

A scenic landscape photograph featuring a vibrant turquoise lake in the center. The lake is framed by the dark, intricate branches of a large pine tree in the upper foreground and lush green shrubs in the lower foreground. In the background, a sandy shoreline leads to a dense forest of evergreen trees under a clear sky. The overall scene is bright and natural, emphasizing the beauty of the water and surrounding wilderness.

The need for high-quality drinking water became clear with time as the District population continued to increase.

CHAPTER 11

Water Quality Comes of Age: 1970s

Community Growth and Drought are Challenges



Loma Rica treatment plant

A popular expression was that NID was short for “Not Intended to Drink,” and it wasn’t. From the beginning, the raw water delivered via ditches to farms and fields was intended for irrigation. However, well before the 1970s dawned, the conversation had begun with state public health officials about water quality for domestic use. Discussions with the state can be traced to 1952, when homeowners connected their properties to irrigation ditches and were using untreated ditch water for household use, including as drinking water. State regulators were concerned about public health and needs for filtration and chlorination. Initially, in 1957 and 1958, NID placed chlorinators on domestic supply stations along the ditch systems. At one point, the District operated 19 chlorination stations, which provided disinfection to water supplied to about 2,000 people in a 75-square-mile area.

Yet, the need for high-quality drinking water became clear with time as the District population continued to increase. By the early 1960s, NID had 3,490 domestic customers and 1,238 raw water customers. When, in 1966, the state issued a mandate requiring a Treated Water Master Plan as well as plans for financing the work, the District was prepared to respond.

Definitions of water treatment

The Centers for Disease Control and Prevention (CDC) reports that drinking water sources are subject to contamination and require appropriate treatment to remove disease-causing agents. Public drinking water systems use various methods of water treatment to provide safe drinking water for their communities. Common steps in modern water treatment include:

Coagulation and Flocculation

Often the first steps in water treatment, chemicals with a positive charge are added to the water. The positive charge of these chemicals neutralizes the negative charge of dirt and other dissolved particles in the water. When this occurs, the particles bind with the chemicals and form larger particles, called floc.

Sedimentation

Floc settles to the bottom of the water supply, due to its weight. This settling process is called sedimentation.

Filtration

Once the floc has settled to the bottom of the water supply, the clear water on top will pass through filters of varying compositions (sand, gravel, and charcoal) and pore sizes in order to remove dissolved particles, such as dust, parasites, bacteria, viruses and chemicals.

Disinfection

After the water has been filtered, a disinfectant (for example, chlorine, chloramine) may be added in order to kill any remaining parasites, bacteria and viruses, and to protect the water from germs when it is piped to homes and businesses.

forefront, ultimately leading to the passage of California's Porter-Cologne Water Quality Control Act in 1969 to regulate the quality of drinking water.

While water treatment methods can be traced to ancient Greek and Sanskrit writings, the concept has remained unchanged through the centuries – to use processes to filter and purify water to reach a safe level for drinking. Early water treatment methods included filtration through charcoal, exposure to sunlight, as well as boiling and straining water. Visible cloudiness (later termed "turbidity") was the driving force behind the earliest water treatments, as many sources of water contained particles that had an objectionable taste and appearance.

By the 1970s, the worry over aesthetic problems and pathogens evolved to concerns about industrial and agricultural advances that had created new man-made chemicals, which were leaching into water supplies. A study by the U.S. Public Health Service in 1969 found that only 60 percent of surveyed water systems provided drinking water that met federal guidelines. Modern water treatment, in general, relies on several key processes: dilution, coagulation and flocculation, settling, filtration, disinfection and other chemical processes.

The quality of the water source and the effectiveness of source-water protection and management have a direct bearing on the treatment that is required. NID's water source is pure Sierra snowmelt tapped at the source in higher montane elevations, which ensures a quality start to the supply flow. With the addition of modern water treatment plants, NID could guarantee domestic customers high-quality, safe drinking water.

The legislative protections were vital for public health, but they also established expensive regulations by which NID needed to abide. Throughout the 1970s the District invested \$8 million to expand treated water service.

