

## Chapter 15

# **Maturity, But Not Retirement**

With completion of the original Don Pedro Dam and Reservoir, the Modesto Irrigation District came of age. Maturity did not mean retirement, however.

The half century which followed the 1923 dedication of what then was the world's largest concrete gravity dam was to be filled with new challenges, in many ways as great as those which had plagued early directors.

Throughout the nation and the world there was the great boom and bust cycle. The heyday of the 1920s was ended abruptly by the 1929 crash on Wall Street and the Great Depression that followed. Agriculture always is the first to feel the effects of an economic crisis and the depression of the 1930s struck when farmers in the Modesto Irrigation District had little more than 20 years of experience in the techniques of intensive farming by irrigation. Not only did the district have a substantial debt, but farmers also went heavily into debt in an effort to survive.

That decade was followed by World War II and its demand shortages of manpower, materials and equipment, however, further burdened production on the farm. Following the war, the period of booming growth soon pitched agriculture into a head-on clash with urban sprawl.

The one thing that the district did not have to face, though, was new beginnings.

The MID's infancy was well behind it in 1921 when California Governor William D. Stephens launched a statewide water and power development campaign with the slogan, "Water for every acre and power for every use." With a general awakening throughout the state of irrigation's importance, the 1920s were marked with the formation or expansion of irrigation districts all around Modesto and Turlock as other areas followed in the footsteps of the pathfinders.

The establishment of some new irrigation districts resulted in major conflicts, as on the west side of the San Joaquin Valley where advocates of a Wright Act-type district battled with the still-powerful Miller & Lux Company, which in turn was fighting the Madera Irrigation District over San Joaquin River water rights.

The creation of the Merced Irrigation District was less of a struggle but still not an easy task because of opposition from major corporations and landholders. Miller & Lux, with its own irrigation system, and Southern Pacific, with its railroad rights-of-way, contended their property could not benefit from irrigation by the proposed district. The courts rejected their pleas. In San Joaquin County, especially in the Tracy area, several districts were being formed with little dissent.

It was in this atmosphere that the Modesto board approached the task of providing stability to Modesto's irrigation-dependent agricultural economy while meeting the growing needs for improved productivity. It faced two basic challenges during the period:

1. Protect its independence from intrusion by state and federal governments.
2. Expand and modernize to meet the needs of rapid growth.

In response to "the threat of encroachment from the state and federal agencies," the Modesto Irrigation District with its partner, Turlock, took the second-most important step in the MID's history.

The most important move, of course, was its decision to retail Don Pedro-generated electrical energy. Now came the decision to ally with its long-time adversary, San Francisco, in the cooperative development of the Tuolumne River watershed.

This would utilize the river's full potential and prevent the intrusion of any other party.

On February 29, 1940, the two Valley irrigation districts and San Francisco agreed that any further development would be undertaken only with the consent of the other partners. Although it was only a simple agreement to cooperate, it laid the groundwork for the multi-million dollar development of the Tuolumne for the benefit of all three parties.

As early as the 1930s, the need for additional storage on the Tuolumne watershed was recognized. Thus, it was hardly a decade after the completion of Don Pedro Reservoir that the board was forced to begin thinking about future water needs.

This need was uppermost in the minds of MID directors when state and federal agencies began to covet Tuolumne water. In December 1943 the irrigation districts and San Francisco outlined a \$150 million development program which would increase water and power resources in the watershed by 150 percent.

The first step in this program was to be the construction of the Cherry Valley Dam and Reservoir by San Francisco, primarily to meet its Raker Act water-delivery commitments to the irrigation districts. The Corps of Engineers won congressional authorization to contribute \$5 million to the anticipated \$9 million project cost in lieu of building more expensive, separate flood control storage facilities on the river at Jacksonville. The presence of the Army Engineers on the watershed was accepted by the districts and the city because the corps' sole interest was flood-control and it posed no threat to water rights or the export of water.

While the irrigation districts benefited directly from the additional storage, it did not cost them one cent. In a subsequent agreement reached in June 1949, the Modesto and Turlock districts did provide the federal agency 100,000 acre feet of interim flood-control storage in Don Pedro Reservoir.

That latter agreement detailed the commitments to finance the watershed's ultimate developments to meet all the needs of the irrigation districts and the City of San Francisco. This would commit to beneficial use all of the Tuolumne River's water resources. The plan also provided maximum flood protection on the river.

