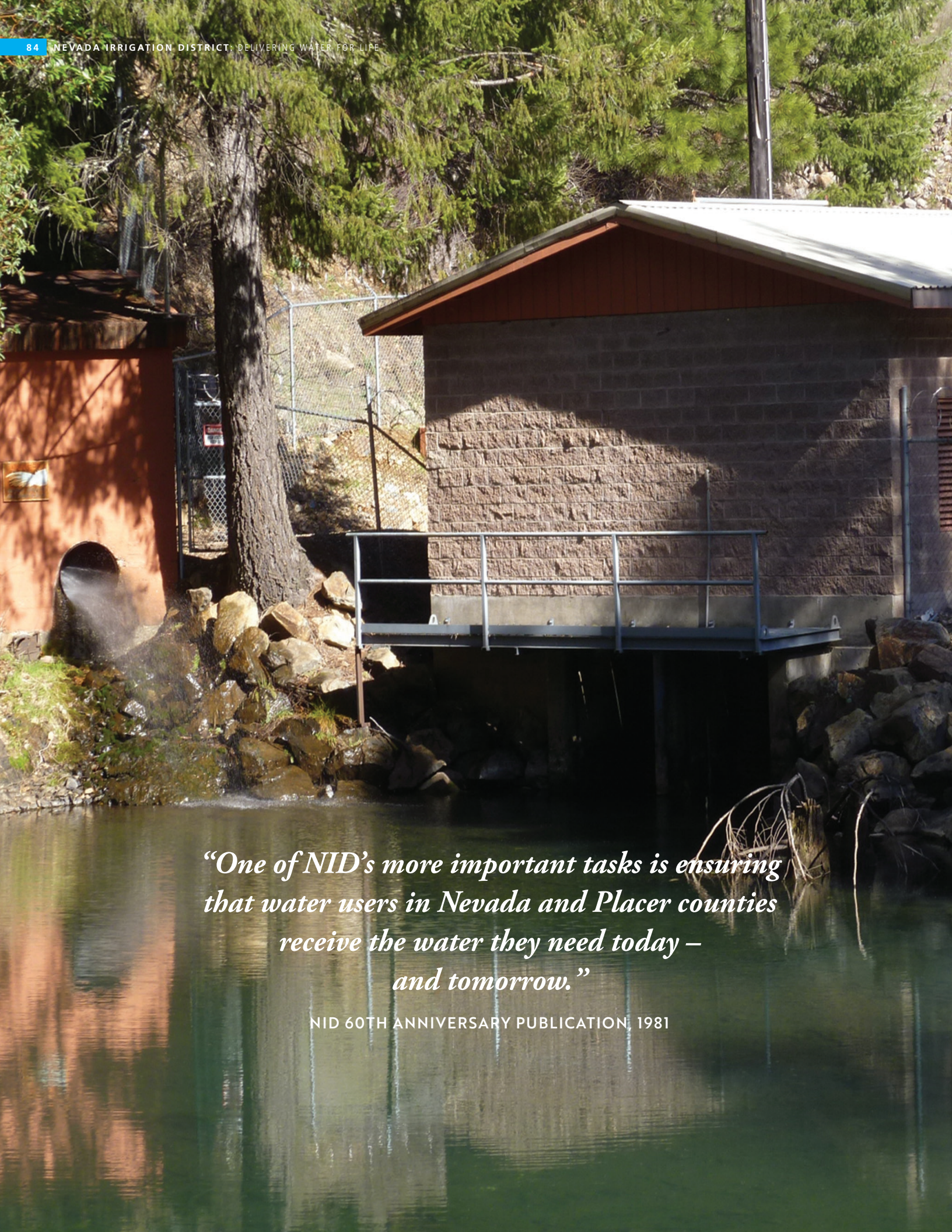


"One of NID's more important tasks is ensuring that water users in Nevada and Placer counties receive the water they need today – and tomorrow."

