

Spring 2016

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KDWCD Vision Statement

Kaweah Delta Water Conservation District's vision is to protect, conserve, and maintain the Kaweah Basin's water resources through actively pursuing a comprehensive understanding of the region's water resources and through the management of those resources to their fullest potential. The District strives to achieve its vision by engaging in the following core directives:

- Monitoring water resources and demands
- Conserving and enhancing available water resources, both local and regional,
- Investigating and evaluating the Region's water resources,
- Conserving and protecting Kaweah Basin water rights,
- Preventing the interference with/or diminutions of natural flow, and
- Protecting lands from flood or over-flow

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Sustainable Groundwater Management Act (SGMA)

Plan Regs Adopted; Agency Formation by June 2017

California's sweeping groundwater legislation passed another milestone in May when the California Water Commission unanimously approved the groundwater sustainability plan regulations set forth by the state Department of Water Resources (DWR).

The action establishes requirements for developing Groundwater Sustainability Plans "Plan" by local agencies and also allows the DWR to meet its June 1 adoption deadline as required in the Sustainable Groundwater Management Act (SGMA) enacted by Governor Brown in September 2014.

DWR will file the rule-making package once it's approved by DWR Director Mark Cowin. The approved regulations are the result of extensive public outreach and involvement. They will guide the content of the Plans prepared by local Groundwater Sustainability Agencies "Agency". Under SGMA, DWR is charged with evaluating the development and implementation of Plans, and coordination agreements by local Agencies. These regulations cover various provisions, such as technical and reporting standards, sustainable management criteria, monitoring, evaluation and assessment, and plan amendments.

SGMA requires Agencies to draft plans to bring groundwater aquifers into sustainability. In other words, the Agencies must produce a plan to ensure balanced levels of pumping and recharge. The sustainability definition also says that this balance must be sustained over the long-term without

causing any undesirable results, such as chronic lowering of groundwater levels, land subsidence, and degradation of water quality.

High- and medium-priority groundwater basins that have been identified as critically over-drafted, including the Kaweah Basin, must be managed under Plans by January 31, 2020.



The Kaweah Delta Water Conservation District is participating in the development of a local Agency, the Greater Kaweah Groundwater Sustainability Agency. Twenty-one local agencies and companies, including Tulare County, have signed a Memorandum of Understanding to participate in the Agencies formation, which is estimated to cost just more than \$4 million to form and operate through 2020. The GSA must be formed by June 30, 2017.

Once formed, the Greater Kaweah GSA becomes the primary agency for achieving groundwater sustainability within its boundary. It will develop and implement the Plan, and ensure that the Plan has measurable objectives to achieve sustainability in the 20-year time frame.

The Agency also will have new tools and authorities to manage groundwater and implement its plan. SGMA provides for the authority to conduct investigations, determine the sustainable yield of a groundwater basin, measure and limit extraction, impose fees for groundwater management, and enforce terms of the Plan, all of which are tools the agency can select to sustainably manage groundwater.

Land Subsidence

Subsidence of Earth's land surface is a world-wide phenomenon affected by Earth's physical processes and human activity. Land subsidence in the San Joaquin Valley is due largely to the latter.

Though the Valley is naturally a drought-prone, semi-arid environment it is by design the most agriculturally productive region in the world; a fact that has thus far only been sustainable by a reliable water source. As populations increase so too do agricultural and municipal water requirements. While agriculture improves its water use efficiencies, increasing populations, despite rigorous conservation efforts, demand ever increasing quantities of water.

Agriculture prefers to rely on surface water; however, when the supply is inadequate, groundwater is pumped. Municipalities also rely on groundwater. The groundwater supply is not unlimited; aquifers must be replenished. When they are not, these natural underground storage spaces eventually collapse and compact; in most cases permanently.

Induced by prolific extraction of groundwater, subsidence had a tremendous adverse impact on several areas in the San Joaquin Valley during the middle half of the 20th century. A United States Geological Survey (USGS) study covering that period suggested the land surface in some localized parts of the west Valley fell nearly 30 feet.

The longer surface water supplies are unavailable the more we continue to overdraft our finite supply of groundwater, thereby increasing its deficit, lowering water quality, and exacerbating the destructive effects of subsidence. Subsidence can result in less underground storage capacity, dry wells, water shortages and

and all manner of economic and human hardships.

To locally evaluate the phenomenon, the District implemented its own Land Surface Elevation Monitoring Program in early 2015. The Program was initially a long-term, GPS-based Study. The District collected measurements at 38 permanent observation stations distributed throughout its purview. The data were processed with the intent they would be analyzed in a Geographic Information System (GIS) environment to produce time-series visualizations and predictive models. The future quality of these deliverables will be vastly improved by the following Program advancements.