The key to the entire program was construction of the massive, 1.2 million acre-foot New Don Pedro Reservoir which, according to the arrangement, would be built by the City of San Francisco, with the Corps of Engineers contributing an additional \$3 million for flood-control benefits.

Once completed, the project would be turned over to the Modesto and Turlock Irrigation Districts to own and operate. The only cost to the Valley districts would be the acquisition of the land and rights-of-way.

When the long-range project was completed, San Francisco would have 450,000 acre feet of water available annually to meet its domestic needs. The MID and TID would share 1,090,000 acre feet of water a year to irrigate crops. Each would have three major reservoirs – Hetch Hetchy, Cherry Valley and New Don Pedro – at its disposal to insure that through cooperative operation all future anticipated requirements would be met. The Corps of Engineers would have 340,000 acre feet of flood-control storage, eventually concentrated in New Don Pedro, at its command during high runoff periods.

Except for a small minority contingent, the proposals won strong support from the community, with *Modesto Bee* managing editor Harry Conway editorializing that the agreement “should insure continued prosperity for this section of the Valley.”

The 1949 agreement was consummated just three months before President Harry S. Truman’s interior secretary, Julius Krug, presented Congress a proposed \$2-billion Bureau of Reclamation water resource development program which included federal construction of New Don Pedro and the Upper and Lower Cooperstown Reservoirs on tributaries to the Tuolumne, along with projects on the Stanislaus River.

Once more the Modesto district and its partners poised to preserve the Tuolumne’s water from the clutches of the Bureau of Reclamation’s Central Valley Project.

MID Chief Engineer Clifford Plummer bitterly protested that, before the district had entered into the comprehensive agreement with San Francisco, federal reclamation officials had promised him that the CVP would not make demands on Tuolumne water.

In 1944 the U. S. Bureau of Reclamation had proposed diverting Tuolumne and Stanislaus River water to irrigate 500,000 acres southwest of Fresno. Bureau Regional Engineer E. W. Creim, a former MID engineer, in 1946 had assured some 250 irrigators gathered from throughout the San Joaquin and Sacramento Valleys that their water rights would be respected. The forum was a Stanislaus County Pomona Grange-sponsored conference opposing any interference by the CVP with the vested rights of existing irrigation districts.

When three years later Secretary Krug again tried to move in on the Tuolumne River domain of the Modesto and Turlock Districts, Plummer charged:

This plan would double the acreage these rivers (Stanislaus and Tuolumne) would have to irrigate when we often don’t have enough water for our own land. The moment the Bureau of Reclamation money is used to develop these resources to the limit – as we ourselves now plan to do with the aid of Army flood-control funds – we will lose control of the river, which we cannot afford to do.

Federal water also would cost 10 times what MID farmer then were paying, Plummer warned local irrigators.

In 1950 Regional Director Richard L. Boke wired Congressman Cecil F. White that the U. S. Bureau of Reclamation “has no plan to take over and operate and integrate into the CVP the Turlock-Modesto Irrigation Districts. Never had any such intention and never considered the suggestion.”

The battle against CVP encroachment was won again.

Victory was reaffirmed in December 1953 when Undersecretary of Interior Ralph Tudor praised the cooperative development of the Tuolumne as “an example of the kind of local control the Eisenhower administration desires to see throughout the nation. Such local control means that the users decide the fate of their own resources.”

In 1956 the Modesto district again insisted upon its independence when the California Water Resources Board and its chief, Harvey Banks, were developing still another statewide water program. The Modesto board declared there was no surplus and any interference by the State Water Plan would jeopardize the district’s present operations.

The Modesto Irrigation District directors declared pointedly that the state might as well exclude the Tuolumne River at the outset and avoid a battle. This would “save time and money both for the State of California and the people who have contributed to providing for their own water needs,” the directors declared. They added:

Long years have been spent in working out a plan to use the waters of the Tuolumne River to the best of advantage of the people and we do not feel that any group or agency should upset this program for complete and ultimate control and use of the Tuolumne River.

The California Water Plan was approved in 1959 without any involvement along the east side of the San Joaquin Valley.

