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Testimony
Before the Committee on Resources
Subcommittee on Water and Power
United States House of Representatives

Oversight Hearing
On The Role of New Surface and Groundwater Storage in Providing Reliable Water and Power Supplies and Reducing Drought's Impacts
April 13, 2005

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MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

I very much appreciate being given the opportunity to testify before the Subcommittee to provide responses to your questions about new surface storage and groundwater banking and other conjunctive use programs, particularly as they affect the Friant Division of the federal Central Valley Project ("CVP") as well as Friant's extensive efforts to further bolster water conservation and use efficiencies. I am testifying today as the Assistant General Manager of the Friant Water Authority ("FWA") and Assistant Consulting General Manager of the Friant Water Users Authority ("FWUA") in Central California's San Joaquin Valley.

<u>Introduction</u>

In my testimony today, I will explain why additional San Joaquin River surface water storage is so vital to not only Friant Division water users but all other river stakeholders, including those who live along the river and others who want to see the river below Friant Dam restored.

As part of my description of the Central Valley Project's Friant Division's unique nature, I will also demonstrate that Friant has long been a leader in conjunctive use, water management efficiency, conservation and water transfers, all of which are vital tools but which cannot provide the additional water supplies required to meet future needs and desires for environmental enhancement within the river.

I will also briefly discuss the important role that the CalFed Bay-Delta Program is playing in providing the mechanism and planning basis for studying additional San Joaquin River storage development, thanks in large part to the CalFed legislation wisely enacted by the Congress.

Added together, the descriptions and examples I will cite show clearly that despite all of the achievements made within the Friant Division in managing, moving, banking and conserving available water supplies, it simply is not possible to meet future environmental and beneficial needs without an additional reservoir to capture and store San Joaquin River flood rainfall and snowmelt event flows. In fact, in many ways, those needs already exist and beg for much expedited resolution, at a pace well in excess from the relatively slow gait that the Upper San Joaquin Basin Storage Investigation has thus far followed.

Friant's Regional Water Agencies

Both of our agencies, the FWA and FWUA, are joint powers authorities formed under California law. The FWA is composed of 20 member agencies that receive water deliveries from the 152-mile-long Friant-Kern Canal in portions of Kern, Tulare and Fresno counties, California. The FWUA includes 22 member agencies (in portions of Merced, Madera, Fresno, Kings and Tulare counties, California) that contract with the U.S. Bureau of Reclamation (USBR) for water from the Friant Division of the CVP. The FWUA's primary focus is on water supply and environmental issues, including litigation, related to the San Joaquin River, the source of Friant's water supply. In total, there are 28 agencies – districts, cities, communities and counties – with USBR contracts for Friant water and eight agencies that contract for a companion exchange supply of supplemental CVP water delivered through the Cross Valley Canal in Kern County.

The Friant Division service area includes approximately one million acres of the world's most productive farmland. It ranges along the central and southern San Joaquin Valley's East Side from southern Merced County to the foot of the Tehachapi Mountains in Kern County. The Friant service area annually produces about $4 billion in gross agricultural production. Friant water supports and sustains a tremendous variety of crops. The majority of the area is dedicated to permanent plantings of grapes, nuts, tree fruit and citrus. A significant amount of row and field crops is produced within the Friant Division and the region leads the nation in dairy production.

The Friant service area's agricultural variety and productivity are extraordinary in their scope and value. What makes the region even more unique is its ability to achieve this diverse and internationally important production on small family farms that average approximately 100 acres in size. The approximately 15,000 Friant Division farmers, most of whom operate small family ranching operations, are renowned for their highly efficient use of irrigation water. The San Joaquin Valley's East Side has been a hotbed for development of drip and low volume irrigation technology, which now predominates in Friant irrigation water applications.

The result is that Friant can boast proudly of some of the world's highest irrigation efficiencies. Low-volume irrigation systems throughout the Friant service area have become models of good water management, efficiency and conservation. In addition, more traditional irrigation practices remain. There are portions of the Friant Division in which field crops prevail. Those and some permanent plantings are flood irrigated, a practice that is actually beneficial because any water not used by the plant ultimately helps recharge the groundwater basin and the project's conjunctive use aspects. It needs to be noted that the Friant Division has none of the farm-drainage problems that afflict some western portions of the San Joaquin Valley. Even farmers who utilize flood irrigation on their fields use return systems to re-use and conserve water not absorbed by the soil.

