

UTILIZING MULTIPLE FUNDING AVENUES TO DEVELOP NECESSARY INFRASTRUCTURE IN JAMES IRRIGATION DISTRICT

Joseph D. Hopkins, P.E.¹

Brian E. Ehlers, P.E.²

John Mallyon³

ABSTRACT

Due to multiple impacts being placed on the James Irrigation District (District) water supply, a study was performed to understand if the District could sustain its current operations. It was determined that the practices could continue but it would require capital intensive improvements to the Districts infrastructure. Planned improvements include the construction of recharge basins for sustainability, installation of up to 16 groundwater wells and pumps, basin construction, pipeline installation, and construction of flow control and pumping structures. The improvements were estimated to cost approximately \$9,000,000; a cost too high for the District to fund on their own. Because of the urgency of the project, The District explored multiple opportunities to fund the project. This included applying for loans, applying for grants, raising water rates, and raising land assessments; all at the same time.

To obtain loan money the District applied for funds through Proposition 82, distributed by the Department of Water Resources (DWR). At this same time, the district pursued loans through local banks, which provided a challenge considering the unstable banking industry.

Many components of the project are proposed to be built using grant funding. First was a Challenge Grant as provided by United States Bureau of Reclamation's (USBR) Water 2025 program; providing \$300,000. Next was the USBR Field Services program; providing \$25,000. Approximately \$50,000 was utilized from the DWR Local Groundwater Assistance Program. In addition to these funds, Recovery Act funding became available for drought relief, where the District could obtain roughly \$1,500,000.

To generate further income the District approved a water rate increase. It was at this time when it became apparent that the Districts revenue source had become out of balance. The Land assessments were not enough to cover the operational overhead of the District. To rectify this issue, land assessments would need to be raised. This would require a proposition 218 election, which has been pursued. The intention of this paper is to discuss the multiple funding sources available to the District, how they were utilized, and problems that have been encountered.

¹ Associate Engineer, Provost and Pritchard Consulting Group, 2505 Alluvial Ave, Clovis, Ca, 93611; jhopkins@ppeng.com

² Principal Engineer, Provost and Pritchard Consulting Group, 2505 Alluvial Ave, Clovis, Ca; behlers@ppeng.com

³ General Manager, James Irrigation District, P.O. Box 757, San Joaquin, Ca 93660; jmallyon@hughes.net

INTRODUCTION AND BACKGROUND

Background

The James Irrigation District (James ID, JID, or District) is located in western Fresno County in proximity to the cities of Mendota and San Joaquin. The District was organized in 1920 under the California Water Code. Currently the District consists of approximately 23,000 acres, and annually supplies roughly 80,000 AF of water. In a normal year the District would receive 45,000 AF in surface water from the Central Valley Project (CVP). Of this 45,000 AF of CVP water, 9,700 AF is developed from the District's historic right to San Joaquin River water (defined as "Schedule 2" water). The remainder of the grower demand is met by the 59 groundwater wells and unpredictable water supplies from the Kings River by way of the Fresno Slough Bypass. Provided below is a map of the District (Figure 1). The yellow area of Figure 1 represents the boundary of the District, while the tan area represents the Eastside Well Field for which the District possesses groundwater rights.