While NID continued to refine its treated water system, the District also remained true to its origins. On the local front, the debate over irrigation water versus treated water continued. When longtime agricultural water users questioned the

Beyond the District boundaries, water quality for drinking water was a chief concern of federal and state legislators. On the federal side, Congress amended the Federal Water Pollution Control Act, initially passed in 1948, to establish the 1972 Clean Water Act (CWA), which set perimeters to provide safe drinking water for all Americans. On the state front water quality came to the

widening focus on domestic water service, their protests were heeded by the District, and the Directors invested millions of dollars in its raw water delivery system. For example, much effort was put into upgrading the Cascade Canal, built by William Harrison Folsom and put into use in 1860 with 53 cubic-feet per second water flow. The District installed steel framework to hold the side forms used to place concrete walls. The frame was 60 feet long, and was on wheels so crews could advance it after pour and stripping work.

NID's first modern water treatment plant was built on Banner Mountain near Nevada City. Funding for the \$1.3 million plant was spearheaded by local business leader Elizabeth L. "Betty" George, who was serving as president of the Sierra Economic Development District (SEDD). The original water treatment plant, named in her honor, was dedicated on May 27, 1970. When it began operation, it supplied 2,200 customers.

During the Banner Mountain plant dedication, NID General Manager Clendenen noted, "It was natural to name the plant after her; she did so much," He described George as "a dedicated and capable person with a strong desire to serve her community."

"She was very caring about the community," said longtime friend Vera Koehler of Grass Valley. "She had great organizational skills. She got people to work together."

NID Board Secretary Dorothy Miller recalled, "Do your homework – that was one of her favorite sayings. She didn't have much patience for people who weren't prepared."

Grass Valley Planning Director Bill Roberts put it more bluntly: "She had a great ability to put the fear of God in everybody."

At the same time as the Elizabeth George Water Treatment Plant was coming online, NID was building a second plant off Locksley Lane in North Auburn. George was integral in securing a \$1.3 million grant, obtained through SEDD, to construct the North Auburn Water Treatment Plant.

Elizabeth George was a champion of clean water



Elizabeth George was a community leader credited with bringing millions of dollars in economic development

funds into the region in the late 1960s and early 1970s.

After attending college, George returned to Grass Valley and became interested in economic development. Aware of the area's potential for growth, she recognized the need for advanced planning of water and sewer systems.

In 1966, she was appointed to the Nevada County Overall Economic Development Program Committee, a citizen advisory group.

"She became very much involved in that process," recalled Bill Roberts, who was the Nevada County planning director at the time. Roberts said George took the lead in making application and lobbying the federal Economic Development Administration (EDA) in Seattle and Washington, D.C. to gain funding for seven Nevada County projects, including sewer systems for Glenbrook Basin, Hills Flat, Truckee and Donner Summit; sewer improvements in Grass Valley; and water improvements for Donner Summit and NID.

Her accomplishments caused regional EDA officials to ask her to establish a local economic development district, which later became a model for other districts in the state. The Sierra Economic Development District (SEDD) was formed in 1969 and continues to serve Sierra, Nevada, Placer and El Dorado counties. She served as the organization's first president until 1971, and then took over as the group's executive director until 1973, when she passed away.

Albert Scurr



NID was in lockstep with what was occurring nationwide. In 1974, President Gerald Ford signed into law the Safe Drinking Water Act, the first piece of legislation of its kind to provide a comprehensive regulatory framework for overseeing the nation's drinking water supply. The law was the key in setting standards to ensure safe drinking water to all.

Throughout the decade, the number of NID treatment plants built kept up with the demand of the number of domestic customers. The Snow Mountain Water Treatment Plant, east of Nevada City, was built in 1973; and the Loma Rica Water Treatment Plant, near the Nevada County Air Park, followed in 1974. By 1980 NID was operating 15 water treatment plants of various sizes to serve its growing and scattered domestic service areas. Later, operations were consolidated to five modern treatment plants (and a small satellite

NID routinely tests water quality at its water treatment plant laboratories.

plant at Smartsville), with several interties that provide backup supplies in case of emergency or operational needs.