In addition, the FWA and the irrigation and water districts that contract with the USBR for Friant water have developed sophisticated management, conservation and conjunctive use programs to make the best possible use of often limited water supplies. (I will summarize examples of these activities, programs and projects later in my testimony.)

Friant Division Background and Description

The CVP's Friant Division consists of Friant Dam and Millerton Lake on the San Joaquin River northeast of Fresno, the 152-mile Friant-Kern Canal that runs from Friant south to Bakersfield and the 36-mile Madera Canal that runs northwest to Ash Slough, a branch of the Chowchilla River. The USBR operates and maintains Friant Dam and Millerton Lake, and administers the CVP's Friant Division water entitlements. Of the regional conveyance facilities, the Friant-Kern canal is operated and maintained by the FWA and the Madera Canal's operation and maintenance is handled by the Madera-Chowchilla Water and Power Authority.

Although the San Joaquin River watershed produces an average annual runoff excess of 1,700,000 acre-feet, Millerton Lake is relatively small. Its capacity is just 520,500 acre-feet, a size that severely limits water storage management and flood control options.

The Friant Division annually delivers approximately 1.5 million acre-feet of water. This water is used principally as a supplemental water supply, providing only 1.5 acre-feet per acre on average. The area is blessed with good quality groundwater aquifers. Groundwater is the firm source of supply for the majority of the service area. On the other hand, there are portions of Friant's service area, including some cities and towns, which rely totally on Friant water as their sole source of supply.

The Cities of Fresno, Orange Cove and Lindsay are municipal and industrial contractors. Unincorporated communities that utilize Friant water for their municipal and industrial needs include Friant, Strathmore, Terra Bella and the Bakersfield suburb of East Niles. Friant, Orange Cove and Terra Bella are 100% dependant upon Friant water for their supplies. Fresno, the San Joaquin Valley's largest city, depends on Friant water for 40% of the city's total supply.

Of all the West's many Reclamation projects, the Friant Division is unique in that it employs a two-class system of water deliveries. Class 1 water is the first water to develop behind Friant Dam and is delivered to those parts of the service area that have limited or no access to groundwater supplies. The Class 2 water develops only after it becomes evident to the USBR that all Class 1 demands have been met; Class 2 water is delivered to those parts of the service area that can rely on groundwater or other river systems. Ideally, Class 2 water replenishes groundwater through "in-lieu" recharge (providing growers with surface water in-lieu of using their wells) and through direct recharge (percolating water in recharge basins, natural water ways and unlined canals into the aquifer). This two-class water supply system, as it was always designed and intended to do, has created a highly effective supply system that depends upon the conjunctive use of groundwater and surface water.

The majority of the water rights to the San Joaquin River allowing for the diversion of water at Friant Dam were obtained by the USBR in the 1930s and 1940s through purchase and exchange agreements with the individuals and entities that held those rights at the time the Friant Division was developed. The single largest of these agreements requires annual delivery of 840,000 acre-feet of water to the central San Joaquin Valley near Mendota (commonly referred to as the Exchange Contract). Thus, the Friant Division is dependent upon other features of the CVP, including Shasta Dam, the Tracy Pumping Plant and the Delta-Mendota Canal, to facilitate this required exchange. If for some reason the USBR is unable to meet these out of Delta export supplies, the Exchange Contract provides for the release of water from Friant Dam to meet Exchange Contractor demands by those historic San Joaquin River water right holders. On an annual water supply basis, however, the Friant Division is operationally separate from the balance of the CVP.

Conjunctive Use and Previous Groundwater Conditions

The Friant Division was conceived and designed to create and support an overall regional water supply that depends upon the conjunctive use of surface water and groundwater. That concept and design long ago were transformed into a tremendous success. Crops and farm production are supported and sustained by groundwater in times and in places in which surface water supplies are not available. In addition, groundwater is also depended upon by most cities and towns along the southern San Joaquin Valley's East Side and the largest user of Friant Division municipal and industrial water, the City of Fresno, is overwhelmingly dependant upon a complicated water banking/groundwater recharge program that uses the aquifer to store its urban supply.