The cooperative spirit conveyed by the 1943 and 1949 agreements between San Francisco and the irrigation districts first was expressed in concrete terms even before the construction of Cherry Valley Dam. In 1950 the San Francisco installed drum gates at Hetch Hetchy’s O’Shaughnessy Dam to increase by 20,000 acre feet the storage reserved strictly for use by the irrigation districts.

Cherry Valley Dam, started in 1952, was completed three years later. Its 274,000 acre feet of additional storage provided better and longer irrigation seasons, preventing strict rationing such as had been required in 1947 when Modesto’s irrigation season ended a month and a half earlier. The total capacity of this one reservoir equaled 77 percent of the Modesto district’s annual needs. Of course, the water had to be shared with Turlock.

The modified earth-fill dam built by the Guy F. Atkinson Company created a five-mile long lake two miles wide. Subsequently, a 5,840-foot tunnel was built to connect the new reservoir with the 41-year-

old Lake Eleanor. This assured that the runoff from the two primary tributaries in the Tuolumne River's upper reaches could be captured and put to beneficial use in the fields of the Modesto and Turlock Irrigation Districts.

Cherry Valley Dam, which ultimately cost \$14 million, is 350 feet tall, shaped like a diamond 1,200 feet thick at the base and 2,600 feet across at the top. Five-and-a-half million cubic yards of rock and material were used. The core was of impervious, decomposed granite and the filter sheet of coarse-to-fine rock. The remainder of the dam was granite fill. All material was found locally. The 19-foot wide, 1,600-foot long diversion tunnel later was lined with concrete, reducing the diameter to 16 feet to serve as an outlet tunnel.

The dam was dedicated on October 27, 1955, just before the disastrous Christmas Eve floods in the San Joaquin Valley. A review of flood flows revealed that at the peak of the flood 100,000 second feet of water was pouring into Don Pedro Reservoir. This was 750,000 gallons per second – enough water flowing into the reservoir every 11 seconds to supply the City of Modesto for a full day. With the help of Cherry Valley Dam, Don Pedro was able to control the floodwaters until the flow was down to 42,500 second feet. The Army Engineers' investment in the new dam paid for itself within a month after its completion.

With the Cherry Valley Reservoir operating, Modesto's irrigation situation was improved, but the final solution, New Don Pedro, still was more than a decade away.

Meanwhile, there were other problems to face.

Irrigated acreage in the MID peaked at just under 71,000 acres, then started to decline in 1948. The postwar housing boom, suburban shopping centers and industry began a steady encroachment upon irrigated lands. Asphalt, stores and houses replaced orchards and vineyards. To achieve greater productivity per acre, more water-intensive crops were introduced.

The raising of La Grange Dam 18 inches in 1923 had permitted a better flow in the MID canals, but more efficiencies were required.

Possibly the most important long-range water management program undertaken between the building of the first and second Don Pedro Reservoirs was the Modesto Irrigation District's concerted effort to line with concrete or divert into underground pipelines all of its main canal, laterals and ditches.

When the canal system was constructed, all canals were earthen channels, except in a few places near the head of the main canal where it skirts the bluff of the Tuolumne River. That sector was cut through slate rock, which obviously would not carry water without being sealed. It had to be lined immediately.

For many years, it was felt that any great amount of lining would not be feasible. Yet, open earthen canals proved to be inefficient and wasteful. Weeds and tules clogged them, reducing the flow of water and requiring expensive cleaning each year. Evaporation and seepage stole as much as 30 percent of the slow-moving water before flows reached their destination. Seepage contributed to the rising water-table problem.

The canal-improvement program was only spasmodic in the early years. Engineer Percy Jones reported in November 1921 the completion of more than a mile of lining of the main canal and installation of 24-inch concrete pipe in 400 feet of the Curtis drain.

By 1933 less than 25 miles of canals had been lined or piped, but considerable work was to be done under the depression-fostered federal Public Works Administration, although in many instances the cost of paperwork and supervision ate up much of the advantages of having federal financial assistance.

World War II material shortages slowed progress, but each year a few more miles of canals were lined with concrete. Most of this work was performed primarily to repair bad spots and to eliminate the danger of breaks at specific locations in the earthen ditch banks.

After the war, however, the district launched a 20-year program designed to line or pipe all of its main canal and laterals. By 1955 MID Chief Engineer Plummer announced 93.7 miles of the total network had been piped or lined. This meant 58 percent of the goal had been achieved. In the prosperous years that followed, work was speeded so that 81 percent was finished by 1960. By lining at least six or seven miles of canal each year, the program was completed by the mid-1960s.

