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Kaweah Delta Water Conservation District

For more than 80 years, the Kaweah Delta Water Conservation District has been working to fulfill its mission by conserving and storing waters of the Kaweah River, maintaining channels for flood control, and by conserving and protecting the underground waters of the Kaweah River Basin. Through its efforts, and the efforts of other coordinating local agencies, Kaweah Delta WCD helps ensure reliable and adequate water supplies for its service area now and into the future.

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Water Supply - Long-Term Surface Water Supply Contract Secured

Last year, Kaweah Delta Water Conservation District put the finishing touches on a long-term surface water supply contract with the United States Bureau of Reclamation (USBR) securing an additional 8,600 acre-feet for the District's groundwater recharge and conjunctive use efforts.

The new contract provides the District with 1,200 acre-feet of Class 1 water and 7,400 acre-feet of Class 2 water from the Friant Division of the Central Valley Project. Class 1 water is defined as a "dependable" water supply. Class 2 water is considered an "undependable" supply and is furnished only after all Class 1 supplies have been fulfilled for USBR contractors and only when it can be made available as it is highly dependant on the conditions of the water year.

"The addition of this contracted water supply is a huge boon for our long-term groundwater recharge and management programs," said Mark Larsen, the District's General Manager. "As the Kaweah Basin continues to face a groundwater overdraft situation, having more surface water available for storage and recharge will help us move toward changing that trend line."



Millerton Lake Dam

Since 2004, the District and Ivanhoe Irrigation District have participated in a Resource Exchange Agreement, in which IID assigned a portion of its existing USBR contract to the District in exchange for the District's assignment to IID of certain water rights on the Kaweah River and certain rights to storage in Terminus Reservoir. The program worked to improve the dry year reliability of the surface water supplies available to IID and to provide greater reliability of CVP water for Kaweah Delta as it previously received under short term and temporary water service contracts.

The new surface water supply will be managed

annually to benefit the District's groundwater recharge efforts. The water will flow through the District via natural water ways and irrigation district ditches and/or other conveyance facilities. The District uses these conveyance elements to deliver water to its groundwater recharge basins, of which there are more than 40, totaling close to 4,000 acres.

Now that the District has its own USBR contract, it is fully responsible for all rights and obligations of a contractor, including an obligation to repay its proportionate share of the CVP capital obligation that is owed or that may become owing under the Contract, as well as other requirements.

Cooperative Efforts Lead to Local Groundwater Management Planning

With a new administration at the helm in Sacramento, one question is on every water manager's mind: "What's going to happen with respect to groundwater?"

Several legislators already have indicated that groundwater regulation is a necessary component of California's long-term water supply plan. Hopefully those same legislators recognize that for more than 10 years, water managers throughout California have been working to implement groundwater management programs at the local level and are achieving success.

Kaweah Delta Water Conservation District Management has been involved in an Integrated Regional Water Management Planning process for several years. The idea behind the IRWMP is simple: local managers can best manage their local resources, and collaboration of local managers will result in the best solutions for the area.

In this effort, the District has been joined by the City of Visalia, City of Tulare, City of Lindsay, Tulare Irrigation District, Exeter Irrigation District, Lakeside Irrigation District, Tulare County and California Water Service Company. The agencies meet regularly to discuss groundwater issues and management solutions.

Two areas in which the group regularly works are: increasing water supply reliability, which includes conjunctive water management by combining surface water and groundwater storage; and integrating flood management through flood control and detention, and surface water protection and groundwater recharge.

In addition to groundwater protection, Kaweah Delta WCD continues to work alongside other agencies in an effort to resolve local water issues. The District belongs to several working groups, all of which stress local management for resolving water issues.

Southern San Joaquin Water Quality Coalition – The Coalition serves farmers and landowners in the Tulare Lake Basin watershed from the San Joaquin River south to the Tehachapi Mountains. Its goal is to protect and preserve the water supplies and associated water rights of the Coalition members and those they serve.

Friant Water Authority – The District has always maintained an alliance with Friant, given that many of its members are long-term water contractors. Now that the District is a contractor and a member, participation in this organization bears more significance.

Valley Ag Water Coalition – This organization provides leadership and advocacy on issues relating to the development and delivery of a reliable farm water supply.

Groundwater Overdraft Trend Continues

Everyone knows that if you take out more money than you put into your bank account, you'll run into an overdraft situation. Well, groundwater supplies work the same way. And in the Kaweah Basin, the groundwater supply is in an overdraft situation: we simply pump out more groundwater than is replaced every year.

Water supply for agricultural, residential and industrial lands in the District comes from the surface water of the Kaweah River watershed, rainfall or precipitation, and groundwater. Since surface water and precipitation supplies fall short of the District's annual needs, groundwater makes up the difference. This reliance on groundwater has created a state of overdraft in the District, in which more water is pumped from the groundwater basin than is replenished.

Based on recent studies, the District knows that its safe yield is 575,000 acre-feet per year. Safe yield is the volume of groundwater that can be pumped annually without producing undesirable results, such as decreasing groundwater supplies, water quality degradation, unreasonable

and uneconomical pumping lifts, and land subsidence.

Through natural precipitation and recharge efforts, the District received about 615,000 acre-feet of groundwater inflow, which was determined in a 2007 study conducted for the District.