Prior to development of the CVP's Friant Division in the 1940s and 1950s, much of the valley's East Side had been developed for irrigated agriculture with nearly total reliance upon use of groundwater. Heavy pumping throughout in the decades prior to initial Friant surface water deliveries resulted in severe groundwater overdraft conditions in most parts of what is now the Friant Division. Water tables plunged. Acute land subsidence became common and resulted in significant damage to public facilities and private properties. By 1939, when ground was broken for construction of Friant Dam, there were 50,000 acres of what only a short time before had been irrigated farmland out of production because groundwater supplies had become exhausted or too deep for pumping equipment then available. The USBR estimated that if the project were not constructed, some 500,000 acres – half of what is now the primary Friant Division service area – would ultimately go out of production or revert to dry-land farming.

The Friant Division has been in service for 50 years and has been largely successful in arresting the worst of the serious groundwater overdraft condition that existed prior to the project. Records of groundwater measurements show that the cumulative groundwater storage change between 1920-60 added up to a decrease of nearly 7,000,000 acre-feet. Between 1960-2000, with the Friant project fully operational (and despite periodic groundwater gains and losses resulting from periods of wet and dry years), the cumulative groundwater storage change within the Friant Division largely stabilized, and amounted to an increase of nearly one million acre-feet.

It should be noted that a condition of critical groundwater overdraft still exists in parts of Friant's service area and in neighboring areas in the southern San Joaquin Valley. Severe overdraft conditions within much of the Friant Division have been experienced during major drought periods, such as the 1975-77 drought in which the annual Friant supply fell to as low as 200,000 acre-feet, only 13% of the project's historic deliveries. Heavy use of groundwater during that period and other drought events compelled farmers to rely nearly totally upon water pumped from the aquifer, resulting in rapid depletion of groundwater resources, just as occurred in the decades before the project's development. The mid-1970s drought resulted in a calculated depletion of groundwater within the Friant Division of more than 2.3 million acre-feet, or nearly four times the capacity of Millerton Lake. An even more severe toll was exacted on Friant's available groundwater resources during the 1987-92 drought, a string of six consecutive years in which San Joaquin River runoff and Friant deliveries were far below average. During that period, groundwater availability decreased more than four million acre-feet. Fortunately for the region, the project worked as designed and made possible large amounts of groundwater recharge during intervening wet years to balance out the longer-term water supply.

Lessons learned from practical experience gained under drought conditions make it painfully clear that Friant's overall conjunctive-use water supply is highly vulnerable to any decreases in surface water availability.

Flood and Water Storage Management

Among the many limiting factors that constrain options and flexibility in Friant Division water management is a lack of floodwater and conservation storage management flexibility. As noted earlier, this situation is brought about by the comparatively small capacity of Millerton Lake behind Friant Dam. The reservoir has a capacity of 520,500 acre-feet. Unfortunately, 135,000 acre-feet of that amount is "dead storage," beneath the elevations of the outlet works that discharge into the Friant-Kern and Madera canals. That leaves Millerton Lake with "active storage" totaling only 385,500 acre-feet, capacity that is far too small to fully and effectively regulate a river such as the San Joaquin, which averages more than 1,700,000 acre-feet of natural runoff at Friant each year.

This lack of storage presents a variety of difficulties for all parties interested in the San Joaquin River. Here are some of them:

- Flood control and management are difficult. Even in years in which total San Joaquin River runoff is below average, Millerton Lake cannot accommodate the entire flow from snowmelt runoff during the April-through-July peak period. Flood releases into the San Joaquin River are the frequent result, even in modestly dry years. An analysis of flood releases over the period from 1976-2001 shows that, on average, the USBR released 455,000 acre-feet of water. (By comparison, flood releases from Pine Flat Dam on the Kings River, with a reservoir nearly twice the size of Millerton Lake, average less than 200,000 acre-feet annually, even though the San Joaquin and Kings rivers produce similar amounts of runoff.) In 16 of those 26 years of San Joaquin River data, a flood release occurred. Eight flood releases took place in water years in which the Friant Division's contract deliveries failed to reach 1,200,000 acre-feet, the average contract amount during that period. In the summer of 2003, a water year in which San Joaquin River runoff reached only 78% of average, Millerton Lake filled and the Bureau of Reclamation had to make a small flood release down the river.
- Rainflood events – caused by warm winter rains that fall to high elevations in the mountains on top of a big snowpack – are capable of quickly overwhelming Millerton Lake's capacity, particularly if the lake is already fairly full. Such a case occurred in January 1997 when a rainflood event spawned a calculated natural flow that reached 120,000 cubic feel per second and set a record for maximum storage in Millerton Lake, some 10,000 acre-feet above capacity. The Bureau had no choice but to make record and damaging releases into the San Joaquin River from Friant Dam of more than 57,000 c.f.s., even though the channel capacity is just 8,000 acre-feet. In that same water year,

Friant contract water deliveries were less than the 1.2 million acre-foot average of the past quarter century.