NID 60TH ANNIVERSARY PUBLICATION, 1981

CHAPTER 12

NID Grows with the Community

The 1980s brought wide-ranging advancements, as well as challenges. A dramatic increase to the region's population forced NID to upgrade its aging infrastructure, while continuing to invest in water treatment to ensure the best drinking water quality for domestic customers. The District also put a priority on expanding hydroelectricity generation capacity with new power plants.

The state of California reported Sierra foothill counties grew by 17 percent from 1980 to 1982, a rate that made the region the fastest-growing in the state. In 1980, NID's 150 employees were serving 13,684 customers – 9,500 of those domestic – and the District was experiencing the largest 10-year growth rate ever. At the time, workers were hard-pressed to keep up with the demand. For example, only two full-time meter readers were each reading nearly 5,000 meters per month.

By 1982, 2,000 more customers were depending on NID water, and the District celebrated its 10,000th metered water customer that year. General Manager Bandy noted, "Land uses are changing and we're responding to different

Scotts Flat

needs. The demand for treated domestic water is growing much faster than demand for agricultural water."

Understanding the growth that was taking place and the added stress put on the aging water system of tiny canals and old wooden flumes, some dating to the 1800s, District leaders focused on upgrading the existing infrastructure. In fact, starting in 1980, a third of the NID workforce and 44 percent of NID's budget were devoted to system maintenance.

"Many of the problems we have are related to old structures and ditches," said Delbert Hedges, Director of Water Operations at the time. "We have bottlenecks where sections of canals have been enlarged but other portions have not." Additional hurdles included canals in difficult, inaccessible areas and on private property where landowners often opposed change.

The vulnerabilities were put on display on June 6, 1980, when a 220-foot section of the Combie Canal failed, sliding into the Bear River and cutting off water deliveries to the southern portion of the District.

The number of projects during this period was impressive. For example, in March 1981, NID replaced 2,000 feet of the Lime Kiln Siphon, one of several "Tibbetts Siphons" designed into the raw water system 60 years earlier by founding Engineer Fred Tibbetts. This and other siphons allowed the ditch system to flow by gravity through the ups and downs of rolling terrain. The following year, crews began a major two-mile upgrade of the Cascade Canal downstream of Red Dog Road where six old wooden flumes were replaced with 60-inch steel pipe.

In a special 60th Anniversary publication in 1981 by The Union newspaper, NID's past was celebrated with a notation of its primary challenges for the future: "California is rich in water resources but faces critical problems because of uneven distribution of rainfall. There is demand in Southern California for Northern California water. Two-thirds of California's water originates north of Sacramento but 70 percent of the state's water users live to the south," the publication noted. It continued: "What does this mean to the residents of the NID? To officials at NID it means the District must continually prove it is putting our valuable water supply to its highest and best use."

"One of NID's more important tasks is ensuring that water users in Nevada and Placer counties receive the water they need today – and tomorrow. Long-range planning is a major concern of NID.

"Under complex water right laws administered by the state Water Resources Control Board, NID

must respond continually to an ever-increasing number of regulations, including those governing water quality and the beneficial use of the water supply.

"NID's first water right applications date back to 1918 and 1919, even before the people formed the District in 1921. Other applications have been filed through the years, most recent in 1976 for water to operate the hydroelectric power plant at Rollins Reservoir.

