream. Registrations are exempt from CEQA, and they are only effective for five years but they can be renewed.

The Board is required to prepare an annual report that compiles how much water has been appropriated under registrations. The water code says that the report is to describe also streams that the Board anticipates may become fully appropriated during the next reporting period; registrations filed on that stream are not effective immediately as the Board has to make an affirmative determination that water is available for appropriation under registrations on the stream. So when it's getting close to the point where the stream is fully appropriated, the process is not quite as automatic, she said.

Appropriative groundwater rights

Appropriative groundwater rights are analogous to appropriative rights for surface water. They are acquired through the actual pumping and use of water and are not limited to use on the

overlying land. Groundwater can be exported out of a watershed under an appropriative water right or exported away from the groundwater basin. They are not limited to non-native water; an appropriator can divert imported water as long as its abandoned, but if the importer imports the water and recharges the groundwater basin with it with the intent to recoup that water, then that's not considered abandoned and it's not available for appropriation. The same priority system applies: first in time, first in right. Appropriative rights to groundwater are subject to forfeiture for non-use.

"*The big difference is no permitting system*," said Ms. Heinrich. *"Now we have SGMA, so hopefully that will bring some regulation and better practices to groundwater use.*"

Pueblo rights

Pueblo rights are the highest priority rights that are held by the cities the seceded a historic Spanish or Mexican pueblo. There are only a handful of pueblos on California, so these type of rights rarely come up.

"If you are a city and you're lucky enough to be a successor to one of these historic pueblos, then you may have pueblo water rights which are paramount rights to whatever native surface or groundwater originated in the original pueblo," said Ms. Heinrich. *"The water can be used anywhere within the modern city's limits, but it is limited to whatever water was available within the pueblo.*"

Since pueblo rights are not based on actual diversion and use but instead are based on the city's interest in the pueblo, they are not subject to forfeiture or prescription. There have been two

confirmed pueblo water rights, which are held by the City of Los Angeles and the City of San Diego.

Ms. Heinrich noted that as she was preparing for this seminar, she took a look to see what other pueblos might be out there. "*San Jose, Santa Barbara, Monterey, San Francisco, and Sonoma are all on the site of a historic pueblo, but there was a procedure for filing claims a long time ago, and I don't know if they followed them and if they might have a claim to hold pueblo rights or not.*"

Prescriptive rights

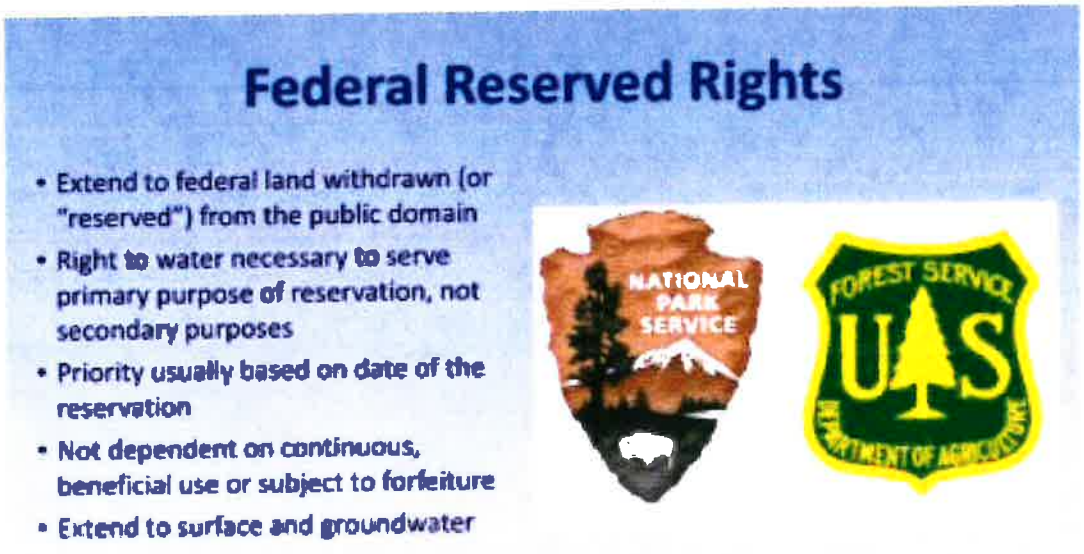
A prescriptive right is acquired by taking water to which another water right holder has a senior claim to you; this is analogous to adverse possession in property law. The elements for a prescriptive right are that you have to actually use the water, the use has to be open and notorious for a period of five years or more and the use has to be adverse and hostile to the other water right holder or water right holders.

Ms. Heinrich noted that the use needs to be continuous and uninterrupted for period a five years or more, but that doesn't mean that the adverse use has to be constant 24/7 year round. A prescriptive right can be acquired for a particular season, but the prescriptor has to be adversely using water during that season for a period of five years or more.

She acknowledged that it's really tricky in the groundwater context. "*In the surface water context, it's a little more straightforward; if you have a water right and suddenly the stream at your point of diversion dries up because somebody upstream with a junior water right is taking your water, it's pretty clear that their use is adverse,*" she said. "*In the groundwater context, it may not be clear that someone is taking water to which they are not entitled, so what the courts have held when this issue has come up is that the adversity element is satisfied when the basin goes into overdraft, and at that point, if you have juniors who are taking more than their fair share and driving the groundwater basin into overdraft, then the adversity element is satisfied.*"

Another important point about prescriptive water rights is that you can't prescript against the state. "*You can't get a prescriptive water right by diverting water for which a permit is required by diverting water without authorization,*" she said. "*So if you need a surface water permit in order to seasonally store water, you can't just seasonally store water and then say, I have a prescriptive right now. Not against the state, you don't. That's an important limitation.*"