- Millerton Lake's small size makes it impossible for contractors to carry over any significant amounts of water from year to year as a hedge against drought conditions because space in the lake must be saved for possible flood management.
- Millerton's limited capacity is fully utilized by the Friant project's contractors and riparian users in the 38 miles downstream from Friant Dam, leaving neither storage space nor water to meet environmental demands for water with which to attempt to restore historic anadromous fisheries without taking the water away from beneficial uses and users.

Friant Division Conjunctive Use and Water Management Efficiencies

There are many examples of the progressive approaches to water use efficiency and conservation, along with wise conjunctive use of surface water and groundwater, that are so common within the CVP's Friant Division. Along with extensive on-farm use of low-volume irrigation systems (such as micro-sprinklers and drip) and return systems that are extremely effective at conserving and efficiently managing water, Friant water agencies have undertaken a number of programs, projects and activities to make the most out of available water supplies.

Some of these include:

- The Orange Cove Irrigation District's program that included a complete rehabilitation of its water distribution system. The program began in the 28,000-acre district in 1991 when its Board of Directors, recognizing that the original system had major deficiencies, began investigating means to finance an all-new system. Construction began in June 1992 with all work being handled by district forces. Along with replacement of approximately 116 miles of old pipelines and an additional 10 miles of new service pipelines were installed along with 1,100 water meters and opportunities to optimize on-farm water management and system use by growers rather than district personnel. System water loses were reduced from 10-14% to none at all today. To improve energy efficiency, OCID installed 45 high efficiency pumps and motors and installed a Supervisory Control and Data Acquisition (SCADA) system for pumping plant operation. Regulating reservoirs were developed. The project was completed in 1997.
- The Lower Tule River Irrigation District's extensive program of conjunctively using surface water and groundwater, and providing groundwater recharge. Lower Tule has access to over 5000 acres of recharge basins in addition to seepage recharge in the canals and rivers. Recharge in canals, rivers and basins ranges from more than 200,000 acre-feet in wet years such as 1998 to less than 25,000 acre-feet in dry years such as 2004. Dry year recharge is limited to seepage loses in the canals only. During dry years, Lower Tule delivers water in the May-August period only with an average annual delivery to growers of 78% of water brought into the district. The District also has banking programs with several Friant and Tule River districts. Under these programs, water is delivered to Lower Tule by the other entities. Lower Tule then makes that water available for in-lieu recharge to its growers. Water is returned in dry years with anywhere from a 50% to a

10% leave behind. The district makes the dry year water available from its Class I and/or Tule River supplies with the growers switching to wells to augment the loss of surface water. From 1996-2004, 725,000 acre-feet were recharged directly into the underground. In that same period, 50,000 acre-feet were banked for other districts, and 1,250,000 acre-feet were delivered to growers. This becomes essentially in-lieu recharge in that growers do not pump it out of the aquifer. The cost of recharge (outside of the capital cost of the basins) ranges from $5 per acre-foot for Tule River water to an average of $30 per acre-foot for Friant water. The cost of extraction ranges from $35 - $75 per acre-foot dependent upon conditions. The benefits of available surface water for recharge and delivery are seen directly in the depth to groundwater. From 1987, Lower Tule's groundwater has gone from an average depth of 43 feet to more than 150 feet in 2004. Since 1987, we have had only six normal or above normal runoff years. During those years, hundreds of thousands of acre-feet were spilled at Friant and subsequently lost to the basin for use in augmenting groundwater supplies. Lower Tule's most significant obstacle to recharge is not its physical capabilities to get water into the underground but rather is the cost of the water and the inability to capture is when it can be put to use. This year is a prime example. Every acre-foot going down the San Joaquin River is an acre-foot that will not be put in the ground via direct or in-lieu recharge. In other words, the inability to store the water now, means a loss of groundwater later because the grower will pump when Lower Tule water is not available.

