CALIFORNIA’S SAN JOAQUIN VALLEY

Optimizing Efficiencies and Protecting Land and Water Rights in the Central Valley

Overview

What began as an ambitious canal and barge system in the mid-1800’s has grown to become one of the largest irrigation districts in California’s Central Valley. The Central California Irrigation District (CCID) services over 143,000 acres of agricultural land comprising over 1,900 farms, predominantly from small farming families which have lived here for several generations. One of four “San Joaquin River Exchange Contractors”, CCID holds some of the oldest water rights in California, but also has ties to the Central Valley Project, a target of some activist groups that has resulted in recent legal and regulatory turmoil. The district faces many challenges, including regulatory uncertainty, poor quality drain water, aging infrastructure, and monitoring the implementation of a massive river restoration program, guarding against third party impacts.

Within this environment, CCID strives to deliver water to its patrons – who work some of the most productive farmland in the world – in an “orderly, efficient and equitable” manner. CCID has employed a philosophy that takes on these challenges squarely, with an impressive and proactive array of conservation measures, tail water improvement projects, public education and renovation efforts. This important and innovative district is the topic of this month’s Family Farm “Water Review”.

Continued on Page 2
San Joaquin River
Exchange Contractors History

CCID is the largest of four districts termed as the San Joaquin River Exchange Contractors (“Exchange Contractors”). These districts hold some of the oldest water rights in the state, dating back to the late 1800s. The rights were established by Henry Miller of the legendary Miller and Lux cattle empire. In 1871, Henry Miller constructed canals to divert water from the San Joaquin and North Fork of the Kings Rivers for irrigation of his vast acreage. Today, several of the original Miller and Lux canals are operated by the Exchange Contractors – over 300 miles total, 225 miles in CCID.

Although Henry Miller’s canals served the irrigation needs of his estate in the western portion of the San Joaquin Valley, in order for more growth in the Valley to occur (primarily on the east side), more water was needed. In 1933, the United States Department of Interior started work on the Central Valley Project (CVP), a vast undertaking to build dams throughout the great Central Valley. When construction of the Friant Dam (north of Fresno) was under consideration, feasibility studies showed that irrigation development between Chowchilla and Bakersfield depended upon water being diverted from the San Joaquin River at Friant Dam and brought to the east side of the valley, via the Friant-Kern Canal and the Madera Canal.

To accomplish this, the government asked the heirs of Miller and Lux to agree to “exchange”, where they receive their pre-1914 appropriative and riparian water from the San Joaquin and Kings Rivers for guaranteed deliveries of “substitute” water from the Sacramento River by means of the Delta-Mendota Canal and other facilities of the U.S. Bureau of Reclamation (Reclamation). This agreement, known as the “Exchange Contract,” along with the accompanying “Purchase Contract,” was reached in 1939.

Hence, the name - “San Joaquin River Exchange Contractors.”

In normal years, the Exchange Contractors are guaranteed 100% of their contractual water allotment (840,000 acre-feet) and in critical years the amount is 75% (650,000 acre-feet).

The Exchange Contractors, however, did not abandon their San Joaquin River water rights. Instead, they agreed not to exercise those San
SJR Exchange Contractors *(Continued from Page 2)*

Joaquin and Kings Rivers’ water rights if guaranteed water deliveries continued through the Delta-Mendota Canal or other facilities of the United States. In the event that the Bureau of Reclamation is unable to make its contracted deliveries of substitute water to the Exchange Contractors, the Exchange Contractors have reserved the right to receive their water from the San Joaquin River to satisfy their historic water rights.

Today, the lands served by the Exchange Contractors, including CCID, span approximately 240,000 acres of prime agricultural land east of I-5 and primarily west of the San Joaquin River. These lands include parts of the counties of Fresno, Madera, Merced, and Stanislaus.

There are three other Exchange Contractors who deliver water in the vicinity of CCID. San Luis Canal Company was established in 1913 as a private mutual water company and serves water to over 300 landowners within its 45,000 acre service area. The Firebaugh Canal Water District, established as a public agency in 1988, distributes water to over 30 family farms and 22,000 acres. The Columbia Canal Company, formed in 1926, is a private mutual water company that delivers water to 45 valley farms covering 16,560 acres.