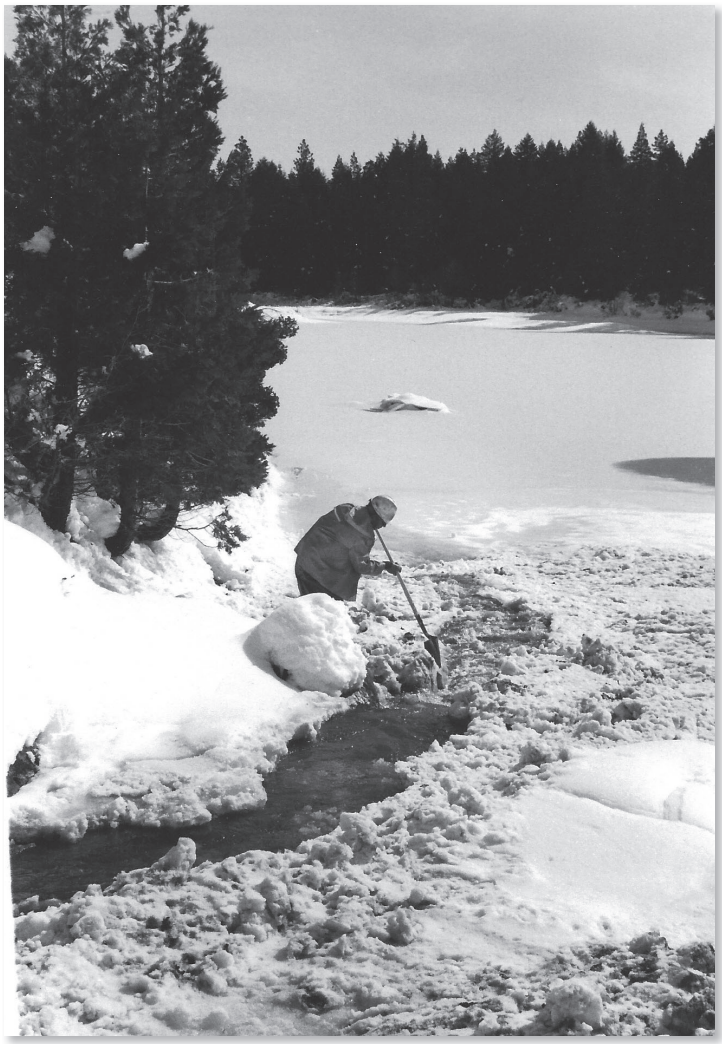
"There are four purposes for which the water right applications have been filed – mining, agriculture, domestic use and power production. Changing times have caused mining to be questioned as a valid water use but other uses such as recreation and fish and wildlife habitat have come into acceptance.

"Today, agricultural water users account for about 90 percent of the water NID supplies each year. Agricultural water users are considered important to the District in protecting its long-standing water right permits and licenses.

"Originally formed for irrigation purposes, NID in recent years has been going through a transition process, responding to increasing demand for domestic (treated) water service. Today, more than 9,500 of the District's total 13,000 customers receive piped and treated water. As downstream demand continues to increase, NID will face the continuing challenge of proving that our water supply is needed here."

Developing a plan to map out the future

In recognition of the unprecedented changes occurring, NID began work on a districtwide master plan in 1982 with the goal to calculate available water supply quantities in the future, as well as to develop ways to meet those needs. NID hired CH2M Hill, a highly reputable engineering firm that provided consulting, design, construction and operations services for corporations and governments. Alarmingly, the company completed a study that showed District reservoirs would run out of storage capacity in 20 years – around 2002 – and that new storage must be added to keep up with demand.



Loma Rica Reservoir is cleaned after a snowstorm on March 5-7, 1985.

CH2M Hill recommended two new storage options: first, constructing the Parker Reservoir, which was first identified in the 1920s on the Bear River downstream from today's Rollins Reservoir; and second, adding a reservoir at English Meadows at the headwaters of the Middle Yuba River, where a Gold Rush-era dam once existed. Later, in 1988, the District also looked into an option of raising the dam at Rollins Reservoir, which was estimated to add between 4,500 and 5,500 acre-feet of storage.

In joint efforts to support regional water distribution, NID and the Placer County Water Agency (PCWA) constructed their first intertie between water systems in 1983. Interties are interconnections between public water systems permitting exchange or delivery of water. The source water was the snowmelt in the Bowman corridor that was conveyed downstream through NID infrastructure and then transferred to PCWA to supply its

It was in 1980 that the historic 22-inch water valve from the famous Idaho Maryland Mine was first displayed at NID. It still stands on the NID campus, located in front of the modular building adjacent to the main office.

customers. The agencies would continue to collaborate to supply water to Auburn and Lincoln, building a series of interties that include a certain amount of redundancy to act as a backup system in case of failure in treated and raw water infrastructure.