Today all 288 miles of the district's main canal, laterals and drains, as well as many of those inherited in the 1977 merger with the Waterford Irrigation District, are lined with concrete or are piped.

Earthen canals in which the flow could not be carried in 42-inch concrete pipes were lined with two to two-and-a-half inch-thick concrete bottoms and sidewalls. Many of the larger canals had to be

rebuilt completely, using specially built backhoes, because the bottoms had washed as much as six feet below the original grades.

Non-reinforced monolithic concrete pipe up to 42 inches in diameter poured in place in the ground is almost as high in quality as precast pipe sections hauled to the site and can be installed at less than half the cost.

A standard trench digger with a modified special finishing bucket leaves a semicircular ditch with a smooth, round bottom, which serves as the form for the lower half of the pipeline. Concrete is poured in the trench around a large float or “boat,” which is rocked back and forth by a man standing on it. In this manner, the lower half of the pipeline is shaped. As soon as the concrete begins to set, round steel forms are placed on it and the top half is poured. On the following morning when the concrete had hardened, the steel forms are stripped out and reused. The pipeline then is covered and the surface graded.

In this fashion, some operators have been able to complete more than 600 lineal feet of 30-to-36-inch pipe in an eight-hour day.

Piping of the smaller ditches not only improved the efficiency of water delivery and permitted farming in the rights-of-way, but it became a virtual necessity with the disappearance of the horse from the farms.

Charles Crawford, for many year Modesto’s irrigation engineer, notes it is practically impossible to maintain small ditches without horses. Although weeds can be removed by spray or burning, ditches which are not plowed become almost impossible to maintain due to depredations by gophers. An open ditch cannot be plowed effectively with a tractor.

Along with the TID, the MID was one of the first irrigation districts to embark upon and complete a program to eliminate inefficient earthen ditches. The benefits have been many, including the unexpected advantage of preventing bank damage by muskrats. Not native to California, muskrats which were introduced in the mid-19<sup>th</sup> Century to establish a fur industry, have migrated throughout the Valley, causing great damage to irrigation facilities.

Lined canals are more efficient, but also more deadly for people who find them attractive for swimming. The water flow is faster and stronger. Steep, slippery concrete sides make escape more difficult, impossible for some. People continued to swim in the canals even though as early as 1950



Stanislaus County Health Officer Dr. George O'Brien and Modesto City Health Officer Mark Landquist launched a campaign declaring canals unsafe because of pollution and other dangers.

“Several times each summer we find someone using the canal for a septic tank,” warned Dr. O'Brien.

As more canals were lined, pressure mounted to put those running through residential areas underground.

The 1951 drowning of a 5-year-old Sonora girl – the second canal drowning in 15 years – caused formation of a canal safety league to seek feasible solutions to the danger. Discussed were rerouting, covering or piping, fencing, patrolling, alarms, screening, steps and handholds. Earlier on its own initiative the district had explored replacing open canals with underground pipes, but took no action because the multi-million dollar cost was beyond its means.

In 1954 the MID Board of Directors did offer to match locally-raised funds for the underground piping of any lateral 2 along Encina Avenue and El Vista School in east Modesto.

Later the same year a Forward Modesto Committee subsequently renewed the canal-safety appeal. A 20-year canal piping program was recommended. The district maintained, however, that this should be done through local improvement districts. Directors contended that to finance such a massive undertaking with the district's general funds would impose an unfair financial burden on rural residents. Although reports of the discussion did not indicate the issue was mentioned, the canals were in place first and residential areas were developed around them.

Early in 1964 a new study estimated the cost of piping all canals in the residential areas at \$8 million, which the district felt was prohibitive at that time. Investigations into fencing canals revealed more hazards than protections. Fences would be more of an obstacle for adult rescuers than for nimble children.

Educational programs inspired by the Canal Safety League and Forward Modesto Committee since have become a significant activity of the district, however.

For many years when canals were being filled for the first time each spring, the district issued warnings about their hazards. In 1964 the first water-safety pamphlet was prepared, urging safety in all

waters, including swimming pools, rivers and lakes as well as canals. These were sent out with monthly statements to MID electrical customers and distributed through the schools.