**CCID History**

CCID came into being in 1951 as a result of an election by landowners who were then receiving water from the San Joaquin Canal Company, a former Miller & Lux holding. Shortly after this, land-
owners held a second election for the purpose of levying a general obligation bond against the properties within the newly formed District. Through the sale of these bonds, they raised enough capital to purchase the assets, including the water rights and distribution system, from the San Joaquin Canal Company. In 1954, the newly formed district took over operation of the Canal Company.

Today, CCID is the largest of the four Exchange Contractor districts, and distributes water to over 1900 farms, most of them owned by families whom have farmed the land for multiple generations in Fresno, Merced and Stanislaus counties. It was established as a public agency in 1951.

Recent Regulatory Developments

While the Exchange Contractors are not contractors to the Central Valley Project, by virtue of their “exchange contracts” and “purchase contracts,” they have exchanged their source of water from the San Joaquin River for a supply from the CVP via the Delta-Mendota Canal. As such, federal laws governing the CVP operations can have very real impact on CCID and the other Exchange Contractors.

In 1992, Congress enacted the Central Valley Project Improvement Act (CVPIA), which modified the priorities of the federal CVP. Two years later, the California State Water Resources Control Board issued its Decision 1631, an action that established the Vernalis Adaptive Management Program (VAMP), a large-scale experiment to determine how salmon survival rates change in response to alterations in San Joaquin River flows and Bay-Delta exports with the installation of the Head of Old River Barrier. CCID has been an active participant and contributor to the VAMP process.

The result of a multitude of regulatory actions intended to improve Bay-Delta water quality and fisheries has been a substantial reallocation of water from farms and people to the environment (see figure, Page 5). The challenges facing farmers on the west side of the San Joaquin Valley came to a head in 2009, when a hydrologic / regulatory drought imparted a major impact on the San Joaquin Valley's multibillion-dollar agriculture industry and local economy.

2009 Water Crisis, Lingering Uncertainty

In 2009, then California Governor Arnold Schwarzenegger proclaimed a statewide drought and declared a state of emergency for the counties largely served water by the California Department of Water Resources (DWR) and Reclamation. The combined regulatory / hydrologic
Effect of Regulations on Total CCID Water Supply

What Does this Figure Portray?

“Core” is the water supply provided to the exchange contractors, Municipal and Industrial (M&I), and wildlife refuge supplies, says CCID general manager Chris White.

“If you plot the glide path of how much water has been taken from the federal water projects, and if it continues at the same rate, then in about ten years it will be below the Core supply,” says Mr. White. “At that point the Exchange Contractor supply through the Delta would be insufficient and a “call” on water users in the Friant system on the East side of the Valley would occur, in accordance with the exchange contract.”

Should that happen, all south of Delta users would be impacted, including CCID and the Exchange Contractors, M&I, refuges and Friant.

“I point to this with my growers to demonstrate the urgency to have the ten year water conservation and water resource plan in place and being implemented in a serious way,” says Mr. White.

(Note—“SOD” = “South of Delta”; CVP = “Central Valley Project”; ESA = Endangered Species Act; CVPIA = CVP Improvement Act’ FWS = Fish and Wildlife Service; NMFS = National Marine Fisheries Service)
2009 Water Crisis, Lingering Impacts (Continued from Pg 4)

drought essentially thwarted the ability of water managers to move water out of the San Francisco Bay – Sacramento/San Joaquin River Delta (Bay-Delta) during wet months and into San Luis Reservoir for use during the dry season.

While certain months in 2008 and 2009 were marked by record low precipitation, California had previously been able to withstand drier conditions. For example, during the 1987-1992 drought, many water users did not experience reduced delivery until its third year. California persevered through those conditions by maximizing the flexibility of its water supplies. Unfortunately, much of that flexibility is now gone. In contrast, the recent, few short, dry spells resulted in emergency proclamations or significant damage.

“Today’s dry conditions turn to severe drought much faster due to the ever tightening regulatory belt,” said Dan Keppen, Family Farm Alliance Executive Director.

CCID leaders and other San Joaquin Valley water users scrambled to enhance supplies in the short-term by looking at alternative groundwater sources, putting together water transfers and exchanges, and pleading with government agencies for regulatory relief. As prospects for implementing these alternatives diminished, local water users developed a rationing proposal intended to avoid a catastrophic total depletion of stored water in San Luis Reservoir, which had traditionally provided a reliable water supply in winter months.