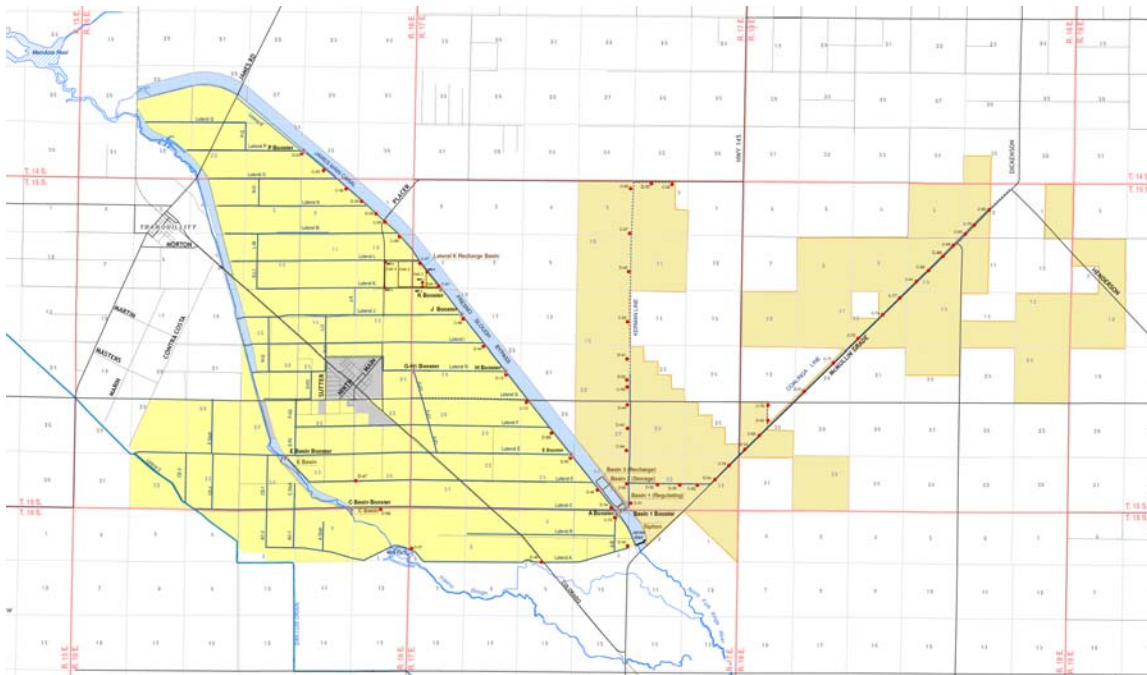


Figure 1. James Irrigation District Map

The CVP water supply is pumped from the Mendota Pool, which is adjacent to the eastern side of the northern quarter of the District. As the natural gradient of the District is south to north, the water received from the Mendota Pool must be pumped in reverse flow through the District's Main Canal to be delivered to the District's distribution system.

Of the 59 wells owned by the District, 35 are located in the Eastside Well Field. This water is delivered to the Main Canal at its highest point, allowing water to gravity flow down the District's Main Canal.

Purpose

Farming on the West side of the San Joaquin Valley is at a critical time. Due to drought and regulatory restrictions imposed upon pumping surface water from the Delta; the District as well as other CVP contractors south of the delta have seen 90% reductions in deliveries these past several years. This has led to significant financial hardships, land fallowing, severe unemployment and bankruptcy in some cases. To provide reliability and assurance to financial lending institutions, and recognizing that the regulatory climate was not going to change in the mean time, the District embarked upon an evaluation to determine if it would be possible to sustain their operations of providing agricultural water to users if the 35,300 AF of CVP water were not available.

The District has a contract for 9,700 AF of Schedule 2 water, and has 59 groundwater wells. It was determined that the District can acquire enough water from these two sources to sustain their practices, but cannot provide enough water to meet the instantaneous summer demand while maintaining the current level of grower flexibility. This is shown in Figure 2 below.