Meanwhile, NID's growth continued. By 1985, the District was serving 15,814 customers; and the annual budget of $8.05 million in 1984 had increased to $10.4 million in 1986.

NID management change: James Chatigny named new General Manager

In the mid-1980s District management once again changed with General Manager Bandy's retirement. Then-Board Chairman Carole Friedrich paid tribute to Bandy, saying, "He's leaving the District in the best shape it's ever been in." Bandy retired on April 30, 1986, due to health reasons and because "It's just time."

James Chatigny, who was hired in 1979 as an administrative aide and became assistant manager in 1983, assumed the helm. Chatigny was chosen from 37 applicants for the permanent management position, and would hold the position for 16 years. Numerous improvements, changes and accomplishments are attributed to him during the 1980s. He was challenged to think quickly and work fast.

Starting when he was an administrative aide, Chatigny championed new, better ways of doing business. For example, he reviewed the status of the District's termination of Social Security coverage and the transfer to the more progressive California Public Employees' Retirement System (CalPERS) for retirement benefits. He presented the idea before the board, and the resolution was carried unanimously, to adopt the resolution.

As General Manager, Chatigny put an emphasis on public transparency and open governance, refining a committee system that allowed citizens, board members and personnel to engage in conversations about items. Board member Friedrich said she felt the committees served an invaluable service, "bringing the customers directly to the Board members." Chatigny also noted at the time the benefits of the committee system helped with increasing the understanding of District operations: "I think we have a very good image. We're communicating with people much better – we're communicating with our employees and the press."

Out in the field, one of Chatigny's early accomplishments was the replacement of underground "Techite" pipeline. NID had installed about nine miles of the reinforced plastic mortar pipeline in the 1960s and 1970s, but many sections were rupturing. Pinhole leaks would sometimes explode into violent pipeline eruptions. Along with other purchasers around the nation, NID sued the pipe manufacturer and won a cash settlement. NID's largest-yet Techite replacement took place in 1988, along three miles of Colfax Highway.

Another significant upgrade was the replacement of the D-S Canal Flume No. 1 for $1.7 million.

The project, which extended into 2013, involved the entire replacement of elevated structures, referred to as flumes, along the D-S Canal to strengthen the conveyance system to provide reliability and longevity, improve safety conditions for workers and increase capacity.

Hydroelectric generation expands

NID had been generating hydroelectric energy on the Yuba-Bear Project since 1966, but the Arab Oil Embargo of 1973-74 brought new attention to the potential for more clean, renewable energy. During the 1973 Arab-Israeli War, Arab members of the Organization of Petroleum Exporting Countries (OPEC) imposed an embargo against the United States in retaliation for the U.S. decision to resupply the Israeli military and to gain leverage in the post-war peace negotiations. The embargo gripped the nation, yet also opened opportunities for a transition away from fossil fuels to increased support of renewable energy, such as hydroelectricity.

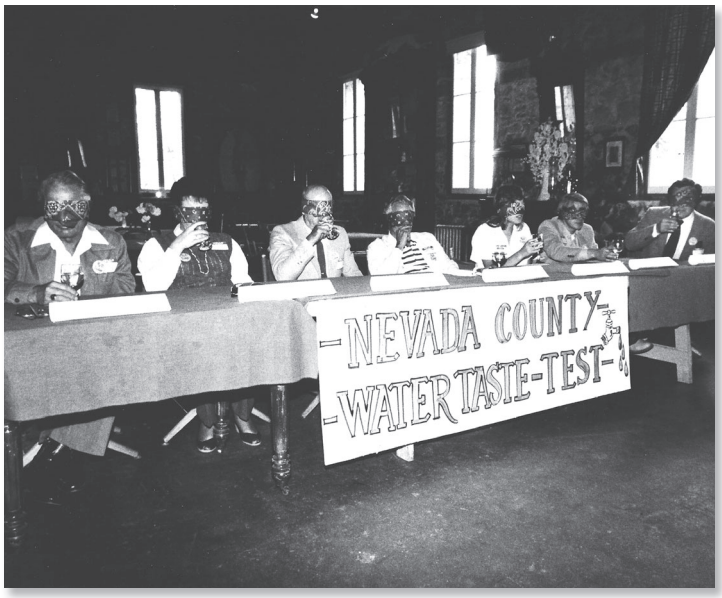
NID was poised to take advantage of this early on. Between 1980 and 1986, the District added five small hydroelectric plants to its existing water systems. The Rollins Power Plant, the largest of these, opened in 1980, followed by Combie South and Scotts Flat in 1984, Combie North in 1985 and Bowman in 1986. Each of the plants was located at the base of existing dams.