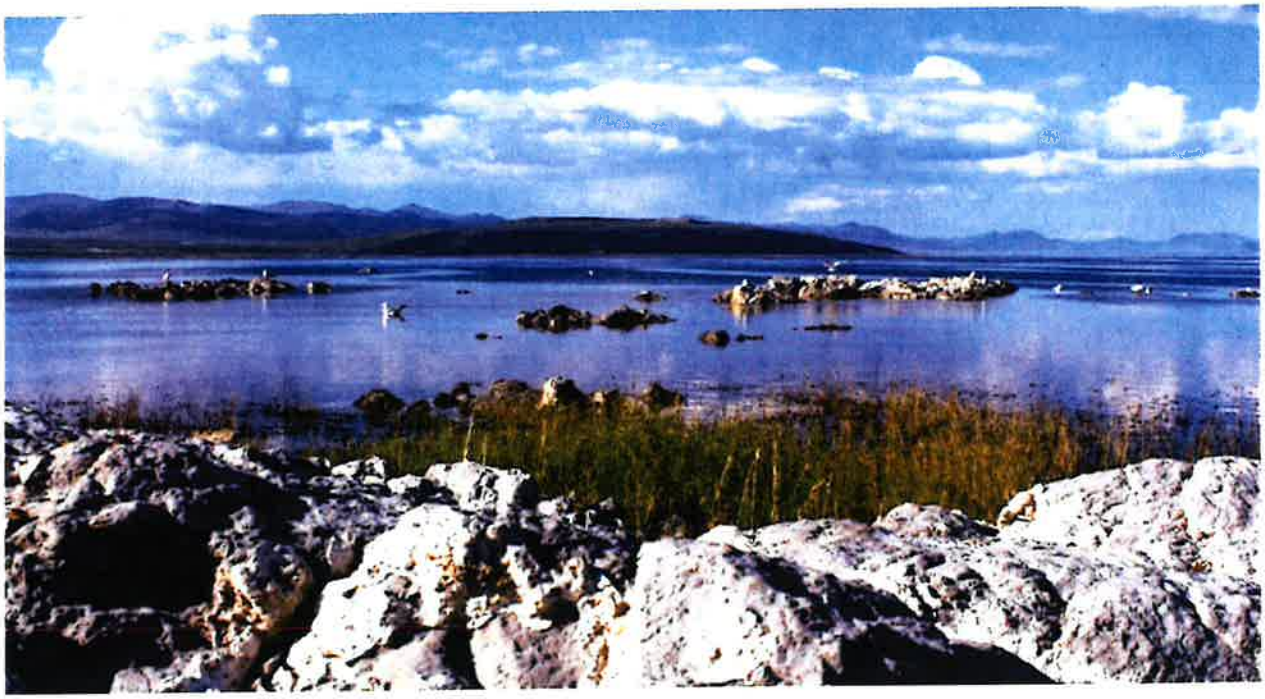
Federal reserved rights



Federal reserved rights extend to federal land that has been withdrawn or reserved from the public domain, such as forest service lands, national parks, and Indian reservations. Federal reserved rights are rights to serve the primary purpose of the reservation, but not secondary purposes.

If the State Water Board is called upon to adjudicate a reserved right, then regular state law needs to be followed to acquire those rights, Ms. Heinrich said. Priority is usually based on the date when the reservation was established; one possible exception is some Indian treaties recognize preexisting rights that the Tribe held that are actually senior in priority to the date when a tribal reservation was established.

Federal reserved water rights are not dependent on actual use so they're not subject to forfeiture, and they apply to both surface and groundwater.



THE PUBLIC TRUST DOCTRINE

The public trust doctrine is a common law doctrine that protects public trust uses of navigable water bodies which are navigation, commerce, fishing, recreation, and the preservation of fish and wildlife habitat. To determine whether a water body is navigable or not, there's a navigable in fact test: If you can put a recreational vessel at least part of the year on a water body, it's considered navigable, or in other words, if you can kayak it, it's navigable.

The National Audubon Society versus the Superior Court Case in 1983 was a challenge to the Los Angeles Department of Water and Power's diversions from four streams that were tributaries to Mono Lake, a terminal lake on the east side of the Sierra mountains. The licenses were long-standing and had a priority date back in the 40s. The licenses authorized LADWP to basically appropriate all the water from those four tributaries, and over the course of a couple of decades, they had drawn down the lake by more than 40 feet. The lake supports brine shrimp and provided nesting habitat for migratory birds, so LA DWP's appropriations were threatening the ecosystem of the lake and recreation around the lake as well as air quality.

The court held that the public trust doctrine applies to non-navigable water bodies to the extent that a diversion from those water bodies impacts navigable water bodies. Mono Lake was navigable. The streams that LA DWP was diverting from were not considered navigable, but nonetheless the public trust doctrine applied to their diversions.

"*The Court held that the Water Board has a duty to consider public trust in making allocation decisions to protect the public trust where feasible and in the public interest,*" said Ms. Heinrich. "*So the water board doesn't have to afford perfect and absolute protection; it can actually authorize appropriations that do harm to public trust resources, but the Board has to*

consider it and balance the public trust values against the other public interests in the appropriation."

After that case was decided, the water board reopened LA DWP's licenses, held a hearing, balanced the competing needs for water, and cutback on LA DWP's diversions, required them to curtail to the extent necessary to restore the lake to a particular level and maintain that level in order to afford reasonable protections to the public trust resources of Mono Lake.

Ms. Heinrich also noted a 2018 court case affirmed that the public trust doctrine also applies to interconnected groundwater, even percolating groundwater, so just like a non-navigable surface water body, if groundwater pumping is impacting a navigable water body, then the public trust doctrine does apply to that groundwater pumping.

WASTE AND UNREASONABLE USE DOCTRINE

The waste and unreasonable use doctrine is embodied in both the California Constitution and the water code that prohibits against the waste, unreasonable method of diversion, unreasonable method of use or unreasonable method of diversion of water. The doctrine applies to all water use, surface and groundwater, under any type of water right. There's no definition of what is reasonable; it's a fact-specific determination and it can change over time. For instance, in a time of plenty, an irrigation practice might be considered reasonable but as the demand increases, that irrigation practice may no longer be considered reasonable.

The Board is charged with taking all appropriate actions to prevent the waste or unreasonable use of water, and the Board has exercised this authority in a variety of ways. One example is back in the 1980s, the Board issued orders to the Imperial Irrigation District after they determined that their irrigation practices were wasteful and unreasonable because excessive runoff was causing flooding. That ultimately led to a number of conserved water transfers where Metropolitan Water District of Southern California and San Diego County Water Authority, and to a lesser

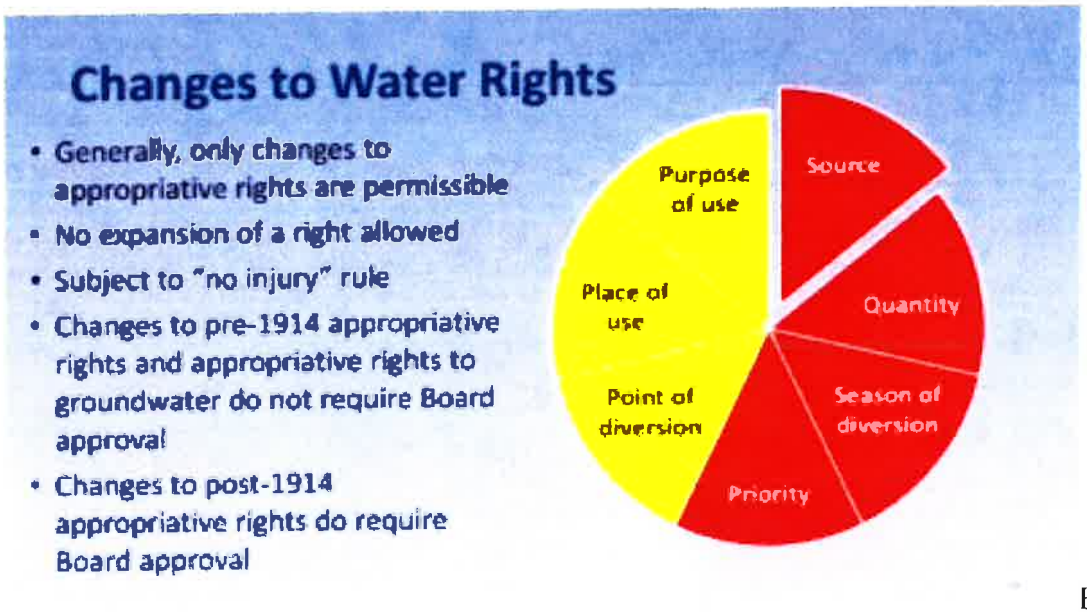
extent, Coachella Valley District, all paid for conserved water transfers, so the proceeds of selling the water paid Imperial Irrigation District to implement conservation measures to free up the water for sale to the urban areas.