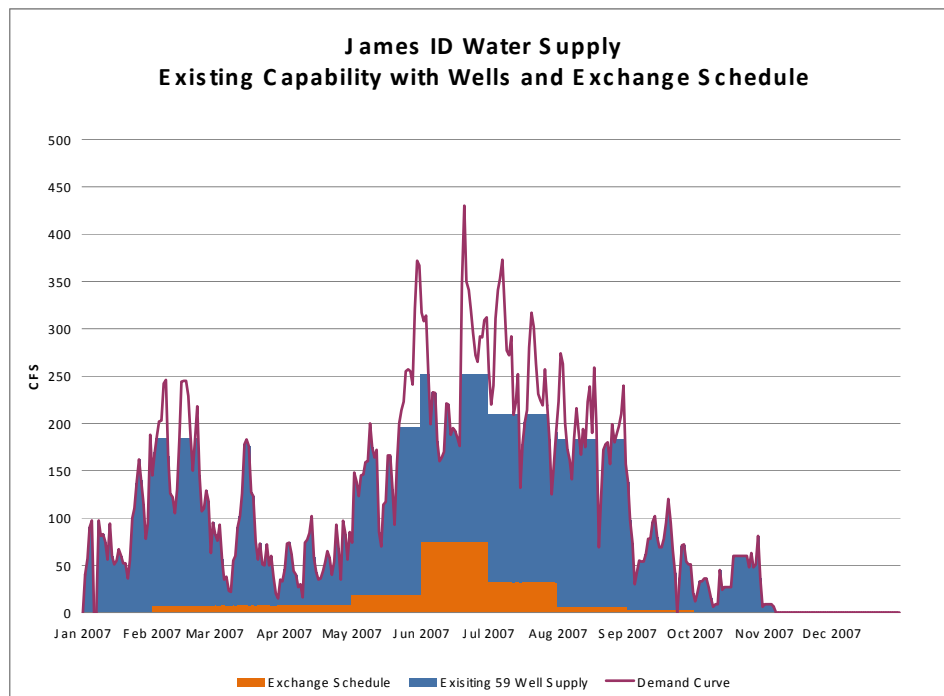


Figure 2. Graph Depicting Inability to meet Demand without CVP Supply

Project

To meet the needs of the growers in the unfortunate event of a zero CVP water supply the District has identified that there is the capability to provide complete delivery with the water resources available if the necessary infrastructure, as described in the follow paragraphs is developed. In summary, the project consists of developing intentional recharge area to recharge flood waters in wet years, storage basins are planned so that local storage can be provided to meet the short term peak system demands, and sixteen additional wells needed to provide the additional capacity of the lost CVP supplies. A majority of the improvements, including expanded intentional recharge facilities, will occur in the Fresno Slough Bypass. The multiple wells will be placed throughout the District. The proposed work was estimated to cost in excess of \$9,000,000. Figure 3 shows how the proposed projects could replace a non-existent CVP Supply.

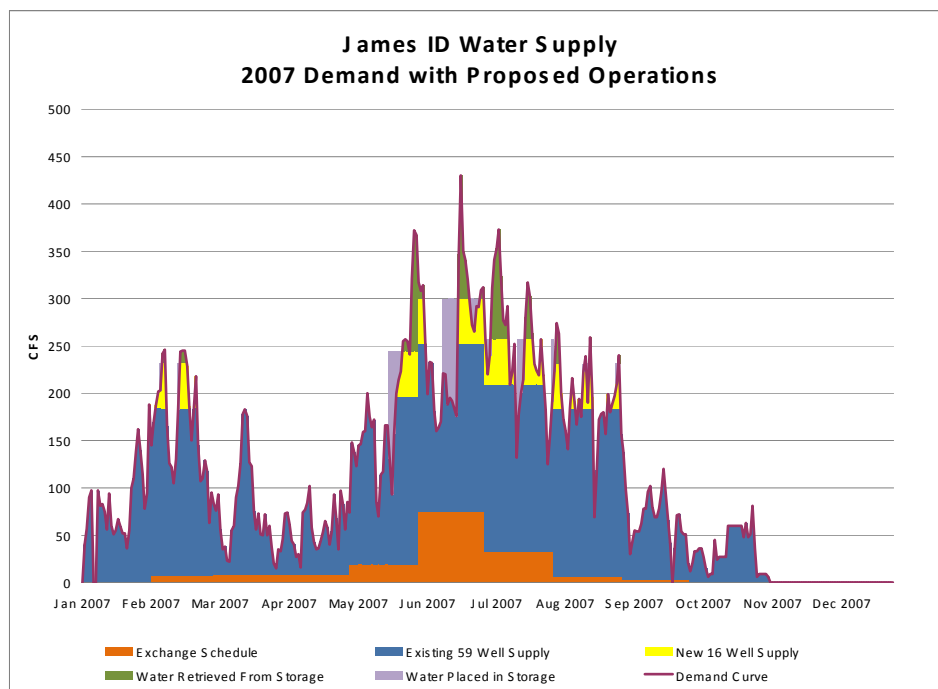


Figure 3. Future Operation of James Irrigation District

Fresno Slough Bypass Basins Figure 4 illustrates the proposed facilities of the Fresno Slough Bypass. An automated flow control device will be operated at the District's control structure, the E-Check Structure, where the ditchtender will have the ability of setting the flow rate to be maintained by the device. When there is excess flow from the Eastside Well Field, the gate will close and force water through the siphon and into the basins. Flow into the siphon will be regulated by level control. When the gate closes, the water level will rise and spill over a level regulation structure in the Main Canal. It is proposed that this structure consist of both ITRC Flap Gates and a weir section.

Once the water passes through the siphon it will reach a distribution structure. It is proposed that this structure have the ability to deliver water to the different cells on a predetermined arrangement. Distribution of water will be determined by weir sill

settings. Once Basin 3 fills to the set level, enough head can then be built to spill water into Basin 2.