James Chatigny

As a new phase of the Yuba-Bear Project, the $8 million Rollins Power Plant was designed by the Tudor Engineering Co. of San Francisco and built under a $5.5 million construction contract with the joint venture of Nielsen-Nickles of Sacramento and the Shirley Co. of Woodland Hills. In foresight of the power plant's addition, during the mid-1970s drought, when water levels were extremely low, NID blasted a 9-foot-diameter hole into a tunnel plug at the base of the dam. Later during construction, water was diverted by a cofferdam, and an enclosure was built within the reservoir to allow the water in the restricted area to be pumped out. Good timing on the project allowed the District to save money by installing a refurbished generator in the new plant. The generator had been used at Melones Reservoir along the Stanislaus River near Jamestown since 1927 and was replaced as the New Melones Dam was opened in 1979.

Rollins Powerhouse

The first Nevada County Drinking Water Taste Test, held May 7, 1985.



The second Drinking Water Taste Test took place in May 1990.

Rollins was reported to be one of the first plants in the nation to be added to an existing dam following the Arab Oil Embargo. When it began generating hydroelectricity in 1980, it could provide enough energy to power 7,000 homes and save the burning of 90,000 barrels of oil per year.

The plant was named in honor of Al Scurr (1925-1978) who rose from laborer to District general manager during his 32-year career. On the District's 60th anniversary on August 15, 1981, NID hosted a dedication of the Albert W. Scurr Memorial Rollins Power Plant. A large number of community, industry and political leaders attended the ceremony.

NID joins forces with cities and county to bolster hydroelectric

As a leader in renewable energy in the state, NID continued to capitalize on the infrastructure and configuration of water supplies in the Sierra. In 1983, the District, Nevada County and Nevada City formed the Nevada Power Authority (NPA), a cooperative alliance that allowed the agencies to issue revenue bonds for new hydroelectric power plants. The NPA was formed after 74.3 percent of voters supported adding hydroelectric energy production. NID's Bowman Power Plant was the first plant built following the formation. Plans were already underway for new hydroelectric plants at Scotts Flat and Combie reservoirs.

In November 1989, the NID Board of Directors approved a significant reorganization of the District, placing the Placer County-based hydroelectric division under the direct management of the general manager.

Water quality guaranteed with new modern treatment plants

Drinking water requires extensive treatment to meet health standards and ensure it is contaminant-free. By 1980, the District operated 15 water treatment plants, though many of these did not have state-of-the art facilities. They were small, remote and expensive to operate and maintain. As a result, NID's treated-water customers were provided with different levels of water treatment, depending on location. While the District addressed the growing population in the region and increasing number of domestic

customers, the focus was on upgrading and consolidating service to larger, modern plants. The cost of treating drinking water was expensive but necessary to provide the community with the safest, best-tasting water possible.

As a backdrop, the federal Safe Water Drinking Act, passed in 1974 and reauthorized in 1986, set national standards for drinking water to protect against health effects from exposure to naturally occurring and man-made contaminants. Thanks to the public health standards established by the Act, nearly every water utility in the United States adopted the same types of water treatment.