Designed around a symbolic frog named Splasher, a formal safety program devised by MID Administrative Assistant Paul Grenbeaux took form in 1970. Aimed directly at the younger children, pre-school through third grade, a booklet contains stories, songs and coloring pages emphasizing water safety in general, not just related to canals. Four versions of the publication are rotated so youngsters see a new booklet each year.

Today, 25,000 copies of the book are distributed through pre-school and elementary school classes. The book also is available without charge to the general public. Since 1977 the MID has joined The *Modesto Bee* in cosponsoring a special YMCA Ester vacation program at which more than 500 non-swimmers from the age of 4 to 12 learn to swim each year.

The irrigation district is responsible for the development and maintenance of the main canal and laterals. Distribution ditches feeding off the laterals to serve individual farms are and always have been the responsibility of the irrigators. A court attempt to force the district to provide ditches to serve every individual farm failed.

Irrigators immediately adjacent to laterals were able to draw directly from them but those some distance away had a problem. Once again, dirt ditches proved inadequate. Cooperative efforts were required to improve them.

At the request of the Modesto and Turlock Irrigation Districts, Stanislaus County's State Senator J. C. Garrison, an east Empire area farmer and former MID director, drafted and won passage of the 1927 California Irrigation Improvement Districts Act. This allows a group of farmers to organize under the umbrella of the parent irrigation district to share the costs of building and improving the distribution systems.

Under the program as it functions in the Modesto Irrigation District, the ditch system is surveyed and engineered by the district's irrigation staff. The district does the contracting and provides project inspection. Property owners are responsible only for construction costs as the district absorbs all other expenses. Repayment is over a 10-year period at a reasonable interest rate, which in 1986 was 7 percent.

The MID is responsible for all maintenance during the 10-year repayment period. Although the improvement district agreement did not provide for it, the district continued to perform all maintenance work until 1986. At that time, the district began to require maintenance expenses to be borne by irrigators, as agreements had stated all along. The policy change was based on the belief that the former practice was unfair to those not in improvement districts who had to maintain their own ditches. The MID still performs without charge the maintenance work required during the 10-year pay-back period, however.

Not surprisingly, Senator Garrison and members of his family and neighbors were the first to petition for the creation of an improvement district. Although the petition was filed September 4, 1928, no improvement work was done until 1937.

It wasn't until the Great Depression that the program gained momentum. The first project completed under the program was the Shepherd Improvement District off Lateral 5 west of Modesto. The work was done in 1931.

Crawford, who as chief irrigation engineer for the district supervised the development and operation of many of the successful improvement districts, feels the system was especially valuable in replacing old dirt ditches. He notes that the program "provided a practical, efficient way in which people could get together to save water, insure more efficient delivery and reduce maintenance costs substantially."

Today 240 active improvement districts serve about 50 percent of the total MID irrigated acreage. One hundred sixty-six miles of distribution ditches have been put underground in pipelines through the improvement district program.

The growth of the Modesto district is reflected in its annual gross revenues, which totaled about \$250,000 in 1920, swelled to nearly \$1 million a decade later and currently exceed \$70 million.

Growth meant more people, more responsibilities, more new and sophisticated equipment.

Since 1912 the district offices had been located in the 800 block of 11<sup>th</sup> Street. By mid-century the building was hopelessly overcrowded. In August 1956 the MID moved into a new \$827,000 headquarters building designed specifically to meet these rapidly expanding requirements. Located at 11<sup>th</sup> and M Streets, the new building emphasized customer service and convenience, simplicity, appropriateness,

flexibility, and service to the public. Directors made the building's auditorium available to community organizations for public meetings.

These qualities earned the MID headquarters the Northern California American Institute of Architect's 1957 award of merit for institutional buildings, the best of 140 competitors.

When the current headquarters building was opened, it was said to have been designed "for at least a century of use," but with provisions to add on to the south sometime "decades in the future." Thirty years later the district had purchased the balance of the block bounded by 10<sup>th</sup>, L, 11<sup>th</sup> and M Streets and work to expand it is under way in the MID's centennial year of 1987.

Much of the growth in district activities was due, of course, to the rapid increase in the number of power consumers and the dramatic increase in the use of electricity generally.

While the board of directors remained grower oriented, it found itself involved in new business, industrial and administrative practices.