Another example of the Board's exercise of its waste and unreasonable use authority was on the Russian River where the Board adopted a regulation that applied to all diverters in the Russian River watershed that divert water for frost protection. Due to the instantaneous water demand for frost protection, there were some stranding events that killed endangered salmonids, so the regulation basically found that that was not reasonable when there were alternatives and diversions could be coordinated or alternative methods of frost control could be employed to avoid stranding.

A final example is during the drought, the drought emergency regulations that the Board adopted requiring water conservation that said that certain practices during the drought emergency were unreasonable, such as washing down driveways and sidewalks with potable water.

CHANGES TO WATER RIGHTS

There are instances when a water right holder may want to make changes to the way in which they exercise their water right, or they may want to transfer water which requires changes in the parameters of their water right. Generally speaking, because riparian rights and overlying rights are limited to riparian or overlying land, those rights can't be changed. Those water right holders can change their point of diversion and they can change their purpose of use, but generally speaking they can't transfer the water because it has to be used on that land.



However, some components of appropriative rights can be changed which are shown in red on the slide.

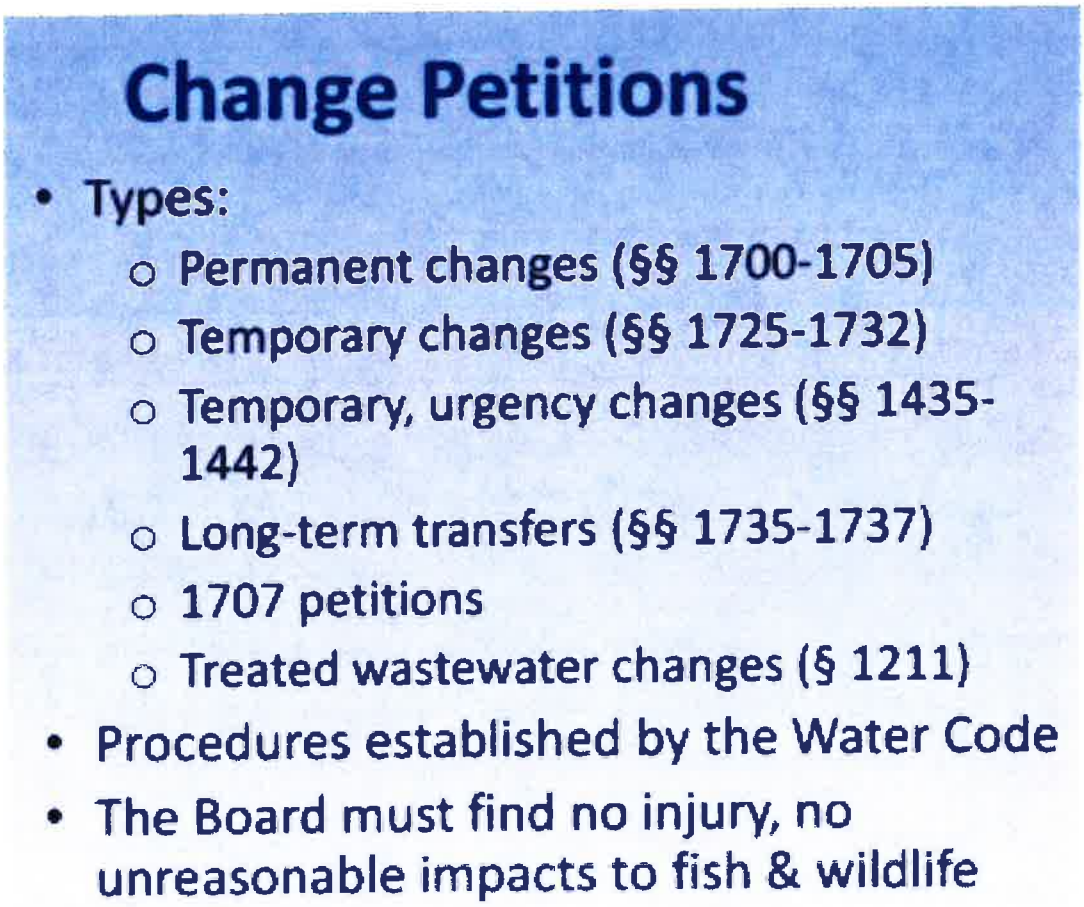
"*There's a fundamental rule that you can't, through a change, expand your water right*," Ms. Heinrich said. "*You can't change the source, you can't increase the quantity, you can't expand your season of diversion, and with possible exception, if you acquire a prescriptive right as against somebody else, your priority might change, but generally speaking, your priority can't change either.*"

An appropriative water right holder can change the point of diversion, place of use, purpose of use, or other permit terms and conditions with certain limitations, the most significant of which is the no injury rule which means that the change can't result in an adverse impact to another legal user of water. Legal users of water are not just senior water right holders; the no injury rule also protects junior water right holders because relative to them, your change is junior. It also protects contractors who are considered legal users also for purposes of the no injury rule.

Changing the point of diversion can be straightforward sometimes and very tricky in others. "*For instance, you can move upstream onto a tributary so long as there's hydraulic continuity between your old point of diversion and the tributary, and you're not taking water that would otherwise be unavailable to you at your old point of diversion*," she explained. "*So generally moving upstream, as long as there's hydraulic continuity, is okay. Same as downstream, if you do the accounting and you're not taking advantage of say, a tributary that comes in between and is supplying more water than you would have available above that confluence of that tributary, for instance. ... In most cases, it's going to be pretty straightforward because somebody's going to want to move their diversion and it's not going to be very far from the original point of diversion, but the farther afield they go, so to speak, the more difficult the question.*"

She also noted that pre-1914 appropriative rights can be changed, subject to the no injury rule. For post-1914 appropriative rights which are permit or licensed rights, approval from the water board is needed.