“CCID knew we had to improve our water use pattern by 10 percent over the summer in order to have enough water to finish out the summer,” said Chris White, CCID general manager. “Without quick action, our water supply could well have run out by early or mid-August, which of course would have been disastrous.”

Hydrological and regulatory droughts continue to create difficulties for CCID and other water users throughout California. Earlier this year, as CCID customers were confronted with a “critical year” allocation for the 2012 irrigation season, they faced a reduced water supply of nearly one acre-foot per acre. In response to Reclamation’s February announcement declaring

proclamations or significant damage.

2012 a critical supply year (only the fifth time in 60 years), the CCID Board of Directors approved a tiered water rate schedule to address the looming shortfall. Fortunately, due to very favorable weather conditions in March and early April in Northern California, the projected inflow into Lake Shasta ended up well above the 3.2 million acre feet required for CCID to receive a 100% supply.

Looking forward, Chris White and CCID continue to work aggressively to address potential water supply challenges on the horizon. The district has been developing additional assets, including District-owned deep wells and drainage

Continued on Page 7
return systems, which can be operated in summer months to minimize demand rationing and overall demand from San Luis Reservoir, canal system improvements including state of the art SCADA, and conjunctive use program reservoirs. The District is also working to help growers further implement water conservation projects on their land through the CCID Water Conservation Program.

Water Conservation Program

CCID for over twenty years has built up a multi-level water conservation program that has positioned the district as a statewide leader in water conservation. CCID’s Water Conservation Program was started in 1990, where 3% low-interest loans were made available to improve on-farm community ditches. This program was expanded in 1999 to include grant offerings. To date, 474 loans, totaling $12.2 million, and 357 grants ($6.8 million) have been issued by CCID.

“Our program is completely self-funded, primarily through water transfers,” said Tracey Rosin, CCID’s conservation coordinator.

CCID and Cal Poly are currently working to update the District’s water conservation plan, which outlines conservation projects for the next decade. The 18-month project with the Irrigation Training and Research Center at the California Polytechnic University, San Luis Obispo—scheduled to be wrapped up later this summer—is a follow-up to the 1992 water conservation plan, which identified projects, programs and upgrades that could effectively conserve water, both on a landowner level and district-wide.

“We have invested more than $30 million as guided by the original water conservation plan,” said Mr. White. “This has resulted in over 35,000 acre-feet of water conserved per year.”

The water conservation plan is also the basis for CCID’s water transfer program, which has funded conservation and modernization projects. The district also recently received a major grant from the Bureau of Reclamation to help fund the construction of two regulating reservoirs that will help bring water savings and delivery flexibility to the District’s South Division. These reservoirs will allow water in excess of demand at a particular point in time to be rerouted into the reservoirs rather than spilled out of the end of the system. That water can then be held for later use when demand exceeds the water supply at the system head. Importantly, the reservoirs will provide flexibility in delivering water to customers on 30,000 acres that will help pave the way for future installation of more on-farm micro-irrigation systems.

In addition, CCID has received $1 million in funding through a partnering program with NRCS to finance on-farm conservation measures, such as the installation of micro-irrigation systems, in the area.

“CCID’s Water Conservation Program assists our consumers with his or her conservation projects, but when the opportunity to partner with NRCS became readily available, these two programs will leverage about $3 million dollars in improvements,” said Ms. Rosin. “This is the type of partnering that would result in successes at every level—farmer, district, state and federal.”

CCID’s On-Farm Water Conservation Program provides grant funds to cover 25 percent of the cost of installing irrigation enhancements, including microsprinklers, drip systems, tailwater return systems and dairy-related projects, up to $400 per acre benefitted. Cost-shares of 50 percent up to $400 per acre are available for concrete lining or pipelines.

CCID issues quarterly newsletters that include a “Water Conservation Spotlight”, showcasing a farmer and their project. A variety of operations, crops and irrigation systems are highlighted in these articles, and all demonstrate satisfied farmers, improved water use efficiency,
and better crop yields.

CCID grower and Family Farm Alliance member Tom Teixeira in Dos Palos says new subsurface drip and micro-sprinkler irrigation systems installed with help from CCID’s Water Conservation Program will allow his diversified farming operation to get “more return on a per-acre basis of water”.

Groefsema Farms, another Family Farm Alliance member, has found that micro-sprinklers installed on almonds in the district with help from CCID not only save water but provide more flexibility for timing harvest, herbicide applications, and other field operations.