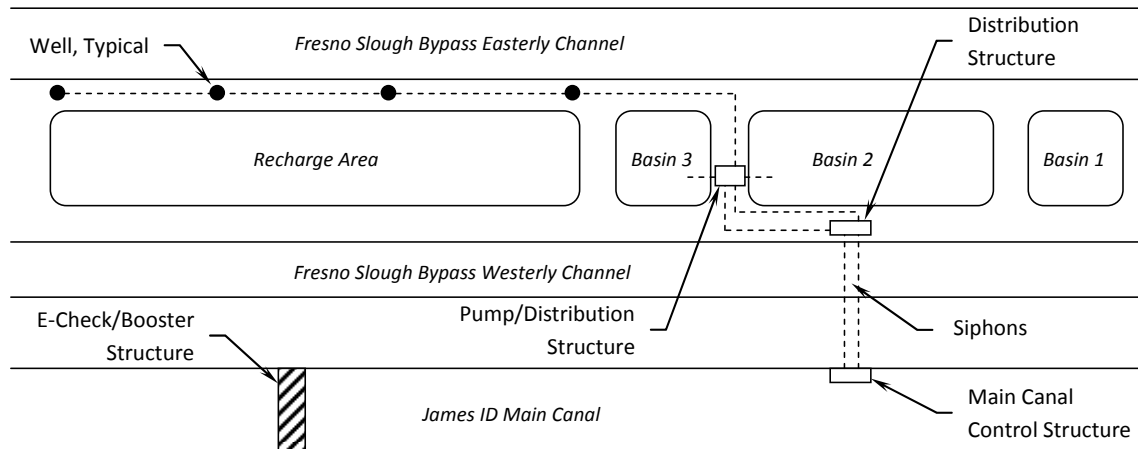


Figure 4. Proposed Fresno Slough Bypass Improvements

80 CFS total pumping capacity is proposed to retrieve water from these basins. Water will be conveyed from the pump stations into a separate pipeline and siphon that parallels the spill siphon and pipeline flowing toward the basins, and discharged into the Main Canal.

Recharge Area To reach the required 1,500 AF of storage, the basins will need to be further excavated, and the excavated earth will become an issue. After a topographic survey, it was confirmed that the lands lying north of the storage basins were low enough to capture Main Canal spill and flood waters released from Pine Flat Lake via the Kings River. It was decided that the excavated earth of the basins could be used to construct levees in this area to maximize storage and provide areas for intentional recharge. It is proposed that four cells be constructed based on the fall of the land, each cell storing water to a depth of 2 to 3 feet. This will also increase the utility of this area.

New Wells New Well construction was based on many considerations. These included system limitations, water quality, and site availability. Overall, four locations were determined for well locations; 1) four in the Eastside Well Field, 2) four west of Colorado Ave, 3) four at the K Basin Recharge Facility, and 4) four at the proposed recharge facility (Figure 5).