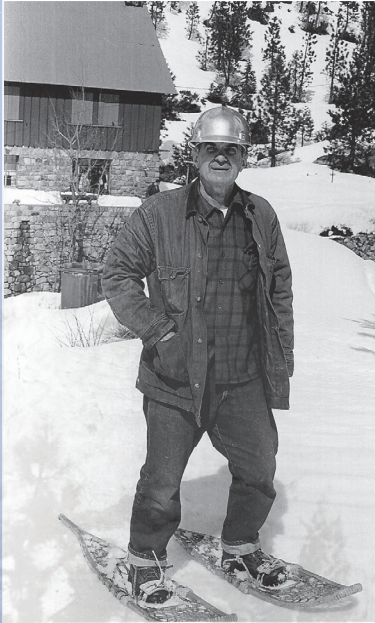
By 1975, NID's customer base had grown to 8,973, and 135 employees worked in the field and in its offices. Throughout the push for quality treated water, employees maintained their focus on their duties to provide water to customers and run an efficient water district.

Change in NID management

While the focus remained on delivering high quality water, there was a shift in NID management early in 1971 when General Manager Clendenen's contract was not renewed, and Albert W. Scurr, the District's Administrative Assistant, took over the head duties until 1977. The likeable and energetic Scurr joined NID in 1946 after serving in the U.S. Army during World War II. During his 31-year career at the District, he rose through the ranks from a laborer to the top management position. His positions included laborer, a surveyor



Frank “Showshoe Fritz” Plautz was a true mountain man



One dedicated, and colorful, employee who helped keep the water flowing from the Sierra source was Frank “Showshoe Fritz” Plautz, a true mountain man. For 22 years, from 1960 to 1982, he and his wife, Ramona, lived at remote Bowman Reservoir, where Fritz worked as NID’s lake tender.

On the Sierra’s western slope, at the 5,600-foot elevation, summers are pleasant, but in winter the tiny road to Bowman disappears under a wall of snow. It was 15 miles to the nearest plowed road, and each year the couple planned to be snowbound for six to seven months.

Snowshoe Fritz earned his nickname because he shunned the use of snowmobiles or even skis and instead used snowshoes to make his daily rounds, where he charted lake levels, adjusted water releases and operated a small weather station. He used four models of snowshoes, depending on snow conditions.

In a 1979 story in The Sacramento Bee, Fritz said each winter brought new challenges, but that he and Ramona had been snowed in as early as November 9 and as late as June 7.

At the time, their only contact with the outside world was the weekly helicopter flight that arrived with mail, newspapers and fresh vegetables. Firewood and most food and supplies were stockpiled prior to winter. Before cell phones, satellite television, Internet and Skype, Fritz had land line telephone service – when the lines didn’t go down in snowstorms -- and a shortwave radio. A small hydroelectric generator at the base of Bowman Dam provided electricity and a small antenna picked up Sacramento television stations.

As might be expected, Fritz was a self-styled weather expert. In The Sacramento Bee newspaper story, he recalled December 1964 when in one month he measured 45 inches of precipitation -- the equivalent of 37 feet of snow -- at the stone and wood cabin that he and Ramona called home. In the winter of 1969, they had to climb in and out of the house through a third-story window.

in the Engineering Department, and later as the right-of-way agent for the Yuba-Bear Power Project.

Scurr led a number of projects with expertise. For example, the Cascade Canal extension was a multiphased project, with the last contract awarded in April 1973 to construct about 11,300 feet of pipeline varying from 16 to 48 inches in diameter. This was the last piece to complete the upgrade of the entire Cascade system, a significant accomplishment.

The record drought of 1976-77 challenges NID operations

Perhaps one of the most serious challenges in NID history was the unprecedented two-year drought of 1976-77. Through the dry 1975-76 rainfall year, District water managers assumed normal precipitation conditions would return at least by the next year. But after a second abnormally dry year, the Board of Directors became concerned. The 1976–77 winter was the second driest water year on record in California, producing only 30.8 inches of precipitation at Bowman

Frederick Bandy



Reservoir, just 46 percent of average. Back-to-back dry years presented the District with serious water shortages, which led to water rationing and serious financial shortfalls. The conditions were so dire that

in February 1977 the District investigated the possibility of increasing precipitation through cloud seeding. The plan was to team up with PG&E and the North American Weather Consultants for a program to cover an area of 180 square miles including the Middle Yuba and South Yuba rivers, everything above Jackson Meadows and Bowman reservoirs. A report indicated cloud seeding usually increased precipitation by 5-10 percent.