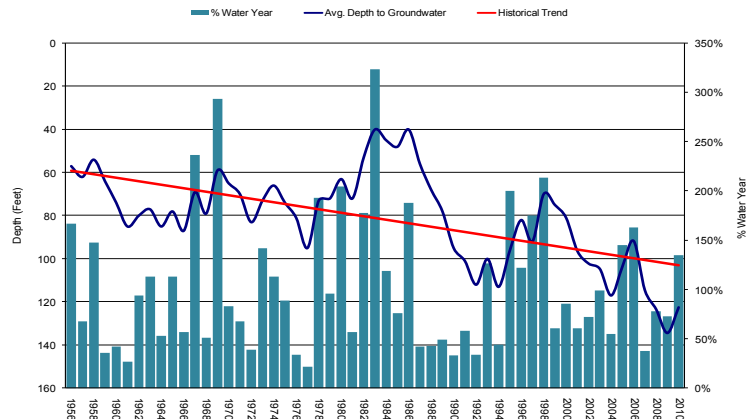
Groundwater inflow comes from many sources, with more than a third resulting from percolation of irrigation water that leaches past the root zone. Other sources of groundwater

inflow include streambed and canal conveyance seepage, precipitation, recharge basins, subsurface inflow and waste water inflow.

In summary, based on the District's current conditions of development and available water supply, the District as a whole is in a condition of overdraft. The magnitude of the overdraft is between 21,700 acre-feet/year and 36,000 acre-feet/year depending on the exact method used.

The Friant-Kern Canal, a feature of the Federal Central Valley Project (CVP), transverse the easterly portion of the District, delivering water from Millerton Lake located to the north. The Tulare Irrigation District (TID), which lies entirely within the Kaweah Delta Water Conservation District (KDWCDC), also obtains water from the Friant-Kern Canal under a long-term contract with the United States.

Historical Average Depth to Groundwater (Fall Measurement) -- Kaweah Delta Water Conservation District



Mc Kay Point Reconstruction Complete

With its structural integrity in question and operational safety a concern, McKay Point on the Kaweah River was given a face-lift and now has two new water control structures, one on the Lower Kaweah River and one on the St. Johns River. The new structures are located immediately downstream and are replacements to the upstream McKay Point weirs.

The Kaweah River flows westward 32 miles from the Sierra Nevada to the Central Valley, where it flows into Lake Kaweah and is managed for flood protection and stored for irrigation purposes. From there, the river splits into two rivers – Lower Kaweah and St. Johns – at McKay Point, located southeast of the City of Woodlake. At McKay Point, weirs constructed in the 1920s or 1930s diverted the water equally into the two rivers for downstream water rights users. For years, this was how the rivers were managed for downstream users.

The structure was upgraded in the 1960s; however, as time went by, several water managers began to raise concerns about the structural integrity of the McKay Point weirs. Likewise, operational safety became an issue and the ability to control flows was impeded because of the massive amounts of debris – everything from animals and fencing to branches and whole trees – that accumulated on the weirs. Most of that debris had to be removed by hand.

“The situation really was becoming quite dangerous,” said Tom Weddle - Engineer and River Operations Manager, “not only for operations and maintenance personnel, but for the general public as well. The situation needed to be fixed as Mc Kay point is the major control structure for managing downstream flows.”

The McKay Point Reconstruction Project in-

involved the construction and operation of new water control structures on the Lower Kaweah River and on the St. Johns River. The new structures are downstream and replace the upstream weirs. The elevation of a short segment of the north and south bank of the St. Johns River and the north bank of the Lower Kaweah River between the old and new structures was raised and improvements to the new channel banks were required to maintain adequate free board (the distance between normal water level and top of the weir structure) above the water surface.

The Project was performed in compliance with all local, State and Federal regulatory and/or resources agency requirements. The Project goal of providing safe operating conditions with a higher degree of control during both irrigation and flood flows was achieved.

Agreements have been executed between the

Mc Kay Point Structure Prior to Construction



Kaweah & St. Johns Rivers Association and Kaweah Delta Water Conservation District and the three owners of the McKay point property, defining each entity’s responsibility regarding the new facilities. The District and Association were each responsible for half the cost associated with the construction. Total costs for the project were about \$4 million.

Terminus Dam and Reservoir, located on the Kaweah River about 3-1/2 miles to the east of the District, was completed in 1961 by the U.S. Army Corps of Engineers.

The dam is an earthfill structure about 250 ft high. It currently has a reservoir capacity of about 186,600 acre-feet or 60,803,876,278 gallons of water! Terminus Reservoir has provided a high degree of river control by substantially reducing the frequency of flood damage and by regulating seasonal runoff for irrigation demands.

Mc Kay Point Structure After Construction





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Visit our website at www.kdwcd.com for more information!

We here at the Kaweah Delta Water Conservation District hope 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 and work in our service area. As our district strives to protect and enhance the groundwater resources of the Kaweah River Basin, we also would like our 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

California Irrigation Management Information System (CIMIS)
www.cimis.water.ca.gov

United States Bureau of Reclamation (USBR)
www.usbr.gov

National Oceanic Atmospheric Administration (NOAA)
www.noaa.gov

United States Army Corps of Engineers (USACE)
www.usace.army.mil

California Department of Water Resources
www.water.ca.gov

Friant Water Authority - www.friantwater.org

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