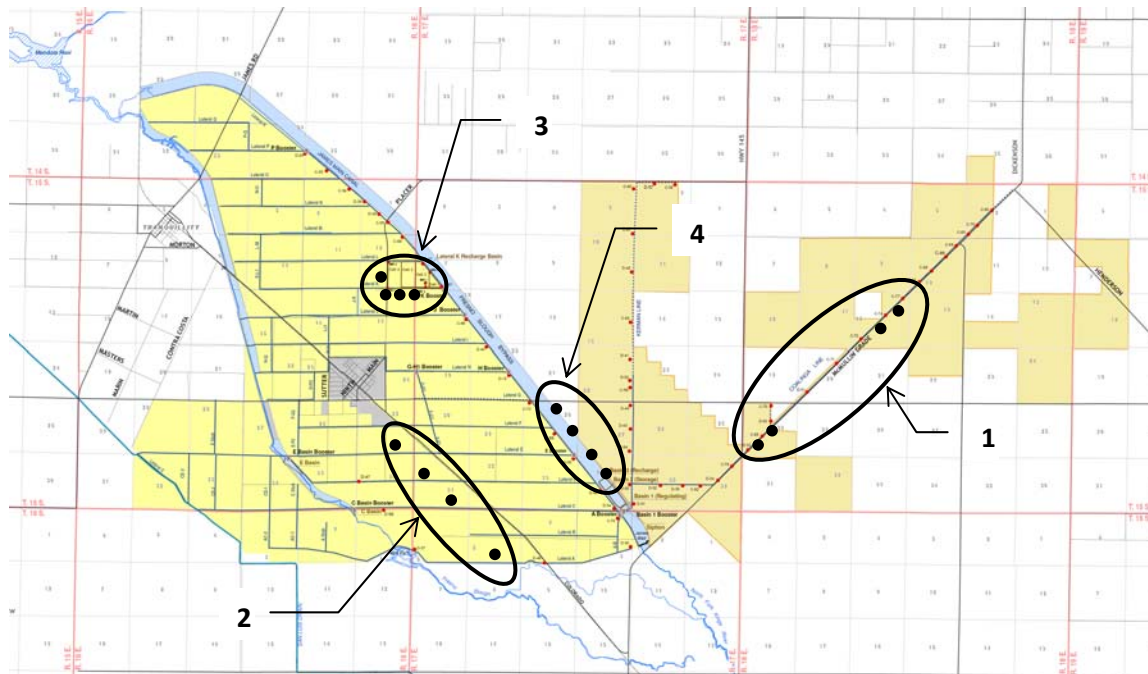


Figure 5. Proposed Well Locations

The Eastside Well Field was chosen because the District has a right to pump water from this area at a flow rate of which they have not met yet; there was still enough available capacity to add the four wells. Due to a utility company installing a gas line through this area, the District was required to act quickly to get their needed infrastructure in place.

The area west of Colorado Avenue was chosen due to physical limitations of the existing distribution system. By placing wells here, more flexibility is provided to growers in this region.

The wells at K-Basin and the proposed recharge area in the Fresno Slough Bypass were chosen for the same reason; their location to a recharge facility. Water retrieved from these locations will be of better quality, require less energy to pump, and allow for banking opportunities in the future.

FUNDING APPROACH

As stated previously, agriculture in the local area is at a critical juncture. No water, No business. However, it was determined the District can develop the resources needed, but could they pay for it? The estimated \$9 million in capital cost relates to a cost of about \$400/acre or about \$800,000/year annualized. The increased energy cost and debt repayment were estimated to increase water costs by over \$45/AF and there was concern that many growers could not afford his increase given the bleak financial climate. The District asked Provost and Pritchard Consulting group to find alternative methods to help fund the improvements.

With the drought conditions and other external issues impacting the water supply to James Irrigation District, The District is under pressure to get this project built quickly. The District required money immediately, so a “shotgun” approach has been taken to secure the needed funds; meaning multiple sources have been sought concurrently. These sources include grants, loans, volumetric water rate increase, and increased land assessments. Specifically, the programs and process listed below have been pursued.

- Proposition 82 Loan
- Water Conservation Field Services Program Grant
- ARRA Drought Relief Grant
- Water 2025 Challenge Grant
- Local Groundwater Assistance Grant (Assembly Bill 303)
- Proposition 218 Land Assessment Increase
- Volumetric Water Rate Increase
- Short-Term and Long term Financing

The District staff was too small to pursue funding on its own, and enlisted the help of Provost and Pritchard Consulting Group. Provost and Pritchard has enough capable staff to pursue these funding sources concurrently.

Proposition 82 Loan

The Proposition 82 loan is administered by the California Department of Water Resources (DWR). As part of the Water Conservation Bond Law passed by California voters in 1988, DWR is authorized to administer \$20 million that provides construction and feasibility study loans to local public agencies for the development of local water supplies. A maximum of \$5 million is available for each single construction project. The District has applied for funding through this program to fund the groundwater recovery facilities of the Water Augmentation Project. When originally applied for, the intent was to pay for the construction and equipping of wells on the Westside of the District, the equipping of wells at K-Basin Banking Facility, and the construction and equipping of wells in the Fresno Slough Bypass and the piping required to convey the water from the Fresno Slough Bypass to the District’s Main Canal. Receiving the money is not instantaneous, from application to approval the total elapsed time is 6 months. The District began the application in March 2009 and in October 2009 received notification that they were approved. However, due to budget problems in the State of California money was still not available. The money will be provided from bond sales by the State. The DWR has not been able to sell bonds for funding under this program as of yet.