Change petitions



There are a number of different types of change petitions. There are both short-term and long-term change petitions and the procedures vary, depending on the type of change that it is. There are more streamlined procedures for evaluating temporary changes or temporary urgency changes.

For temporary changes, there's a CEQA exemption, although there isn't one for temporary urgency changes, but for temporary changes, the change is limited to water that would otherwise be consumptively used or stored in the absence of the change, she said.

There is a petition process for changes in the discharge of treated wastewater which are processed by the Division of Water Rights. 1707 petitions are a unique type of petition whereby any type of water right holder including a riparian right holder can dedicate water to instream beneficial use. And generally speaking, for all petitions, the Board has to find that there would be no injury to other legal users of water and no unreasonable impacts to fish and wildlife.

Aerial view looking South along Old River, photo by Ken James / DWR

ENFORCEMENT AUTHORITY

In terms of the Board's enforcement authority, the Board can issue Administrative Cease and Desist orders which order a diverter to cease or desist from an unlawful activity. Those can be issued in response to the prohibition against unauthorized diversion and use of water such as someone is diverting water without a permit and they need one, for any term or condition of a permit, license, registration, or certificate, board orders or decisions, board regulations, SGMA requirements, and certain requirements that apply to cannabis cultivation.

The Board can also issue Administrative Civil Liability (or ACLs) which are administrative penalties that can be issued for basically the same list of violations. The maximum penalty is $1000 a day for violating a cease and desist order and $500 a day for most other violations, but Ms. Heinrich noted there are a lot of exceptions to that, including exceptions for violations that occur during drought periods, and the exceptions are too numerous to list here.

"*The Board may be called upon to evaluate the validity of a riparian right or a pre-1914 appropriative right*," she said. "*Often, if somebody is diverting without a permit and there's an inspection or there's a complaint, the diverter will say, 'I'm riparian' or 'I have a pre-1914 appropriative right', and that's when the water board may be called upon to evaluate the validity of that claim. The Board's authority to do so has been affirmed in several recent court cases.*"

San Gregorio Creek, Photo by CDFW

STATUTORY STREAM ADJUDICATIONS

The procedures for statutory stream adjudications are laid out in the water code. A statutory stream adjudication has to be initiated by a petition from a claimant; the Water Board can't decide on its own that it wants to adjudicate a particular stream system. If the Water Board does receive a petition, the Board can do a preliminary investigation and decide to conduct the adjudication or not.

In a statutory stream adjudication, all the water rights to a stream are determined – not just post-1914 appropriative rights, but the riparian rights, the pre-1914 appropriative rights, the federal reserved rights, and whatever else might be out there. It does not include interconnected groundwater, except for the Scott River, because it has a special statutory exception.

The process begins on the administrative side with a proceeding conducted by the Board and culminates in a court decree. The basic procedure is that the Board conducts an investigation and prepares a preliminary order of determination; there may be a hearing on objections to the preliminary report and order of determination; then the Board issues it's final order of determination which is then submitted to the Court. The Court holds its own hearing then ultimately issues a decree.

"*The good thing about statutory stream adjudications is they bring certainty*," said Ms. Heinrich. "*Now everybody knows for those rights that aren't permitted or licensed whether they are valid or not and the extent of those rights, but they can also be very time consuming expensive, although the Board can recoup its expenses from the claimants*."

The priority of unexercised riparian rights can be subordinated as part of a statutory stream adjudication.

The most recent statutory stream adjudication was the San Gregorio Creek stream system in 1993, which is a coastal stream south of San Francisco, but there is a pending petition to adjudicate the Fresno River, which the Division is currently considering taking up.

DWR Scientist Uses COVID-19 Diagnostic Testing Technology to Help Protect Endangered Fish Species

Published: May 29, 2020

A scientist within the Department of Water Resources' (DWR) Division of Environmental Services (DES) has found a way to use gene-editing technology, most recently used for COVID-19 diagnostic testing, for ecological monitoring of threatened fish.

"I believe this technology will transform how we accurately identify species, subspecies, or even finer-scale taxonomic levels," said Dr. Melinda Baerwald, DWR scientist and study project manager. "This new technology will enable DWR to accurately identify threatened species in almost real-time."

The Clustered Regularly Interspaced Short Palindromic Repeats technology, or CRISPR for short, has been around since the 1990s and has been used to accurately identify specific DNA sequences and break them apart for gene-editing.

The CRISPR-based detection platform SHERLOCK (Specific High-sensitivity Enzymatic Reporter Unlocking) was recently authorized by the FDA to be used to try and figure out who is infected with the novel coronavirus.

"In the past, CRISPR has been used for human disease testing like Dengue, Zika, and COVID, but after some investigating, I realized the potential this sort of technology could have for ecological monitoring as well," said Baerwald. "Our study is the first to use SHERLOCK in an ecological context."

This current DWR study uses CRISPR-based SHERLOCK technology to pull DNA from mucus swabs of fish to determine the exact species of fish.

"We collect mucus through non-invasive swabbing techniques," Baerwald said. "Then we use the DNA in the mucus to identify species (and other levels of genetic differentiation between Chinook Salmon and Smelt run types) with high accuracy and high speed."

CRISPR-based SHERLOCK technology will allow quicker decision making at the state and federal pumping projects that deliver water to millions of Californians. Staff will now be able to determine if endangered fish species are ever entrained - swept along with the flow - by project operations.

"Pumps need to be reduced if endangered species such as winter-run Chinook Salmon or Delta Smelt are entrained. It is impossible to visually determine whether an entrained salmon or smelt belongs to an endangered run type, but a SHERLOCK test would allow operators to know within minutes," Baerwald said.

SHERLOCK can provide results within 20 minutes and be deployed in the field with either a handheld fluorescence reader or with a lateral flow strip that works like a pregnancy test, showing a band on the strip if the target species is present.

Baerwald has been actively working on the CRISPR-based SHERLOCK study since 2018, and her findings were recently published in the journal of Molecular Ecology Resources . The study was funded by DWR and is a collaborative effort with the Genomic Variation Laboratory (GVL) at UC Davis and the MIT Broad Institute.

Our Region's Trusted Water Leader
San Diego County Water Authority

May 20, 2020

Attention: Board of Directors

Resolution Regarding Potential Detachment (Action)

Staff Recommendation
Adopt Resolution No. 2020-___ regarding potential detachment by the Fallbrook Public Utilities District ("**Fallbrook**") and the Rainbow Municipal Water District ("**Rainbow**").

Alternative
Do not adopt Resolution No. 2020-___.

Fiscal Impact
The Resolution itself (Attachment 1) is a position statement on detachment, and thus on its own does not create a fiscal impact. However, there are fiscal impacts to detachment.