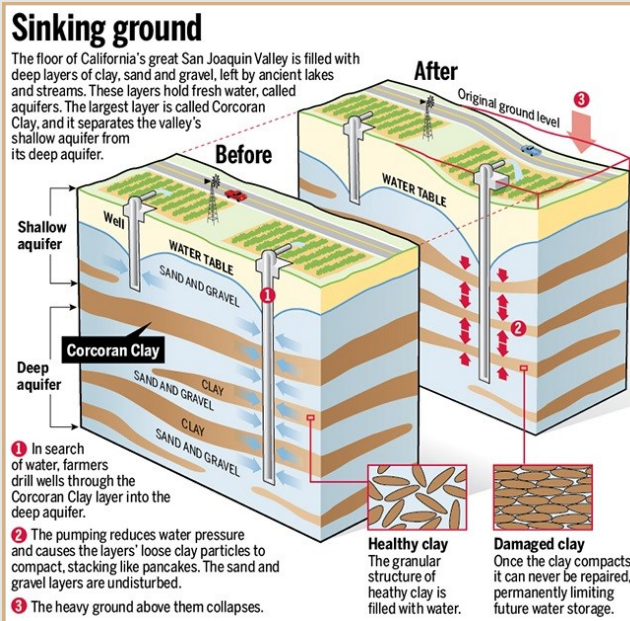
In early 2016, the District partnered with Caltrans. A team of Caltrans Land Surveyors re-initialized the Study by collecting new datasets according to a sophisticated plan with which they redundantly measured all stations on multiple baselines, over five consecutive days. A Caltrans Geodesist then adjusted the data against the Central Valley Spatial Reference Network (CVSRN) and other regional Continuously Operating Reference Station (CORS-GNSS) networks. The new position solutions are of far higher accuracy and historical relevance, meeting not only District standards but those of the National Geodetic Survey (NGS).

Caltrans has since provided internet access to its comprehensive CORS assets such that the District is now able to similarly

adjust its future observations against multi-network data of the same periods of time. With this critical capability KDWCD will achieve its Program objectives more efficiently and at a substantially lower cost.



A GPS/GNSS receiver collecting data at an elevation monitoring station



A depiction of Land Subsidence in the San Joaquin Valley as described by the USGS

Friant Water Authority Hire New Manager

The Friant Water Authority, which represents a majority of the federal water contractors receiving surface water supplies from the Friant Unit of the Central Valley Project, hired Jason Phillips as its CEO earlier this year.



Phillips has now been with the FWA for over five months working on water related issues. Out of college he went to work for the United States Army Corps of Engineers and more recently was with the U.S. Bureau of Reclamation

as the Deputy Director of the Mid-Pacific Region. Phillips began working for the USBR in 2001 and has led and helped manage many of the USBR's programs. Kaweah Delta Water Conservation District is a member of the Friant Water Authority. In April, the Board of Directors appointed Chris Tantau as its representative on the Friant board and at this months meeting appointed Ron Clark as the alternate.

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SGMA cont'

What Happens to Groundwater Rights?

For more than 100 years, Californians have lived with relatively little regulation with respect to their ability to pump groundwater. Residents have been able to drill wells and extract water below their overlying property with very little interference or governance.

With the passage of the Sustainable Groundwater Management Act though, some of that is about to change...or is it?



Californians are entitled to pump and use a reasonable amount of groundwater as long as it is put to beneficial use and is not wasted. Landowners have never been allowed to pump as much water as they could. The state Constitution always has required that any pumped groundwater be put to beneficial use.

When the groundwater is insufficient to meet the demands of landowners, they are expected to reduce their pumping to safe yield levels and prevent overdraft of the groundwater basin. Safe yield is the rate at which groundwater can be pumped

without causing a long-term decline of water levels, or other undesirable effects, such as land subsidence.

SGMA is designed to focus on both safe yield and overdraft. SGMA, however, does not change existing groundwater rights.

California Water Code section 10720.5(b) says that nothing in the legislation "...determines or alters surface water rights or groundwater rights under common law or any provisions of law that determines or grants surface water rights..."

So should landowners be worried? SGMA's first directive is to provide authority and control at the local level for the development and implementation of GSPs. If a local agency was unable to adequately manage its GSP, the state would then step in.

Groundwater Facts:

- ⇒ Groundwater supplies more than 1/3 of the average water used by Californians.
- ⇒ When in drought, some regions rely on groundwater for 60 percent or more for their water supplies.
- ⇒ Drought and the resultant increased pumping have driven groundwater to the lowest recorded levels in some parts of the San Joaquin Valley.
- ⇒ Subsidence has occurred in some areas, threatening bridges, aqueducts, roads and other infrastructure.