Early in the decade, NID operated full four-phase treatment on the North Auburn, Snow Mountain, Lake of the Pines and Lake Wildwood systems. Three-phase treatment was being used in the Elizabeth George and Loma Rica water treatment plants in Grass Valley. At the time, the District also operated five small, direct filtration plants, with treatment by coagulation and filtration at Kenwood, Smartsville, Sherwood, Cascade Shores and Penn Valley. Three plants – Green, Phoenix and Willaura Acres – depended on only chlorination. In time, all were connected to larger, more modern systems, with the exception of Smartsville, which is located outside the District and many miles from any other facilities.

For example, the capacity of the Loma Rica Water Treatment Plant near the Nevada County Air Park was expanded from 3.2 million to 8 million gallons per day. In addition, a new 750,000-gallon tank and 4,900 feet of main lines were added to the Lake of the Pines water system to serve the new Bear River High School. The water project was completed in 1985, and the high school opened the next year.

The expansions allowed smaller systems to tie into the larger primary ones. On November 27, 1986 a preliminary review and initial report were presented for the Willaura Acres System Improvement Project. The project tied the Willaura Acres Water System into the larger Loma Rica Water System by a 5,600-foot-long, 8-inch diameter pipeline. Ultimately the Willaura Acres system was shut down because better quality water was made available from the Loma Rica Treatment Plant.

Upgrading water treatment pays off: NID drinking water excels in taste tests

NID leaders knew that water on the west slope of the Sierra Nevada was of fine quality, and it became even better with high-quality treatment. The District wanted to demonstrate this to the community. Thus was born the Nevada County Drinking Water Taste Test, an event that would bring together the county's water suppliers in a friendly competition.

The first Nevada County Drinking Water Taste Test, held May 7, 1985, at the American Victorian Museum in Nevada City, included water samples from NID and the cities of Grass Valley and Nevada City. A panel of student and community leaders judged the water samples for taste and clarity. Jim Kerr of KNCO Radio emceed the event, and Alan Haley of the Nevada City Winery provided tasting tips. It was a very close contest with NID taking first place.

Five years later, in May 1990, the event celebrated California Water Awareness Month. It attracted five water suppliers. The smallest water supplier – Deer Creek Park Association, a homeowner water group of 211 customers – took first-place honors. Grass Valley Group, supplier of the company's campus on Bitney Springs Road, took second, and the city of Grass Valley placed third. NID and Nevada City received honorable mention. KNCO's Jim Kerr again emceed the event with tasting tips offered by Tony Norskog of Nevada County Wine Guild.

The third Nevada County Drinking Water Taste Test, held in 1994, celebrated National Drinking Water Week. It was held at the Holbrooke Hotel in Grass Valley and featured six water suppliers, with the tiny Washington County Water District joining the group. NID placed first, Grass Valley was second, and Grass Valley Group placed third. Student, business and community judges sipped water, judging the samples for taste, clarity and aroma. NID specialists tested all the samples, reporting that all exceeded state public health standards, with three testing clearer than bottled water.

NID's General Manager Chatigny said the event had been very successful in raising local water awareness: "There are no losers, only winners in this contest. The people of Nevada County should be proud of their water suppliers and know that this area enjoys some of the finest water in the nation."

Further separation of raw and treated water

Since 1972, customers could apply for raw water domestic service. In their requests, applicants needed to prove a hardship, such as failed wells, to apply for these connections. By the early 1980s the District estimated about 1,000 NID customers were using raw water as a domestic source. Some implemented small home water treatment systems to help with purification. Public health officials frowned upon that practice, and put the pressure on NID to resolve the situation as a matter of community health.

A long process began to phase out domestic service for in-home use. NID Directors adopted a policy in 1985 to stop accepting service applications when the applicants noted they planned to use raw water from ditches and canals as a domestic source. And the District teamed with homeowners to form districts for water quality improvements.

In another move to protect water quality, NID addressed the need for backflow prevention to prevent the reverse flow of water in the piped, treated water system. Backpressure occurs when the customer water pressure becomes greater than the District water pressure. Problems may occur when homeowners don't properly install or maintain an adequate backflow device. The increase in the use of backflow preventer valves helped keep water from flowing back into the public water supply. In addition, an encroachment permit program was instituted to prevent construction in close proximity to water conveyance facilities and protect the public water supply.