Executive Summary:

That the Water Authority Board resolve as follows:

1. Given the significant and unprecedented nature of the proposed detachments, and in order to protect ratepayers in Rainbow, Fallbrook, and the remainder of the Water Authority's service area, the Water Authority recommends that San Diego LAFCO conduct a comprehensive evaluation of the impacts of the detachment proposals, including financial, water supply reliability, governmental, and environmental impacts, and ensure that the public and all affected agencies have a meaningful and balanced opportunity to engage in the evaluation process.

2. Given the Water Authority's obligation to provide an adequate, reliable, and affordable source of water for all of San Diego County, the Water Authority will oppose detachment by Rainbow and Fallbrook unless:

a. It can be determined by what means Rainbow and Fallbrook can guarantee that all obligations as promised to their own ratepayers are met;

b. It can be demonstrated that detachment will not adversely affect other Water Authority member agencies and San Diego County as a region financially or environmentally;

c. It can be demonstrated that detachment and then annexation into Riverside County's Eastern Municipal Water District will not increase reliance on the Bay-Delta; and

d. It can be demonstrated that detachment will not result in a diminution of the Water Authority's voting power at MWD to represent the interests of all San Diego County ratepayers and property owners.

Overview

The San Diego County Water Authority ("**Water Authority**") is a county water authority and a local agency established in 1944 under the County Water Authority Act, that has provided water to its member agencies throughout San Diego County since World War II.

Fallbrook Public Utilities District ("**Fallbrook**") was a founding member agency of the Water Authority in 1944 and has remained a member since that time. Rainbow Municipal Water District ("**Rainbow**") has been a member agency of the Water Authority since 1954.

Fallbrook and Rainbow have filed applications with the San Diego County Local Agency Formation Commission ("**San Diego LAFCO**") for change in organization seeking detachment from the Water Authority and annexation into Riverside County's Eastern Municipal Water District ("**Eastern**"). This type of LAFCO detachment is unprecedented in San Diego County. The full anticipated process will require significant analysis, a vote of the LAFCO Commission, and potentially a popular vote. Attachment 2 provides an overview of the LAFCO process.

Fallbrook and Rainbow have publicly promised to their own ratepayers that a detachment would provide their customers with better service, including lower rates and equivalent reliability. However, the proposed detachments could have significant impacts on the reliability and cost of water for users in Fallbrook and Rainbow and throughout the County of San Diego. Detachment may also have other adverse effects including environmental impacts and regional governance issues. In order to protect Rainbow and Fallbrook's ratepayers and property owners, and other water users throughout San Diego County, a comprehensive evaluation should be performed by San Diego LAFCO to fairly assess and disclose to the public and decision makers the potential impacts of any detachments. Some of the critical issues in evaluating the detachment proposals are described below.

1. Achieving a Reliable and Affordable Water Supply for San Diego County

The County Water Authority Act requires the Water Authority, as far as practicable, to provide each of the Water Authority's member agencies with adequate supplies of water to meet their expanding and increasing needs.

In 1990 the Water Authority imported more than 95% of San Diego County's water supply from the Metropolitan Water District of Southern California ("**MWD**"). In 1991, MWD cut water deliveries to the Water Authority by about 31% overall (it later ordered a 50% cutback in March 1991, including a 90% cutback to agricultural water deliveries which was only avoided as a result of the "March Miracle" rainfall). MWD cutbacks had major financial impacts on San Diego County's then-2.5 million residents (now 3.3 million) and regional economy, including its agricultural sector, which avoided devastation in 1991 only by the vote of the Water Authority's Board to share the available water supply within San Diego County between urban and agricultural uses.

To prevent the recurrence of economic harm caused by an unreliable water supply, the Water Authority has made strategic long-term investments to diversify San Diego County's water sources and reduce its dependence on imports from MWD in order to provide reliable and

affordable supplies of water to meet all member agencies' needs. This diversification is in accord with statewide goals and objectives, and has solidified San Diego County's water supply reliability.

A wide range of San Diego authorities have repeatedly recognized the importance of a diversified and reliable water supply to our County's residents and economy. SANDAG's 2008 *Regional Economic Prosperity Strategy* identified as one of its 10 strategic goals "Provide an adequate supply of water from a diverse portfolio and ensure it is delivered in a timely, reliable and competitively priced manner." The San Diego County Grand Jury's May 15, 2013 report *Reduce Dependence on Imported Water* recommended that the Water Authority "Continue to pursue a vigorous policy to lessen dependence on imported [i.e. MWD] water by continued conservation, reuse and reclamation, additional emergency storage projects and new desalination projects with an ultimate goal of sustainable and reliable water independence for the County."

The San Diego Regional Economic Development Corporation in its publication *The Importance of Water Reliability to San Diego's Economy* recognized the Water Authority's successful efforts toward water independence for the County, concluding that the Water Authority's "[d]iversification efforts over the past two decades have helped the San Diego region significantly reduce its reliance on Metropolitan Water District from 95% in 1991 to 40% [in 2018], and a projected 11% in 2020 and 2% by 2035."

2. Reducing Bay-Delta Impacts

The State of California has declared in its California Water Plan that a long-term reliable supply of water is essential to protect and enhance California's natural resources and economy. Longstanding conflicts surrounding the availability and delivery of water from Northern California's environmentally sensitive Bay-Delta to Central and Southern California are yet to be resolved. Governor Newsom recently took issue with the "twin tunnels" long advocated by MWD in his Executive Order calling for a single tunnel and "water resiliency." Executive Order N-10-19 (April 29, 2019).

By its Delta Reform Act of 2009, including the portion codified at Water Code § 85021, the State of California established that it is state policy to reduce reliance on the Delta and the State requires that each region that depends on Delta water "shall improve its regional self-reliance for water through investment in water use efficiency, water recycling, advanced water technologies, local and regional water supply projects, and improved regional coordination of local and regional water supply efforts."

For nearly three decades, the Water Authority and its 24 member agencies have worked to successfully increase San Diego County's regional self-reliance and reduce its dependence on the Bay-Delta. It has done so by making a series of investments in water use efficiency on farms in the Imperial Valley, by conserving water through the lining of the All-American and Coachella water canals, and by developing a seawater desalination facility in Carlsbad. All member agencies benefit from these investments.

3. Investments and Indebtedness Incurred to Provide a Reliable Water Supply

Pursuant to its power under the County Water Authority Act, the Water Authority has incurred long-term bonded and other indebtedness in order to make the critical water supply and infrastructure investments necessary to meet the projected baseline water demands of all 24 of its member agencies. Those investments were made to reliably meet all of San Diego County's baseline water supply needs, with the active engagement by all member agencies (including Rainbow and Fallbrook) for their long-term benefit. Financial impacts resulting from the potential detachments may be significant and must be fully evaluated to ensure that the interests of Fallbrook and Rainbow customers and property owners, and the rest of San Diego County's water users and property owners, are protected.

