

## **NID Urban Water Management Plan Update (October 2001)**

*The following notes and observations are derived from NID's 2001 Urban Water Management Plan update. The UWMP represents an effort by the Nevada Irrigation District to describe its present and projected water demands and the supplies and management programs to meet those demands. The Plan also examines the reliability of the system and the impact, if any, of droughts. (See [regional water agencies](#) (PDF, 32 KB) worksheet for additional summary data.)*

The Nevada Irrigation District (NID) service area encompasses 287,000 acres with, in 2000, 4,940 seasonal irrigation customers, 640 year round irrigation customers and 16,482 treated water hook-ups (estimated 38,000 urban users). NID's mountain watersheds cover 57,000 acres and include the upper portions of the Middle Fork of the Yuba River above Milton Diversion, Canyon Creek above Bowman Reservoir and Deer Creek. NID holds permits for eight treatment plants with a combined capacity of 32.4 million gallons. There are ten main storage reservoirs totaling a maximum of 250,280 acre/feet. The trend in water production per connection shows a slight increase over the past 10-year period.(Sections 2.3, 2.3.1, 2,3,4 and 3.3)

The purpose of the plan follows the premise that the efficient use of urban water supplies is extremely important to NID. The Plan compares past, current and projected District water supplies and demands; identifies a hypothetical three-year worst case drought scenario and its effect on District urban water supplies; discusses existing and anticipated demand management measures; evaluates a water shortage contingency plan; provides a response to an urban water shortage emergency; and reviews District use of recycled water. (Sections 1.1 and 1.3)

Other Demographic Factors (Section 2.3.3) finds that: "An estimate of growth within NID's boundaries, using population, would not be practical due to a lack of demographic information which corresponds with the NID boundary."

There are four main sources of water supply (Section 3.1), totaling, in 2000, 348,815 acre/feet per water year: Watershed Runoff (192,384 af), Carryover Storage (144,295 af), Contract Purchase under the PG&E contract (8,936 af) and Recycled (3,200 af). Based on experience with past droughts, storage should be held at a level not less than 70,000 af of minimum pool. This includes 39,675 af of minimum pool for environmental needs. Uncaptured fish releases of approximately 7,700 af are required annually. There is a maximum of 59,361 af available under the PG&E contract which is, however, restricted to 23,591 a/f during dry year conditions. Recycled water is made up of effluent from four municipal wastewater treatment plants, which is captured and mixed with surface waters.

Reliability (Section 4): NID's current method of operating the Upper Division watershed (i.e., retaining additional water supplies in carryover storage at the end of each water year) was tested in 1990–1992 with another series of extremely dry years; the driest on record. No deficiencies in the treated supply were experienced. Using a projected growth rate of 1.6% per year, NID assumes water supplies will meet demand over the

next twenty years. NID proposes to expand water treatment plant capability by 22mgd over the next twenty years.

The Plan looks at a hypothetical three-year minimum water supply, assuming 50% less run-off than the driest years of 1990-92. Deficiencies could reach as high as 19%, triggering a Stage III Alert with little effect on urban users.

In Section 5, Water Use Provisions, the Plan does not foresee significant increases in water demand over the next 20 years. Should the area urbanize, the water used for agriculture will be converted to domestic purposes. Treated water customers tend to use less water per acre than their agricultural counterparts, resulting in very little change in overall demand. (In fact, in recent years NID's total demands have actually declined slightly due, it is believed, to this phenomenon.) Agricultural use equals nearly 90% of demand with the bulk of the water used on irrigated pasture.

Comparing supply and demand, the Plan again notes that NID has sufficient supply to meet demand through 2020 and that as urban users are a small fraction of demand they would not be impacted by drought.

Section 7 addresses the fourteen Demand Side Management Measures for treated water customers as specified in the Urban Water Management Planning Act. However, NID's focus is on supply management and not on demand management, finding it preferable as it can reduce water loss and waste without depending on the uncertain response of individual water users.

- DMM 1: Water Survey Programs. NID compares billing rates to prior year, indicating possible leaks.
- DMM 2: Residential Plumbing Retrofit. Annual water savings would be minimal to NID does not have a retrofit program
- DMM 3: System Water Audits, Leak Detection and Repair. NID conducts audits and leak repair on an ongoing basis (not to be confused with open canals).
- DMM 4: Metering with Commodity Rates. NID is fully metered with an inclining block rate structure (see DMM 11 below).
- DMM 5: Large Landscape Conservation. NID does not have jurisdiction to implement a program. It does offer advice.
- DMM 6: High Efficiency Washing Machine Rebates. A recent addition to the UWMP. NID does not plan to implement a program.
- DMM 7: Public Information Programs. NID does so through information on bills, newsletters and the like.
- DMM 8: School Education Programs. NID staff routinely visits schools to give informational talks that occasionally include conservation.
- DMM 9: Conservation Programs for Commercial, Industrial and Institutional. There are no large commercial or industrial users.
- DMM 10: Wholesale Agency Programs. NID makes DSMM recommendations to Grass Valley and Nevada City.

- DMM 11: Conservation Pricing. Since 1996, NID has used an inclining block rate structure for urban users. There is a base block of 2 HCF (hundred cubic feet) with usage above the base billed at a higher rate. There are three blocks.
- DMM 12: Water Conservation Coordinator. None.
- DMM 13: Water Waste Prohibition. NID has adopted a rule that water service can be refused to a wasteful user.
- DMM 14: Residential Ultra-Low-Flush Toilet Replacement Programs. NID relies on cities and counties to enforce low-flush toilet code requirements through the building permit process.
- DMM 15: Agricultural Water Conservation Programs. Refers to 1991 Agricultural Water Management Plan. Primary measures include use of reclaimed water, flow gauges, capital improvements and public relations. The Plan states that NID's raw water delivery system demonstrates a very low loss factor, and that most lost water finds its way back into the system.

In the Water Shortage Contingency Plan, various strategies for dealing with emergencies and shortages are discussed. In the event of a supply emergency (undefined), rationing for health and safety reasons would include directing all available flows to a water treatment plant, notifying customers to curtail all unnecessary uses, and intensifying system water loss prevention measures. A Drought Contingency Plan establishes priorities and water rationing stages. Stages III, IV and V would reduce untreated water deliveries by 25%, 35% and 50%. Stage III would also introduce steeper urban water rates (to be determined at the time). NID has mandatory prohibitions on water wasting and excessive use penalties.