- The Arvin-Edison Water Storage District's cooperative projects and agreements. Arvin-Edison is Friant's biggest user of Class 2 water as a major part of its conjunctive use program. That supply, with more than 311,000 acre-feet under contract, is highly erratic. Arvin-Edison in the past successfully regulated its imported water supplies historically through the use of groundwater banking facilities in combination with water management exchanges and transfers. As further enhancements, Arvin-Edison entered into mutually beneficial water use and improvement agreements with other agencies, the most significant being with the Metropolitan Water District of Southern California. Arvin-Edison agreed to bank a minimum of 250,000 acre-feet of MWD water in the aquifer below the district and return the water in certain drought years. Returned water is to be delivered during the district's off-peak periods so as not to interfere with normal, historic operations. A program was structured to fund nearly $25 million in facility improvements within the district as well as reimbursing the District for all pass-through water banking costs. As part of the program, Arvin-Edison expanded its spreading works by 500 acres, added 17 new groundwater wells and constructed a 4.3-mile, bi-directional intertie pipeline and pump station connecting the terminus of Arvin-Edison's South Canal directly to the California Aqueduct. As a result of project operations, groundwater levels no longer have a downward trend, but have stabilized. Arvin-Edison has experienced a substantial reduction in subsurface inflow from neighboring areas and a significant improvement in both groundwater depths and water quality for those who continue to rely on groundwater.

- A new urban water enhancement program just being implemented by the Fresno Irrigation District (FID) and City of Clovis. FID's newly developed 250-acre water banking facility near Kerman (west of Fresno) is intended to bank approximately 10,000 acre-feet of surface water, such as that made available in bigger water years under Section 215 of the Reclamation Reform Act, for the City of Clovis in exchange for FID surface water supplies. The cost of this facility was $10 million, or some $1,000 per acre-foot. FID participated in the program in recognition that the Fresno-Clovis metropolitan area in Fresno County, California, has become the State of California's most rapidly growing urban area and is expected to double in population by 2025. FID also participates with the the City of Fresno in a 220-acre groundwater recharge facility that recharges an average of 60,000 acre-feet of water annually.

- The FWA's installation of a SCADA system along the Friant-Kern Canal to enable the Authority to make deliveries on demand in order to avoid Friant's traditional need for 24-hour pre-ordering. The system has been installed over the past several years and, although it has not been completed, now offers centralized command/control opportunities. Software is being developed to eliminate the human factor in gate operations. The new system will permit districts that must pump watr from the Friant-Kern Canal to run their pumps on a time-of-use basis to optimize electric rate benefits. The system will also permit much greater operational flexibility and optimize water storage within the canal and its regulation basin near Delano, Lake Woolomes. Water users reimburse the United States for such capital and operation and maintenance costs.

New Water Storage To Meet Future Needs

Few river systems in the United States are currently commanding as much attention as is the San Joaquin, largely because of the accompanying ongoing environmental debate and litigation.

Whatever claims may be made about environmental enhancement and fishery restoration, there are some practical facts that must be considered. One is that the San Joaquin River remains an absolutely crucial and probably irreplaceable source of water that fuels economic activity for the entire Friant Division service area and the valley as a whole. The region's high value agricultural production today is being matched or even exceeded by the San Joaquin Valley's attractiveness as a place to live. Thus, unprecedented urban growth is occurring within and adjacent to most San Joaquin Valley cities and towns, many of which directly or indirectly depend upon water imported to the service area through Friant facilities. The valley has become California's fastest growing region, thereby placing significant additional water resources demands upon the existing system at a time in which increasing environmental challenges are emerging that have the potential to take water away from agricultural and urban uses.

Therefore, the only effective means of addressing future San Joaquin River water demands will, of necessity, require development of additional infrastructure, including new surface water storage and conjunctive use facilities.

However, opportunities to develop groundwater banking and recharge facilities will of necessity be limited in scope unless accompanied or preceded by additional means of storing San Joaquin River runoff above ground. Opponents of additional surface water storage often contend that all future water use demands can be met in large part through expanded groundwater recharge activities. They assert that we should not even be permitted to think about developing additional surface water storage until all conjunctive use and water transfer possibilities are considered, addressed and implemented.

The fact is Friant water users, their districts and conveyance system operators such as the FWA have been planning, developing, implementing, managing and building conjunctive use facilities, means of efficiently managing water use and supplies, conservation practices and water transfer and exchange programs for a long, long time.

There are also important limiting realities in conjunctive use and transfers that must be considered. Groundwater replenishment, while tremendously important, is a process that takes a great deal of time and can only accommodate small volumes of water over an extended period. Unfortunately, the water supply most available to be captured for long-term storage and future use is most frequently generated through high volume runoff from rainflood and snowmelt flood events. High river flows that often are beyond the Millerton Lake's modest storage capability are far in excess of the extremely limited rates of percolation into the groundwater supply presented by the most porous recharge basins. Additionally, to reach groundwater recharge facilities, floodwaters must use conveyance facilities that are sized to handle irrigation and urban water deliveries, not immense quantities of water generated by flood flows.