4. Voting Rights at MWD

The Water Authority has significant voting rights as a member of MWD, allowing it to represent the interests of San Diego County on the MWD board with a strong and unified voice.

The detachment of Rainbow and Fallbrook from the Water Authority and concurrent annexation into Eastern would reduce the Water Authority's voting rights at MWD, and increase Eastern's voting rights at MWD, thus allowing Riverside County to have a disproportionate vote on MWD's water rates, property taxes and other policies affecting all San Diego County residents and property owners.

5. Rainbow/Fallbrook Detachment Proposal

Currently as member agencies, Fallbrook and Rainbow receive full water service from the Water Authority, including the benefits of the Water Authority's highly reliable water portfolio and storage facilities.

Fallbrook and Rainbow propose annexing into Eastern in a highly unusual and limited manner, whereby they would not have any access to Eastern's storage, water rights, or infrastructure system, but instead would use Eastern merely as a pass-through entity, paying $11 an acre-foot surcharge in addition to the MWD wholesale rates for the right to water from MWD. This approach will result in Rainbow and Fallbrook's customers being completely dependent on MWD's imported water.

By detaching from the Water Authority, Rainbow and Fallbrook ultimately risk paying more for a less reliable water supply, and risk violating state law, because MWD water provided by Eastern is more dependent on Bay-Delta water supply, and state water law requires reducing dependence on the Bay-Delta as a water supply source.

The Water Authority's member agencies pay the costs of its highly reliable water supplies, including all of the Water Authority's bonded and other indebtedness, through the various rates, fees, and charges, both fixed and variable, as determined from time to time by the Water Authority's Board of Directors. Fallbrook and Rainbow propose detaching from the Water Authority and annexing into Eastern without the benefit of any of the water supply acquired to meet their customers' needs, or payment to the Water Authority for the costs incurred to provide it.

Recommendation
Because of the significant and unprecedented impacts that the detachment of Rainbow and Fallbrook may have on water users and property owners throughout San Diego County, the General Manager and General Counsel recommend that the Water Authority Board approve the Attachment 1 Resolution, which resolves as stated in the above Executive Summary.

Prepared by: Water Authority Staff

Approved by: Mark J. Hattam, General Counsel
Sandra L. Kerl, General Manager

Attachments:

1. Proposed Resolution No. 2020-__
2. Overview of LAFCO Process

Attachment 1

RESOLUTION NO. 2020-_____

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE SAN DIEGO COUNTY WATER AUTHORITY ADDRESSING POTENTIAL DETACHMENT OF FALLBROOK PUBLIC UTILITIES DISTRICT AND RAINBOW MUNICIPAL WATER DISTRICT AND ANNEXATION OF THOSE DISTRICTS INTO EASTERN MUNICIPAL WATER DISTRICT

The San Diego County Water Authority ("**Water Authority**") is a county water authority established in 1944 under the County Water Authority Act ("**Act**"), that has provided water to its member agencies throughout San Diego County since World War II.

The Fallbrook Public Utilities District ("**Fallbrook**") was a founding member agency of the Water Authority in 1944 and Rainbow Municipal Water District ("**Rainbow**") has been a member agency of the Water Authority since 1954.

In March 2020, Fallbrook and Rainbow filed applications with the San Diego County Local Agency Formation Commission ("**San Diego LAFCO**") seeking detachment from the Water Authority and annexation into Riverside County's Eastern Municipal Water District.

The proposed detachment will affect water users and ratepayers in Fallbrook and Rainbow, as well as other member agencies and their ratepayers throughout the County of San Diego.

NOW, THEREFORE, the Board of Directors of the San Diego County Water Authority resolves the following:

1. Given the significant and unprecedented nature of the proposed detachments, and in order to protect ratepayers in Rainbow, Fallbrook, and the remainder of the Water Authority's service area, the Water Authority recommends that San Diego LAFCO conduct a comprehensive evaluation of the impacts of the detachment proposals, including financial, water supply reliability, governmental, and environmental impacts, and ensure that the public and all affected agencies have a meaningful and balanced opportunity to engage in the evaluation process.

2. Given the Water Authority's obligation to provide an adequate, reliable, and affordable source of water for all of San Diego County, the Water Authority will oppose detachment by Rainbow and Fallbrook unless:

a. It can be determined by what means Rainbow and Fallbrook can guarantee that all obligations as promised to their own ratepayers are met;

b. It can be demonstrated that detachment will not adversely affect other Water Authority member agencies and San Diego County as a region financially or environmentally;

c. It can be demonstrated that detachment and then annexation into Riverside County's Eastern Municipal Water District will not increase reliance on the Bay-Delta; and

d. It can be demonstrated that detachment will not result in a diminution of the Water Authority's voting power at MWD to represent the interests of all San Diego County ratepayers and property owners.

PASSED, APPROVED, and ADOPTED this 28th day of May, 2020 by the following vote:

Unless noted below all Directors voted aye.

_____
Jim Madaffer, Chair

ATTEST:

_____
Christy Guerin, Secretary

I, Melinda Nelson, Clerk of the Board of the San Diego County Water Authority, certify that the vote shown above is correct and this Resolution No. 2020- _____was duly adopted at the meeting of the Board of Directors on the date stated above.

_____
Melinda Nelson, Clerk of the Board

Attachment 2 - Overview of LAFCO Process

There are various procedural and legal issues regarding detachment as to which the Board and public should be made aware. This Memorandum provides an overview of some of these issues that can be discussed in public, and are without waiver of closed session and/or attorney-client privileged and work product communications. However, some of these issues are fairly complex, and it is expected they will be addressed in further detail in the San Diego Local Agency Formation Commission ("San Diego LAFCO") review process.

A. General Background

The Water Authority is a county water authority and a local agency established in 1944 and providing water to member agencies throughout San Diego County since World War II. Fallbrook Public Utilities District ("Fallbrook") was a founding member of the Water Authority, and has been a member since 1944. Rainbow Municipal Water District ("Rainbow") joined the Water Authority in 1954.

The Water Authority has member agencies which choose representatives to sit on the Water Authority's Board and govern the actions of the Water Authority, resulting in coordinated water policy and benefits for the San Diego County region. Over many decades the Water Authority, by collective decisions of its appointed Board of Directors (which Board includes Fallbrook and Rainbow representatives), has constructed and maintained extensive pipelines, dams, treatment facilities, and other significant infrastructure to serve the critical water needs of San Diego County's 3.3 million population and its $245-billion regional economy, and has also obligated itself on long-term water supply contracts. To perform these tasks the Water Authority has incurred and has outstanding, bonded and other indebtedness ("Water Authority Bonded and Other Indebtedness").