“Basically, one of the real advantages is, we can do what we want, when we want to,” said Clay Groefsema. “Our yields are significantly better with micros because we have so much more control.”

Modernizing Water Infrastructure

CCID last year invested $1.2 million—with $110,000 in assistance from the Bureau of Reclamation—in upgrades and retrofits to the Mendota Dam that may eliminate the need for biannual dewatering for regular maintenance and inspection. This will save an estimated 4000 acre-ft annually of precious CVP water for the Federal contractors. None of the conserved water directly benefits CCID.

Among the projects, CCID is planning a major renovation to address an underseepage problem in the dam that requires inspection every two years. Over the last quarter century, seepage started to occur under the 90-year-old structure, which then led to gaps under the floor and even more seepage. The District every decade or so had injected grout to fill those gaps, but last year developed a more permanent solution.

“If we fix the problem once and for all, we shouldn’t have to dewater every other year for inspection, which will be a great improvement for the District and its partners,” said Mr. White. “In the past, we have had to interrupt service to the refuges and pool users during this dewatering period so this will fix a lot of those problems.”

The District took advantage of the biennial dewatering to repair worn out gates and modernize the system to bring all gates online so they can be operated from the CCID office computer system.

“All together these upgrades, retrofits and improvements will eliminate the biannual dewatering and give us long-term fixes to problems we have to deal with every other year,” White said.

In addition to the Mendota dam fix, CCID has also been busy on other infrastructure projects, including two proposed regulating reservoirs and completion of a three-year project that improved aging weirs by installing modernized electronic gates along the Outside Canal.
Westside Drainage Program (Cont’d from Pg 8)

Westside Regional Drainage Plan

Drainage on the Westside of the San Joaquin Valley has been studied for decades. Enormous investments of time and money have been spent developing theoretical drainage reduction strategies. Although many strategies are known to be effective, few projects have been implemented.

The Westside Regional Drainage Plan (Plan) is intended, in part, to develop an aggressive implementation plan initially utilizing existing projects documented to be environmentally sound; and curtail discharges to the San Joaquin River in accordance with impending regulatory constraints while maintaining the ability to farm.

CCID has been working in recent years to secure $60 million in federal funds needed to implement final components of the Plan. Already, local and state funds have helped initiate methods to collect, treat and dispose of poor quality drain water. Land purchases have increased the size of the tail water reuse area and a pilot waste water treatment plant has been constructed. A full-scale treatment plan, which will eliminate salt discharges into the San Joaquin River, is also planned.

Meanwhile, CCID has been working on a drainage elimination plan that will help CCID landowners on 5,000 acres in the Camp 13 area of the Grasslands Basin address drainage issues in advance of a court-mandated deadline to halt drainage into the lower San Joaquin River. The draft Camp 13 Plan includes solutions ranging from building projects to reduce the need for drainage, to purchasing and retiring land.

CCID started work on a program for environmental review to provide landowners some relief through the purchase and retirement, at least temporarily, of those affected lands in Camp 13.

“We know that the land is farmable and valuable, so our initial approach was to look into purchasing those lands and retiring them, at least until the Drainage Plan is completed and perfected,” said Mr. White.

However, during the environmental studies associated with this option, CCID discovered that certain parcels within the area were farmable by using seepage interceptor lines along the canal systems (instead of tile lines in the fields themselves, which discharge poor quality water). So, the district installed 9 miles of such lines last year.

“The preliminary results look very promising,” said Mr. White. “We can eliminate subsurface drainage and still keep this land in production.”

Additional options are also being explored to find a long-term solution for landowners in light of the difficult situation.

Mr. White said CCID, the Exchange Contractors and other local stakeholders continue to remain focused on finding real, implementable solutions while also pursuing damage claims against the Bureau of Reclamation to hold the agency responsible for drainage in the Camp 13 area.

“We have legal deadlines to deal with and we intend to continue to help local stakeholders to find solutions to the problem in advance of those deadlines.”

Protecting Land and Water Rights

The San Joaquin River Settlement Agreement, signed in 2009, sought to resolve nearly two decades of litigation between environmental interests, the U.S. Bureau of Reclamation and
Friday Water Users Authority over restoring spring-run Chinook salmon along a 149-mile section of the San Joaquin River between Fresno and its confluence with the Merced River. CCID was involved with the legislative negotiations while the bill was being crafted in Congress.