Water Conservation Field Services Program

In 1997, USBR created the Water Conservation field Services Program (WCFSP). The WCFSP was created to: encourage water conservation; assist water agencies to develop and to implement effective water management and conservation plans; coordinate with state and other local conservation program efforts; and generally foster improved water management on a regional, statewide and watershed basis. The WCFSP provides grant

money on a 50/50 basis. This means that the USBR will match each dollar the District provides until the funding ceiling is hit for that particular funding year. The funding cap for this had a maximum matching amount of \$25,000. The District plans to apply this money to automating the Main Canal at the E-Check Structure. The application is fairly short and straightforward, and notification of award is rather quick. The District has had great success with this grant; being awarded in full the last five year, and for the current project described.

ARRA Drought Relief Funding

In response to the water shortages experienced by Westside farmers, the USBR offered money for immediate drought relief in May of 2009. This money would be used to produce water as soon as possible. The funding was part of the American Recovery and Reinvestment Act (ARRA) stimulus funding that was administer by USBR Mid Pacific Region, and more specifically the San Luis Delta Mendota Water Authority (SLDMWA). In total \$40 million was made available through this program.

James ID submitted an application for four separate projects of the Water Augmentation Project.

- Lateral A Storage
- Basin Intertie
- K-Basin Well equipping
- West of Colorado Ave Wells and Pumps

Each project was proposed on the basis of being able to provide additional water to the CVP. Of the four projects submitted one was accepted; West of Colorado wells and pumps. This was also the most expensive. The amount of money awarded to the District was \$1.51 Million.

This funding source was unexpected, but utilized to its full potential. The awarded project could now be removed from the Proposition 82 loan application, long term financing goals, and allow the proposed water rate and land assessment increases to be reduced. At over 10% of the project cost, this grant funding lowered the Districts future debt service considerably, but it is expected to take two years to get the money.

Water 2025 Challenge Grant

The Water 2025 concept began in 2003 as a way to prevent “crisis and conflict” in the west. Through the USBR, the water 2025 Challenge Grant provided up to \$300,000 cost share for projects that conserve water. The highest ranking of these projects would be one that promoted water banks and water markets.

James ID applied for and was approved for this grant opportunity in spring 2008, to fund a portion of their Fresno Slough Bypass improvements. The District used its established banking program as its selling point. Specifically the program will provide funding for:

- Pump Structure
- Siphon
- Main Canal Control Structure
- Excavation of Basin 3

The water 2025 program has changed to Water for America, and then again to the Water Conservation Initiative. Typically it is available once a year, as a \$300,000 cost share program. However, with the ARRA, in 2009 funding was available anywhere from \$1,000,000 to \$5,000,000.

DWR Local Groundwater Assistance Program

The Local Groundwater Management Assistance Act of 2000, aka Assembly Bill 303, was enacted to provide grants to local public agencies to conduct groundwater studies or to carry out groundwater monitoring and management activities. This program is administered by the Department of Water Resources. This grant provides up to \$250,000, with no cost share required.

When this grant was originally applied for in the Winter of 2007, the plan was to conduct a water quality investigation of three distinct areas of the District. With the moratorium on funding distribution from California, the study was still taking place while the Water Augmentation Project began. The water quality investigation and the updated Groundwater Management Plan supported the goals of the Water Augmentation Project. The water quality investigation helped with the placement of wells, while the updated Groundwater Management Plan added support to the grant application, making them stronger candidates. Of the \$248,000 awarded for the groundwater quality investigation, the District was able to use approximately \$50,000 toward the Water Augmentation Project goals.

Priority for grant funding in this program is given to local public agencies that have adopted a groundwater management plan (GWMP) and demonstrate collaboration with other agencies in the management of the affected groundwater basin.

Proposition 218

While trying to implement the various projects of the Water Augmentation Project, it was determined by financial consultants that the District's land assessments were lower than they should be. To enable the District to be marketable to prospective bond purchasers it is desired that all overhead cost be covered by the District's land assessments. This allows the District to function its necessary duties in absence of revenue generated by water rates. This is particularly important in years such as 2009, when CVP Allocation were only 10%.

Current District assessments have been \$8.00/acre. This was proposed to be raised to \$21.00; an increase of \$13.00, or over 160%. With their current financial structure and

existing debt service, it makes it difficult to obtain both short term and long term financing. By raising the rates, not only would the District be able to handle their current operating cost, but also have an additional \$200,000 available that is not contingent upon water sales.