Beginning in at least Fall of 2018, Rainbow and Fallbrook started to plan to detach from the Water Authority and annex into Riverside County's Eastern Municipal Water District ("Eastern"). Together the detachment and annexation proposals of both Rainbow and Fallbrook are referred to as the "Reorganization" proposal. By January of 2019, Rainbow and Fallbrook initiated discussions with the San Diego LAFCO and the Riverside County Local Agency Formation Commission ("Riverside LAFCO") regarding the Reorganization proposal. During this period the Water Authority was not informed of what was occurring.

In May 2019, the General Manager of Rainbow informed the then-Acting General Manager of the Water Authority that Rainbow and Fallbrook were seeking to detach from the Water Authority, and intended to conduct parallel processes with San Diego LAFCO (for the detachments from the Water Authority) and Riverside LAFCO (for the annexations to Eastern). After receiving this information, the Water Authority staff advised the Board and then made Public Records Act requests to each of the affected agencies to obtain relevant materials. Those materials were produced in late June 2019 and showed the lengthy planning of Eastern, Fallbrook, and Rainbow.

In August of 2019, the Water Authority requested that all LAFCO action be consolidated at the San Diego LAFCO in order to improve coordination, efficiency, and to maintain local control of decisions in San Diego County. The San Diego LAFCO and Riverside LAFCO agreed to a

Memorandum of Understanding vesting exclusive jurisdiction to control the reorganization in the San Diego LAFCO in October of 2019. At that time, Eastern, Rainbow, and Fallbrook entered into their own Memorandum of Understanding to formalize the planning process and general terms for consideration regarding the annexation of Rainbow and Fallbrook into Eastern. In November of 2019, the Water Authority adopted Resolution 2019-19 authorizing staff to apply to San Diego LAFCO to seek exemption from certain LAFCO protest processes, and to request a county-wide election condition in the event the Reorganization were to be approved by San Diego LAFCO.

In December of 2019, Rainbow and Fallbrook authorized their respective General Managers to apply for detachment from the Water Authority and annexation into Eastern, and approved Notices of Exemption from the California Environmental Quality Act ("CEQA") for those applications. In January of 2020, Otay Water District commenced litigation against Rainbow and Fallbrook alleging CEQA violations for failing to undertake an analysis of the potential environmental impacts of the detachments. These lawsuits were settled in March 2020 by consensual stipulation and with a (pending) court order that other agencies such as San Diego LAFCO could not rely on the Notices of Exemption filed by Fallbrook and Rainbow.

Rainbow and Fallbrook each submitted their LAFCO applications in late March 2020. The Water Authority received notice of these applications on March 25, 2020, and submitted the letter applications authorized by Resolution 2019-19 on April 2, 2020. San Diego LAFCO held an initial hearing on May 4, 2020, and approved the Water Authority's application to be exempt from certain LAFCO protest processes.

B. The LAFCO Process

The State of California established LAFCOs in each county to regulate local government boundaries within their county. The San Diego LAFCO has exclusive jurisdiction to handle Rainbow and Fallbrook's detachment application, and by agreement with the Riverside LAFCO will also process the application for annexation into Eastern and the related amendments to each agency's sphere of influence. The process for detachment and annexation, referred to collectively as a "Reorganization," is governed primarily by the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (the "LAFCO Act") and by the County Water Authority Act ("CWA Act"), as addressed below.

The LAFCO Act requires two sets of proceedings to effectuate a Reorganization: Commission Proceedings (undertaken by the LAFCO) and Authority Proceedings (a local area vote undertaken by the potentially reorganizing entity). Commission Proceedings are always undertaken pursuant to the LAFCO Act. For most public agencies, Authority Proceedings are also undertaken under the LAFCO Act. However, certain entities – including the Water Authority – may apply to have the Authority Proceedings conducted pursuant to the entity's principal act. In November of 2019, the Water Authority's Board of Directors adopted Resolution 2019-19 authorizing the application to San Diego LAFCO to have the Authority Proceedings conducted pursuant to the CWA Act.

Commission Proceedings

The Commission Proceedings are the heart of the LAFCO's evaluation of the Reorganization proposal. To begin the Commission Proceedings, the entity seeking detachment adopts a resolution of application setting forth the proposal. Rainbow and Fallbrook each adopted a resolution of application in December 2019. Following adoption of the resolution, applicants submit the application to the San Diego LAFCO, and pay the associated fees. Rainbow and Fallbrook submitted their applications in March 2020.

Upon receipt of an application, the Executive Officer of the LAFCO must determine whether the application is complete and acceptable for filing. Once the application is deemed complete, a certificate of filing is issued, which triggers a requirement that a LAFCO hearing be held.

LAFCO will independently review the proposal. LAFCO staff will prepare a report and recommendation, and hold a public hearing before voting on the application. LAFCO can disapprove the proposal, or approve the application with or without amendment, wholly, partially, or conditionally, in a manner consistent with its written policies, procedures, and guidelines. (Cal. Gov. Code § 56375(a)(1).) A LAFCO retains considerable discretion in imposing conditions on the approval of detachment.

Because of the complexity and lack of precedent for a detachment of two agencies and a move into an entirely different county with a corresponding change of wholesale water suppliers, the San Diego LAFCO should seek the advice of qualified neutral expert consultants in areas such as water reliability, water rates, water infrastructure engineering, Bay-Delta and Colorado River water issues, and other appropriate fields to fully examine the merit, or lack of merit, of the sought detachment. Such costs are normally paid by the applicants, and that should be the case here.

It is important that the Water Authority and other affected public agencies, cities, and districts weigh in at San Diego LAFCO during the Commission Proceedings as to their positions on detachment. This is because the LAFCO statutes specify the importance of such positions (emphases added):

> "Factors to be considered in the review of a proposal shall include, but not be limited to, all of the following: . . . (b) the present cost and adequacy of governmental services and controls in the area; (c) the effect of the proposed action . . . on the local governmental structure of the county . . . .; (j) *the comments of any affected local agency or other public agency* . . . ." Government Code section 56668.
>
> "If the proposed change of organization or reorganization includes a city detachment or district annexation [here there is a district annexation] . . . , factors to be considered by the commission shall include all of the following: . . . (4) *any resolution raising objections to the action that is filed by a city or a district*. . . . (5)(b) *The commission shall give great weight to any resolution raising objections to the action that is filed by a city or a district*. The commission's consideration shall be based only on financial or service-related concerns expressed in the protest." Government Code section 56668.3.

If San Diego LAFCO approves the Reorganization, affected parties can seek reconsideration of the LAFCO decision by filing a written request within 30 days. LAFCO can either modify its resolution or take no action. Following the finalization of the Commission Proceedings, the Reorganization is then put either to an affirmative vote, or a protest vote of the affected electors.

One question that arises, if a detachment were to be approved, is whether affected electors should be only the electors within Rainbow and Fallbrook's jurisdictions, or whether all electors within the Water Authority's jurisdiction should have a say in this matter, since they will all be affected. The Water Authority Board has requested the latter. San Diego LAFCO will make that determination, as well as whether detachment should occur at all and potentially other conditions for detachment, during the Commission Proceedings.