CCID’s primary focus: protect CCID landowners and other third party interests.

“As third parties, we had commitments from the settling parties and our California Senators and local Congressmen that they were going to make sure no third parties were impacted, or if they were that those impacts would be mitigated,” said Mr. White.

The settlement’s Restoration Program calls for increased San Joaquin River water releases in 2014 to promote fish habitat. CCID expressed concern from the onset that the proposed restoration flows would have negative impacts on fields and crops in the CCID service area adjacent to the San Joaquin River.

Once the Settlement enabling legislation was signed into law, the Restoration Program was implemented in earnest.

“With restoration activities underway, the Bureau of Reclamation began releasing environmental documents at breakneck speed,” said Mr. White.

According to Mr. White, nearly $100 million has been spent on the Restoration Program to date, the flow program has started, but not a single structural improvement has been built.

CCID, as a member of the Resource Management Coalition (RMC), reviewed all environmental documents to ensure that third party District landowners were represented on water rights issues and protected against seepage, flooding and other potential concerns regarding lands adjacent to the San Joaquin River.

In May 2011, with significant flood flows pouring down the San Joaquin River, CCID used the high flows as an opportunity to conduct a study to predict the impact similar flows might have once the Restoration Program is fully implemented.

CCID has in place a network of shallow piezometers (monitoring wells) at one-mile intervals, which the district has been monitoring throughout the period of the Restoration Program flow releases. CCID’s monitoring wells in 2009 had previously detected shallow groundwater rises when high Restoration Program flows were surging in the San Joaquin River. Mr. White believes that the information collected from their monitoring effort helped their call to reduce flows to safe (non-damaging) levels and compensate one landowner for seepage damage. Those monitoring wells proved their utility again, during the 2011 flood event.

“We wanted to measure the impact from flows at those levels because ultimately in the future, the program is scheduled to release similar flows at these levels for restoration,” said Mr. White.

CCID took advantage of the large flood flows to frequently monitor shallow groundwater elevations and take daily measurements of river levels at eight different locations.

“We monitored flood flows very closely so that we could apply lessons learned to the Resto-

Chris White, CCID General Manager, speaks at a 2011 tour of the Bay-Delta (Photo source: Water Education Foundation)
ration Program,” White said. “We did see additional seepage and some fields that couldn’t even be accessed to disk or cultivate until mid-summer.”

In July 2011, CCID summarized its findings on the impacts of these types of flows and sent results to the San Joaquin River Restoration Program. Mr. White said the monitoring and analysis clearly showed that significant work needs to be done by the Bureau of Reclamation before it considers sending peak restoration flows during the spring in the future.

Public Outreach and Education

CCID every May joins other California water agencies to raise awareness among the general public about the important role water plays in their communities. The District awards thousands of dollars in scholarships every year to graduating high school seniors to help them achieve their higher education goals. The CCID Water Awareness Scholarship Program started with a single $500 award in 1993. Thanks to support from 40 CCID members and associates who annually make donations to the fund, that number over the years has increased ten-fold, to a total of $6,050 in 2012. Winning entries are selected by a committee appointed by the CCID Board based on their academic excellence, extracurricular activities and community service, and a 300-word essay describing CCID and its importance to the local area.

“The construction of water storage and delivery systems for farm irrigation was a key element in the success of agriculture in our Valley,” wrote one recent scholarship winner. “The District landowners have been fortunate to have the backbone of the Exchange Contract agreement to secure their water rights within CCID.”

Perhaps less articulate but equally passionate elementary school students show their support in CCID’s annual Water Awareness Month coloring contest, which draws participation from over 5,000 elementary students within District boundaries.

A Proactive Management Philosophy

It is clear that CCID is dedicated to the conservation and sustainable use of water. The district has invested in conservation programs and assists farmers who are undertaking conservation projects on their farms with low interest loans and grants. While CCID is appropriately recognized for their aggressive conservation efforts, the district’s proactive approach to problem solving is apparent in many other areas, and that is something CCID leaders are proud of.

“We want our neighbors and other water agencies to truly understand who we are,” said Mr. White. “We want others to know who CCID is and how we are handling things in our water world.”

Contact Information

Chris White, General Manager
Central California Irrigation District
1335 West I Street
Los Banos, California
Phone: (209)-826-1421
Email: cwhite@ccidwater.org