In 1987, NID was ordered by the state to begin planning water quality improvements for areas where untreated water from open canals was believed to be used in homes.

Water rates increase is a painful reality

The amount of work to modernize NID's systems was not cheap, and Directors needed to tackle the necessity to raise rates to customers. An independent cost of service study in 1980 showed that NID domestic and commercial ratepayers were paying rates close to the District's costs of providing service, but agricultural and raw water uses were paying below cost. Board President Carole Friedrich promised to seek rate balance while preserving affordability for raw water customers.

Trying to cover the cost of service, in January 1981 NID Directors approved a 14.3 percent water rate increase, which was equal to the increase in the Consumer Price Index (CPI). Saying the increase still lagged behind growing costs of operation, Directors increased connection fees to the treated water system by 20 percent to $1,460 for a standard 5/8-inch connection that provided a flow of 20 gallons per minute. The next year rate increases were pegged to the CPI for the fifth year, amounting to an average of 10 percent.

As NID's annual budget reached $8 million in 1984 and the focus remained on improving the treated water system, water rates continued upward at 5.9 percent for domestic users and an average 8.2 percent for raw agricultural water users.

The 1986 NID budget was approved at $10.4 million, and the NID Board continued its practice of adjusting rates to keep up with the increasing costs of doing business. Water rates increased 2 percent in 1987. In 1989, rates for treated water users were increased by an average 3.6 percent while raw water rates went up 4.9 percent.

Facing the realities of the cost of water, NID customers were on a learning curve about the importance of water efficiency practices. It was a time, following the 1970s drought, when water conservation practices were being adopted by water agencies across California. Citizens were beginning to learn that water supplies were limited and needed to be put to their highest and best uses.

Does the Drum Canal at Highway 20 flow uphill?

A bit of a curiosity turned into the talk of the town in the mid-1980s. The discussion centered on the Drum Canal at Highway 20. Was the water flowing uphill?

Traveling up Highway 20 toward Lake Tahoe, people were noticing PG&E's Drum Canal above Bear Valley, where the water appears to be flowing uphill. The canal, which also carried NID water, was often mentioned to PG&E and NID employees. People asked, "How does that water flow uphill?"

The answer is: It doesn't. It just looks that way. To prove the point, Chuck Lauer, NID's lake tender at nearby Fuller Lake, agreed to take his level over to the canal and settle the issue once and for all. His measurement in the mid-1980s showed the canal walls to be level and the water in the canal appeared by comparison to be flowing slightly downhill.

"It's an optical illusion," said Gary Kalsbeek, a former manager of NID's Hydroelectric Division. "When you look at it, the frame of reference for what is level is out of whack."

Kalsbeek said water will run uphill if it is being pumped but that free-flowing water would spill over the sides of the canal before it would climb a hill. The "uphill" canal carries water from Lake Spaulding through several PG&E and NID power plants to Rollins Lake.

When not planning for drought, NID Directors were pressed to deal with near record-breaking rain and snow. The early 1980s brought some of the wettest conditions the District had ever experienced, just a few years after the record-setting drought during the 1970s. In the 1981-82 rainfall season (July 1-June 30), Bowman Reservoir received 127.42 inches of precipitation, 189 percent of average, including 389 inches of snow. It was the wettest year of the century. The following 1982-83 rainfall season brought 103 inches of precipitation, including 334 inches of snow.

One of the biggest snowstorms in recent decades moved over the Sierra foothills March 5-7, 1985, dumping 2-3 feet of snow in areas around Grass Valley and Nevada City. Canals were blocked by snow and ice with overflows reported on smaller ditches. NID crews worked around the clock to keep the water flowing. Maintenance employees broke through ice and snow to keep water flowing into the snowbound Loma Rica Reservoir.

The next year, a series of rainstorms in February 1986 created water flows never before seen in the NID system. District damages were estimated at $1.7 million, and it would be a year before debris and residue would finally be removed from the system. Runoff from the chalk bluffs at Scotts Flat Reservoir created cloudy conditions in the lake but cleared later in the year.