Although silver iodide is more effective in seeding, the proposed program planned to use less-objectionable dry ice. The Board voted unanimously to move ahead with the cloud-seeding partnership.

The crisis continued, and in May 1977 Directors declared a drought emergency, triggering water rationing. Homeowners were required to water their lawns with only hand-held hoses; no sprinklers were allowed. In its 1977 annual budget, NID faced a \$272,225 deficit because water sales had been cut by about 50 percent due to the drought. Directors needed to implement a \$4 monthly drought surcharge to customers, which continued for three months. With employee support, the Board also imposed an 8 percent wage cut.

Importantly, the drought served as an eye-opener, bringing a realization that NID's water supplies were limited and entirely dependent on Sierra snowmelt. Water levels had dropped to dangerously low levels, so low the District closed Rollins Reservoir to public use.

Scurr steps down; Bandy named General Manager

In 1977, after serving more than five years as NID General Manager and guiding the District through some difficult times, Scurr stepped down. He said changing times had brought a need for a change at the District. In his letter of resignation, he noted, "A professional manager I am not, and it is my belief that from this time forward a professional manager seems to be a necessary must. ... By presenting my request at this time, it will enable the Board to take sufficient time to advertise and find a professional manager that will accomplish the long-range projections of the District. It is of utmost importance to me that the request not be construed as or interpreted as deserting the position." He emphasized, "It should be accomplished as smoothly as possible for the sake of all concerned, including of most concern, employees and the general public."

A dedicated employee and respected man, the community praised Scurr upon his departure. For example, a handwritten note from Don Wagner, an industrial psychologist, read: "I personally think you are too nice a guy to be in a job that often demands actions that you would find undesirable ... be thankful that you are not burdened with drive or ego that is sometimes considered to be necessary in a Manager's job." Additionally, Nevada City Attorney Harold Berliner said, "Congratulations on all the work you have put into making things go. Even though it may not seem to be appreciated, you have the satisfaction of knowing it was done."

On September 16, 1977, Frederick G. Bandy was named general manager, beating out three other highly qualified candidates. Bandy was hired at \$30,000 annually, and a new position, assistant general manager, was created, to which Scurr was appointed. Bandy brought 20 years of irrigation district experience, including working for the Bureau of Land Management in Merced and working with the Madera Irrigation District

First woman elected as Director



Carole B. Friedrich of Nevada City in 1977 became the first woman to be elected to the NID Board of Directors. Friedrich, who spent six years on the Board, including service as

president, also had been the first woman to serve on the Nevada City Council.



Rollins Reservoir dropped substantially in 1976 during the drought.

as a groundwater investigator and ditch tender. Bandy's focus at NID was on improving the District's financial condition and bringing major hydroelectric projects online.

He literally had the elements to battle from the onset. Working to recover from the devastating effects of the drought in 1978, NID adopted a bare-bones \$5.3 million budget, which would be further slashed to \$4.7 million in 1979. Customers, some of whom were angered by drought surcharges on their water bills, voiced concerns to the District. Longtime NID Legal Counsel David Minasian provided an elegantly simple vision saying, "Benefits the people within its boundaries can derive from their district will be measured by the extent to which the people within the district cooperate to make it a success."

Fortunately, Rollins Reservoir filled and spilled on January 6, 1978, and drought rules in effect for nearly a year were lifted by the Board of Directors in February. Putting its experience to use, the District began to formulate drought contingency plans, which would be put to the test in future years.

Facing new challenges in treated and raw water distribution, water quality legislation and management changes, the 1970-80 decade also brought the largest growth NID had seen, to 13,684 customers. To keep up with the changes, in 1979 the District installed its first in-house computer system; it had been contracting out for computer service since 1965. ■