Conservation is Cali Lifestyle

Californians reduced water use in communities by 23.9 percent between June 2015 and March 2016, saving enough water to provide 6.5 million Californians with water for one year.

Despite these savings, Governor Edmund G. Brown Jr. issued an Executive Order May 9 making water conservation part of the California lifestyle from here on out. The order builds on the temporary statewide water restrictions applied last year to establish longer-term water conservation measures.

"Californians stepped up during this drought and saved more water than ever before," said Governor Brown. "But now we

Four Tips to Help Conserve Water Outdoors

• Use a broom, not a hose, to clean the driveway.

• Use a rain sensor to regulate the sprinkling system.

• Use a shut-off nozzle.

• Only water when needed.

Four Tips to Help Conserve Water Indoors

- Turn off faucet while brushing teeth.
- Take shorter showers.
- Fix leaks in faucets, showerheads and toilets.
- Only wash full loads.

know that drought is becoming a regular occurrence and water conservation must be a part of our everyday life."

Some of the new measures include permanent monthly water use reporting, new permanent water user standards in California communities, and bans on clearly wasteful practices such as hosing off sidewalks, driveways and other hardscapes.

◆ While the severity of the drought has lessened in some areas of California after winter rains and snows, the drought is not over. Dry conditions continue in many areas of the state, placing California in its fifth consecutive drought year.

The order allows the State Water Resources Control Board to permanently prohibit watering practices that waste potable water supplies. These include:

- ⇒ Hosing off sidewalks, driveways, and other hardscapes;
- ⇒ Washing cars with hoses not equipped with a shut-off nozzle;
- ⇒ Using non-recirculated water in a fountain or other water feature;
- ⇒ Watering lawns in a manner that causes runoff, or within 48 hours of measurable precipitation; and
- ⇒ Irrigating commercial turf on public street medians.

City of Visalia Watering Schedule – March-November

- Even Addresses – Wednesday and Saturday
- Odd Addresses – Tuesday and Sunday

Watering is allowed before 8 a.m. and/or after 6 p.m. on designated watering days. Runoff is prohibited.



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VISIT OUR WEBSITE AT WWW.KDWCD.COM FOR MORE INFORMATION!

Kaweah Delta Water Conservation District hopes that you have found the information in this issue of the KDWCD Water Report helpful. It is our goal to provide water resource information that is relevant and useful to those who live, work and farm in the District. As our District strives to protect and enhance the groundwater resources of the Kaweah River Basin, we also would like the landowners, water users and the general public to be informed and knowledgeable about our water resources, so that together we can make the best use of our water now and into the future.

Water/Weather Related Web Links

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| California Irrigation Management Information System (CIMIS) - www.cimis.water.ca.gov | Friant Water Authority (FWA) - www.friantwater.org |
| National Oceanic Atmospheric Administration (NOAA) - www.noaa.gov | United States Bureau of Reclamation (USBR) - www.usbr.gov |
| United States Army Corps of Engineers (USACE) - www.usace.army.mil | Association of California Water Agencies (ACWA) - www.acwa.com |
| California Department of Water Resources (DWR) - www.water.ca.gov | Water Education Foundation (WEF) - www.watereducation.org |
| Regional Water Quality Control Board (RWQCB) - www.waterboards.ca.gov | Water Education Foundation—Aquapedia— www.aquapedia.com |

Agricultural Water Management Resources

- CA Agricultural Technology Institute** - A non-profit, educational institution dedicated to improving California agriculture
- Irrigation and Training Research Center** - An irrigation teaching program through outside activities specializing in training, research, and technical support
- National Weather Service** - Provides forecasts and warnings for the central U.S.
- CA Water Institute** - Offers seminars and classes dealing with Regional Water Issues, Irrigation Technology, and Research
- UC Ag Extension** - Includes farm, nutrition, family and consumer science advisors based in more than 50 county offices, reaching millions of farmers, businesses and residents every year
- Center for Irrigation Technology (CIT)** - As an independent research and testing facility, CIT assists designers, manufacturers and users of irrigation equipment to make the technological advances required for our growing and ever changing world. Provides pump efficiency testing
- USDA Farm Service Agency** - Provides contact information as well as a listing of the programs and offices that make up the Farm Service Agency
- USDA/ARS Water Management Research Laboratory** - The development of water and weed management technologies and practices for irrigated agriculture in water deficit areas that use water efficiently, improve agricultural productivity, sustainability and reduce negative environmental impacts
- Farm Advisors Office, Agricultural Commissioners' Offices, Tulare and Kings Counties**