All of these factors add up to the very real San Joaquin River need for additional surface water storage. It is a need that is here now and needs to be addressed and implemented quickly.

It calls to mind past decisions that were made wisely to assure that there would be water supply adequacy for future generations of Californians. On the San Joaquin River, your predecessors in the Congress made absolutely vital decisions nearly seven decades ago that led to the Friant Division's development and emergence of the San Joaquin Valley's East Side as an vibrant agricultural region with a growing economy. Today, our region is growing a rate previously unimaginable.

Fortunately, these conditions have been recognized within the CalFed Bay Delta Program. The CalFed Record of Decision identified the need for additional San Joaquin River storage and today is the basis for studies on various project options, investigations in which the FWA and FWUA are pleased to be participating. We are also pleased that the CalFed legislation enacted by the Congress authorized the Upper San Joaquin Basin Storage Investigation.

The time is here for this Subcommittee and the Congress to take the next step, to make possible the advancement of the Upper San Joaquin Basin Storage Investigation into serious planning and development – very possibly including a new reservoir at Temperance Flat above Millerton Lake – as a way to advance the ball toward meeting our future water needs with additional surface storage.

Friant contractors are in full support of completing the current investigation and necessary future studies to determine the yield potentials and range of benefits that could result from additional storage. These may very well include improved water supply reliability and flood protection, augmented conjunctive use and groundwater banking programs, improved water quality, greater recreational opportunities, and enhanced ecosystem restoration efforts.

Conclusion

Although clouded by contentiousness related to continuing environmental debate and litigation over the San Joaquin River, the Friant Division of the Central Valley Project is a magnificent testament to wisdom and foresight among earlier generations of San Joaquin Valley residents and members of the Congress. As a result of their efforts, the southern San Joaquin Valley's East

Side has become the world's leading agricultural region despite the predominance of the sorts of small family farms anticipated under the Reclamation program's creation more than a century ago. The region's population and communities are growing rapidly, supported in large part by Friant water.

However, the Friant Division and Millerton Lake, for all of their positive effects on the valley's development, economy and social structure, remain a study in contrasts:

- Although the Friant project largely stemmed and, over the long term, significantly stabilized the south valley's huge pre-CVP groundwater overdraft as a result of effective conjunctive use of surface water and groundwater, the situation is fairly fragile. Drought conditions almost immediately lead to large short-term declines in Friant Division groundwater resources.
- Even though Friant Dam and Millerton Lake greatly reduced the number of flood events and flood threats along the San Joaquin River, Millerton Lake is too small to capture all flows from most flood events. That requires frequently flood events to be made, even in some years with below average amounts of precipitation and runoff.
- Friant growers have achieved very high levels of conservation and water use efficiency and their irrigation and water districts have invested and are investing in creative, effective means to recharge groundwater reserves and distribute water on farms with the most advanced, water-saving technology available. However, the same limited Millerton Lake capacity problems that create flood management difficulties make it impossible to store large amounts of floodwater for other uses – potentially including environmental enhancement. Conveyance capacity limitations and the inability of groundwater recharge basins to rapidly percolate water into the aquifer also severely reduce Friant's ability to fully capture and utilize floodwater when it is occurring and available.
- Although Friant water from the San Joaquin River created a highly productive agricultural economy and provides, directly or indirectly, many cities and towns with their municipal supplies of water, any water supply loss over the long term would be a regional disaster, particularly for large societal sectors beyond farm families. Some of these include farm workers, businesses, local public agencies and small communities at risk of losing their economic and social bases, as well as forces of valley urban population growth that are now California's most rapidly growing.

The people who manage Friant water, those who know the region and the San Joaquin River the best, know for a fact and hope that all of you distinguished members of the Subcommittee understand – that the only effective means of addressing future San Joaquin River water demands mandates development of additional surface water storage and conjunctive use facilities.

We support, and ask that you do the same, continued funding for the Upper San Joaquin Basin Storage Investigation and necessary subsequent related future studies. Just as our forbearers looked ahead and made the decisions that ensured the valley's long-term viability, we ask you to examine our practical and very real enduring water needs and do the same to adequately plan for the future of our state and region.

Thank you again for the opportunity to testify. I will be glad to answer any questions you may have.