Authority Proceedings

Within 10 days after notification and the initial application were complete, the Water Authority was allowed to apply to San Diego LAFCO to have Authority Proceedings conducted pursuant to the CWA Act. The Water Authority submitted its application on April 2, 2020. The LAFCO Commission approved that application on May 4, 2020.

Under the CWA Act's Authority Proceedings, and depending on approval and subject to conditions imposed by San Diego LAFCO during the Commission proceedings, a member agency seeking detachment (called "exclusion" in the CWA Act) submits the question of detachment to its electors in an election. (Cal. Water Code App. § 45-11(a)(2).) If the proposition is approved by a majority of votes cast by the electors, then the agency's board certifies the vote to the board of the Water Authority. (*Ibid.*) The secretary of the board for the Water Authority files a certificate of the proceeding with the Secretary of State. Once the certificate is filed, and assuming all conditions imposed by San Diego LAFCO during Commission proceedings were satisfied, the detaching agency would no longer be part of the Water Authority.

Future Timeline

Based on rough estimates received from San Diego LAFCO's Executive Officer, the following would be the general anticipated timeline for the LAFCO proceeding absent COVID-19 delays:

May 2020 through April 2021 - LAFCO Administrative Reviews of the applications, including financial and service implications. Outside consultants will likely be used to provide analysis.

May 2021 - Certificate of Filings issued to Rainbow and Fallbrook once the administrative review is complete. These documents attest the applications are complete and the Commission must hold hearings within 90 days under statute.

June 2021 - LAFCO Hearings on Proposals. LAFCO Staff intends to hold concurrent, dual hearings on both proposals. If Proposals are denied, matters concluded. If they are approved with conditions, those conditions must be satisfied.

November 2021 (or later) – If there were an approval, within 88 days of any Commission approvals, LAFCO would need to work with the County of San Diego ROV to schedule one or more elections involving the affected territory as defined by the Commission.

C. **Legal Issues Regarding Detachment**

There are various legal issues that may be implicated by this detachment proceeding, since it is without precedent. It is expected that there will be detailed legal briefings at LAFCO on all such issues. We just provide a short general summary of a few of these items here.

One issue that may arise is the interplay between the CWA Act and the LAFCO Act. In e-mails produced by Rainbow pursuant to Public Records Act requests, it is clear that Rainbow initially took the position that San Diego LAFCO had no role in the detachment process at all.[1] However, San Diego LAFCO stated that it did have a decisional role under the LAFCO Act, and it appears that Rainbow and Fallbrook have now acquiesced to that position, because they both filed detachment applications at San Diego LAFCO.

It is unclear where the precise overlaps will and will not occur between the LAFCO Act and the CWA Act. Fundamentally, the Legislature has given LAFCO's wide discretion to approve or disapprove reorganizations, and to impose numerous conditions on a reorganization.[2] How the San Diego LAFCO chooses to exercise its authority will be determined in the LAFCO proceedings.

If detachment were to be approved, the precise scope and apportionment of financial obligations is uncertain. San Diego LAFCO itself has broad authority to impose various financial conditions (*supra*). However, the meaning of certain language in the CWA Act may be disputed. The CWA Act specifies that once an agency is excluded from the Water Authority, "the taxable property within the excluded area shall continue to be taxable by the [Water Authority] for the purpose of paying the bonded or other indebtedness of the [Water Authority] outstanding or contracted for at the time of the exclusion and until the bonded or other indebtedness has been satisfied." (*Ibid.*) Fallbrook and Rainbow have asserted in various materials that this text is very narrow and would exclude revenue bonds and many other obligations. The Water Authority believes the text is much broader than that, and is more similar to Government Code section 57354.[3] It does not believe the Legislature intended in the CWA Act to strand debt at a county water authority, as Fallbrook and Rainbow now suggest. The LAFCO legislation grants a LAFCO the ability to impose financial conditions, and that is in addition to the CWA Act.

Further, the remedy provided in the CWA Act was created in an era when local agencies could simply impose a tax on land if necessary, by decisions of their governing bodies. That is no

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[1] May 23, 2019, e-mail from Rainbow General Manager Tom Kennedy to Keene Simonds ("[I]t appears that to undertake a change of organization only the County Water Authority Act would apply.")

[2] *See*, for example, Government Code sections 56880, 56885.5, 56886, and 57354.

[3] "Any territory detached from a city or district shall continue to be liable for the payment of principal, interest, and any other amounts which become due on account of any bonds, including revenue bonds, or other contracts or obligations of the district and any improvement district within which the detached territory has been situated, as are outstanding on the effective date of detachment. . . ."

longer the case, with various constitutional provisions now requiring voters to approve such taxes. Therefore, given changes in law, to actually effectuate the remedy in the CWA Act it appears that the San Diego LAFCO -- if it were even going to approve detachment -- would need to impose a voting requirement in the detaching service areas such that the voters approve that their lands are subject to pay the pro rata share of the Water Authority's Bonded and Other Indebtedness. Otherwise, if detachment were to occur without the departing agencies being required to pay their agencies' respective share of the Water Authority's Bonded and Other Indebtedness incurred to meet planned and projected baseline water demands and other necessary expenditures, the remaining member agencies would have to pay the costs incurred for customers of the two detaching agencies, which is not the intent of the CWA Act.

In addition to financial legal issues, California state law also mandates in the Delta Reform Act of 2009, as codified at Water Code section 85021, that "The policy of the State of California is to reduce reliance on the Delta in meeting California's future water supply needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency. Each region that depends on water from the Delta watershed shall improve its regional self-reliance for water through investment in water use efficiency, water recycling, advanced water technologies, local and regional water supply projects, and improved regional coordination of local and regional water supply efforts." The Water Authority has done as mandated by the Legislature by reducing its Bay-Delta water use and increasing San Diego County's regional self-reliance, but now the applications of Fallbrook and Rainbow propose to do just the opposite by detaching from the Water Authority and moving back onto MWD.

Additionally, there may be issues as to where voting is to take place on detachment. The San Diego LAFCO has discretion in its authorizing legislation to impose conditions, one of which could include a Water Authority service-area vote so that all affected ratepayers have a say in detachment. The CWA Act also includes provisions relating to voting and the right of all member agencies to be protected from the imposition of costs incurred to meet the demands of other agencies.

All the above issues, and others related to how to handle the effects of detachment, will be addressed in the San Diego LAFCO process. There will no doubt be extensive briefing and argument over the interpretation and application of all the applicable laws.

D. Conclusion

The detachment process will be long, complex, and costly for all agencies. San Diego LAFCO cannot be expected to make such important decisions without extensive study, and detailed legal briefing – all of which will take time and money. How the entire matter will conclude is uncertain at this time.