As the division boundaries changed to give Modesto's urban area its own director, business and professional people appeared on the policy-making body. Employee relations, payrolls and other management problems became increasingly important. Engineering in both water and electrical departments became more complex. Technicians and professionals in specialized fields were hired.

The days when a man could be repairing a ditch bank one day and helping out with payrolls the next were gone. The Modesto Irrigation District truly had become big business. Administrative and engineering functions of the district were adjusted to meet these needs.

Through these years of transition, the MID Board of Directors displayed the traditional day-to-day conservatism of farmers, but showed themselves to be as visionary as the original founders of the Modesto Irrigation District. They quickly learned to work with other local, state and federal agencies while protecting the district from being gobbled up by programs devised by these agencies.

Directors assumed leadership roles in statewide organizations of irrigation districts. The Association of California Water Agencies, formerly known as the Irrigation Districts Association, was organized in 1910 at a Modesto City Hall meeting of representatives of the Modesto, Turlock, Oakdale,

South San Joaquin and Alta (Fresno County) Irrigation Districts. Today the ACWA has more than 300 members representing virtually all California irrigated lands.

Modesto dairyman and Division 5 Director Milton L. Kidd was president of the association from 1943 to 1948 during those critical years of debate over the Central Valleys Project and formation of Governor Earl Warren's State Water Plan. In his capacity as IDA president, Kidd played a major role in the battle to protect the interests of local districts, becoming adept at hurling verbal brickbats at the U. S. Bureau of Reclamation.

MID Directors Matt Fiscalini and John Kidd, a nephew of Milton Kidd, also served as ACWA presidents, Fiscalini in 1965-1966 and the younger Kidd in 1978-1979.

Not all the problems MID directors faced in mid-20<sup>th</sup> Century were major but many proved troublesome.

Storm drainage, for instance, became an issue between the MID and the City of Modesto. For years, the canal system was not suitable as a permanent solution for handling the city's runoff of storm water.

"Storm drainage of urban areas must handle the runoff occurring from a storm in a short period of time," explained Chief Engineer Plummer. "Since many of our intense storms occur after canals are filled with irrigation water, much damage would occur while waiting for the canals to be controlled to the point where the water could be discharged. This would result in the flooding of bottomlands, damaging of crops, require new rights-of-way, and complicate regular winter maintenance and construction."

A couple of limited uses were permitted initially: One in Empire where the community put up funds to build a spillway into the Tuolumne River and the other on Tully Road north of Highway 99 to solve a local drainage problem on an interim basis until a permanent solution could be achieved by the city.

Although the city has expanded its dry-well drainage system, these cannot cope with the heavy runoff of an above-average storm. Several limited agreements between the district and the city now allow the pumping of excess standing water into nearby laterals.

Recreation also became a part of the district's concerns as Modesto Reservoir, previously known as Dallas-Warner, developed into a major boating and outdoor activity area. The land around the reservoir

had been leased to cattlemen for grazing, but the district decided to forego that revenue and turn over the land to Stanislaus County for development of appropriate recreation facilities.

A 1958 survey found that most of those using the reservoir were family groups. Power and sail boating and water skiing were the leading activities, with fishing close behind. Most families were from San Joaquin County, with Alameda County visitors second in volume of users. Less than 20 percent of the users were from Stanislaus County. The reservoir also drew heavily from the San Francisco Bay and Peninsula areas.

History shows that the '40s, '50s and '60s were a critical period in the MID during which its directors had to defend against outside raids on the Tuolumne River and arrange with a former water-rights adversary, the City and County of San Francisco, to develop fully the river's watershed, thus providing for the district's future needs.

The times and the pressures required courage and durability of the district's directors serving the irrigators and electrical consumers whose lives and fortunes had come to depend upon the MID's successes in water and power resource management.

Had less visionary men made less demanding decisions in those times, the MID would not have been able to grow and meet challenging requirements placed upon it, nor would the people and entities dependent upon the Modesto Irrigation District have prospered as they did.

Paradise Valley, indeed, did prosper in its transition from a rural agricultural producing area into one of the world's largest food processing centers.

The achievements of these years were tremendous, but they were to be followed by still another spectacular accomplishment; construction of the massive New Don Pedro Dam and Reservoir which would insure that the MID's water requirements would be met for all time.