Then the weather took a drastic turn. By February 1987 the region was experiencing a 26-day drought – only a trace amount of rain had fallen compared to about 7.5 inches the year before. Operations Manager Del Hedges took matters

During the harsh winters and hot, dry summers, NID water managers still met all needs, including providing flows for fish.

into his own hands to try to elicit rain. Early one morning, he put on his best rain-dancing shoes and ventured to the parking lot in an attempt to coax moisture out of an otherwise clear sky. The act didn't work.

The roller-coaster continued. A few years later, a frigid snowstorm opened 1989. In February, the so-called Alaskan Express brought major ice buildups in the upper elevation canal systems. NID maintenance crews had to manually float ice down through the canals to prevent blockages. For customers, there were numerous frozen and broken pipes on homes in Cascade Shores, east of Nevada City. Many of the dwellings were owned by absentee homeowners, and leaks in those homes went undiscovered, draining the local water system. It took three days to locate and repair the leaks.

Even after the big storm, it appeared 1989 would be a drier than average year, the third in a row. That was until the spring of 1989 produced a "March Miracle" and a dramatic turnaround. Within 10 days, 30,000 acre-feet of water flowed into NID reservoirs, with seasonal precipitation jumping to 91 percent of average. By June 1, annual precipitation had risen to 68.28 inches, or 103 percent of average for the date.

Throughout the extreme weather conditions, NID water managers needed to adjust levels to meet different water needs throughout the year. The severe storms in the winter meant the reservoirs needed to keeps gates open to allow water to flow through and not back up the systems. And while late spring snowmelt helped to fill the reservoirs, water demand was always highest during the dry months of summer. Stored water needed to be released to irrigate crops, provide drinking water, generate hydroelectric power and support ecosystems with environmental flows in the rivers. The drought-to-deluge pattern constantly kept the water managers on their toes, with daily monitoring and decision-making in order to keep the water flowing to customers.

The 49er Fire burned 33,700 acres.

New NID campus additions

NID had arrived as a modern water supplier with many offices throughout its boundaries. The hub was an 18-acre campus located on West Main Street in Grass Valley. In 1982, the District completed construction of a new purchasing and warehouse building, and then began to expand the main office with a second-story addition. The business center was located in the main building with easy access and ample parking for customers.

Besides improving how the public could interact with the District, strides were being made to modernize technology in the field. It took some time, but by 1987 NID had introduced electronic meter reading. Three meter readers used hand-held computers to read 12,000 meters, with each meter reader averaging 350 meters per day.

Nature wouldn't be outdone – the destructive 49er Fire

The 49er Fire, perhaps the most devastating fire in Nevada County history, raged from North San Juan to Penn Valley in September 1988, burning tens of thousands of acres and destroying hundreds of structures. The fire started in the morning of September 11 when a homeless man set toilet paper on fire off Highway 49 near North San Juan. The spark took off, and flames raced down through Lake Wildwood and Penn Valley and into Rough and Ready. The blaze threatened NID's Lake Wildwood Water Treatment Plant, but spared the plant. Firefighters brought the fire under control September 16. During the blaze, NID crews scrambled to keep the District's water systems intact. Water service was interrupted, but restored in one day. Ultimately, the fire burned 33,700 acres – a total of 53 square miles – and destroyed 312 structures, 89 vehicles and 17 boats. About 4,000 residents were forced to evacuate. The 49er Fire was the third most pernicious fire in state history at the time, causing an estimated $22.7 million in damage.

Even veteran firefighters were stunned by the speed and ferocity of the blaze. "It reminded me of some war scene," said retired CDF Region Chief Bill Holmes, recalling his first view of Lake Wildwood from the air in a retrospective by The Union newspaper in 2018. "All I could see were houses burning and boats on fire floating around randomly. … Both lanes of the road leading to Lake Wildwood were full of trucks and cars full of belongings, pets and horses heading out to Highway 20. It was almost impossible to drive into Lake Wildwood." ■