In order to raise assessments the District held an election under the Proposition 218 process. The District needed a majority vote from landowners to approve this assessment increase. The District began its pursuit of raising land assessments by first holding landowner information meetings. This was to inform District growers of the proposed project, the plan to provide water supply, and the resulting capability of the expanded distribution system. It also gave the District the chance to discuss various issues affecting the District, which are also felt by the growers, but the landowner themselves may not be informed of the problems. By aggressive outreach the District landowners voted by an 85.7% margin to vote yes on the assessment increase. An incredible feat given the economic condition of the time.

Water Rate Increase

The District had been actively installing infrastructure to ensure water supply for its growers. However, the District could not pay for all the improvements with only its general reserves. In addition, if the District were to spend most of their general reserves it would make it even more difficult to secure loan funding through a bank. The water rate increase not only helped to cover some of the future debt service of the Water Augmentation Project, but also allowed other needed repairs and improvements throughout the District; considering the District is nearing its 100 year anniversary.

Prior to raising the land assessments in the District, the District first raised their water rates. The water rate was increased by \$15/AF, from \$73/AF to \$88/AF. This will generate an additional \$750,000/year, assuming a normal year of water sales.

Short-Term and Long-Term Financing

In addition to all of the financing sources mentioned above, the District was still seeking financing through banking institutions. Their first goal was to secure roughly \$1.5 million in short-term financing through a local bank. Short term financing will provide money to the District on a five year term without a prepayment penalty. This was required to keep moving on capital improvements until other funding comes through. It is also needed to prevent the District from dwindling their general reserves. A small general reserve will also make it more difficult for the District to gain their long term financing.

Long term financing will be provided by District bond sales. It is estimated that it will take 6 months to make this sale. However, with the permitting issues projected to last another year, the District will postpone the selling of bonds for another nine months. Once these funds are secured the District can pay off the short term loan mentioned above.

FUNDING SUMMARY

Currently the District has been pursuing different sources of funding since the Spring of 2008. The project is on track to be completed for the 2011 irrigation season. To date the District has generated roughly \$2 million in grant funding. Also through fee increases, the District is set to receive approximately an additional \$1.0 million annually. Table 1 below illustrates how the District will distribute the money gained to different facilities of the Water Augmentation Project.

Table 1. Distribution of Money to Water Augmentation Components

Funding Program	Capital Facilities								
	Wells and Pumps				Fresno Slough Bypass				
	West of Colorado	McMullin Grade	K-basin	Fresno Slough Bypass	E-Check Structure	Main Canal Control Structure	Siphons	Conveyance and Distribution Facilities	Excavation and Recharge Area Development
Proposition 82 Loan	X	X	X	X			X		
Water Conservation Field Services Program Grant					X				
ARRA Drought Relief Grant	X								
Water 2025 Challenge Grant						X	X	X	X
Local Groundwater Assistance Grant (Assembly Bill 303)	X								
Proposition 218 Land Assessment Increase		X	X	X	X	X	X	X	X
Volumetric Water Rate Increase		X	X	X	X	X	X	X	X
Short-Term and Long term Financing		X	X	X	X	X	X	X	X

It should be recognized that securing additional funding costs money. However, the cost is well worth the reward. Table 2 below illustrates the costs required to obtain the funding. As can be seen, the cost of pursuing funding is only a small percentage of the money available, and has been worth the investment.

Table 2. Cost of Pursuing Funds

Funding Source	Funding Type	Cost	Funding Possible	Status of Award
Prop 82	Loan	\$20,000	\$4,800,000	Pending
Water Conservation Field Services Program	Grant	\$5,000	\$25,000	Secured
ARRA Drought Relief	Grant	\$5,000	\$1,500,000	Secured
Water 2025 Challenge	Grant	\$15,000	\$300,000	Secured
Local Groundwater Assistance (Assembly Bill 303)	Grant	\$20,000	\$248,010	Secured
Proposition 218 Land Assessment Increase	Fee	\$30,000	\$200,000/year	Secured
Volumetric Water Rate Increase	Fee	N/A	\$900,000/year	Secured
Short-Term and Long term Financing	Fee	N/A	\$6,000,000	Pending

Grant funding is rarely guaranteed. The success of the Districts efforts can be attributed to utilization of an outside consulting firm, and the support material prepared over time that has enabled the District to take advantage of the multiple grant opportunities available. While it may seem like a nuisance, if any District is interested in getting grant funding, it is important to have good support material such as, Groundwater Management Plan, Water Management Plan, Feasibility Studies, and a banking program nexus.