Central Nevada Regional Water Authority

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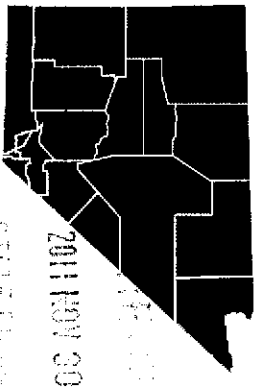

November 28, 2011

Jason King, P.E., State Engineer
c/o Susan Joseph-Taylor
Chief Hearing Officer,
Nevada Division of Water Resources
901 South Stewart Street, Suite 2002
Carson City, Nevada 89701

Subject: Central Nevada Regional Water Authority Comments in the Matter of Protested Application 53987, 53988 (Cave Valley), 53989, 53990 (Dry Lake Valley), 53991, 53992 (Delamar Valley), and 54003 through 54021 (Spring Valley)

Dear Mr. King:

The purpose of this letter is to place on paper the Central Nevada Regional Water Authority (Authority) comments in the matter of the Southern Nevada Water Authority (SNWA) applications (53987-53992 and 54003-54021) for groundwater from Cave, Dry Lake, Delamar and Spring Valleys. These applications were filed by SNWA for the purpose of implementing its plan to obtain groundwater from White Pine and Lincoln Counties for use in Las Vegas Valley. The plan is called the SNWA Groundwater Development Plan. Regarding the recently completed six week hearing by the State Engineer on the subject applications, the Authority was pleased to be able to pay a portion of the cost to webcast the hearing. I and a number of Authority board members watched the hearing via webcast, and the comments contained in this letter are based in large part on the hearing testimony and exhibits. The Authority wants to thank you for allowing the public to submit written comments on the protested applications to December 2, 2011.

At the outset it may be helpful to say a few words about the Authority so you will know why it is concerned about the applications and therefore the SNWA Groundwater Development Plan. The Authority is a eight county unit of local government that collaboratively and proactively addresses water resource issues of importance to the member counties. The Authority has a 21-member board of directors appointed by the county commissioners of the eight counties. At this time ten board members are county commissioners. The Authority members are Churchill, Elko, Esmeralda, Eureka, Lander, Nye, Pershing and White Pine Counties. These counties cover approximately 65 percent of Nevada's land area. The Authority mission is to protect the water resources in the member counties so these counties will not only have an economic future, but their valued quality of life and natural environment is maintained.

Regarding the State Engineer's decision on the protested applications, NRS 533.370 (7) calls for the decision to be "in writing and include findings of fact, conclusions of law and a statement of the underlying facts supporting the findings of fact." The comments contained in this letter are linked to the findings of fact the State Engineer shall make pursuant to NRS 533.370.

1. **Does SNWA have a need for the water?** NRS 533.370 (6)(a) states in determining whether an application for an interbasin transfer of groundwater must be rejected, the State Engineer shall consider whether the applicant has justified the need to import the water from another basin. Testimony and exhibits provided at the recently completed hearing do not show SNWA has a compelling need for the water resources associated with the applications. It appears SNWA's need for groundwater from rural Nevada is based on a) SNWA's service area population projections, b) SNWA's projected water consumption rate for water customers in Las Vegas Valley, and c) SNWA not seriously pursuing other sources of water for its service area.

a. **How realistic are the SNWA population projections?** SNWA's population projections come from the University of Nevada Las Vegas Center for Business and Economic Research (CBER). In 2008 the CBER population projection showed Clark County's population growing from approximately 2 million people to 3.65 million people in 2035. In June 2009 and again in June 2010 the CBER reduced its 2035 population projection to 3.13 million people, a reduction of 520,000 people from its 2008 projection for 2035. But, the Nevada State Demographer's population projection for Clark County for 2011 is 1,934,871, and its 2030 population projection is 2,430,896 (see the attached document entitled *Nevada County Population Projects, 2010 to 2030*, dated October 1, 2011). Population projections are linked to economic forecasts, and it is important to note that Clark County's population growth is based in large part on tourism and the jobs created by tourism. In the past when a large resort opened in Clark County there was always an increase in the number of tourist coming to the County. In the last few years when a large resort opened in Clark County there has not been an increase in the number of tourist visiting Clark County. Also, as you know, there is more competition today for the gaming dollar in communities throughout the United States, as well as in foreign countries. Finally, recently Nevada Energy asked the Public Utilities Commission of Nevada to approve an amendment to its 2010 Integrated Resource Plan (Docket No. 11-08011). The amendment called for new electric transmission to support growth in the Las Vegas area. The Public Utilities Commission of Nevada required Nevada Energy to change its proposed amendment to show little growth in the Las Vegas area during the planning period (2010 to 2030). The bottom line is SNWA's population projections are at best suspect since they are not supported by the state organization responsible for projecting state and local government populations (Nevada State Demographer's Office), as well as the state regulatory organization that uses population projections to regulate utility resource planning and investments (Public Utilities Commission of Nevada). The Nevada State Demographer and the Public Utilities Commission of Nevada have a proven and reliable track record of projecting population over an extended period of time.

b. **What happens if SNWA reduces its per capita water use rate to 166 gpcd?** SNWA states it has reduced per capita water use rate in its service area from 315 gallons

per capita per day (gpcd) in the year 2000 to 223 gpcd in the year 2010; hence, a reduction of 92 gpcd or 29 percent in 10 years. And, SNWA said it plans to further reduce its water use rate to 199 gpcd by the year 2035; that is, a reduction of 24 gpcd or 11 percent over 25 years. But, if SNWA's service area water use rate was reduced from 223 gpcd to 166 gpcd by 2035 – a reduction of 57 gpcd or 26 percent – and the Clark County population by 2035 is 3.13 million people (CBER's questionable high population projection), then total water demand in SNWA's service area would be about the same as it is now. Surely SNWA can reduce its water use rate to 166 gpcd over the 25 year period. This statement is made in light of the fact that 166 gpcd is a higher water use rate than Los Angeles' current water use rate, and it is comparable to the current Albuquerque and Phoenix water use rates. Also, SNWA's water reduction plan does not include industrial water conservation. It is estimated there would be significant additional water saved (ten's of thousands of acre-feet of water per year) if power plants in Clark County were to change from wet to dry cooling. Most new power plants in the Southwest are designed and built with dry cooling, and the estimated water saving is in the neighborhood of 90 percent. In 2004 NV Energy placed into service the new 530 megawatt Walter M. Higgins Generating Station at Primm, Nevada. The power plant is dry-cooled and produces enough electricity for 320,000 Nevada households (see the attached NV Energy document entitled *Walter M. Higgins Generating Station*). The cost/benefit of converting Clark County power plants from wet-cooling to dry-cooling, and the certainty of significant saved water, makes the proposed action highly desirable when compared to the uncertainties and cost of the Groundwater Development Project. In addition, new water conservation technologies are coming on the market every year at affordable costs, and that will continue to occur in the future; therefore, even more water can be saved in SNWA's service area. The bottom line is SNWA cannot justify the need for the Groundwater Development Project – even if the Project did not cost billions of dollars and did not have significant adverse impacts on the water-losing areas – when you consider SNWA's purported water supply need can be obtained via conservation.

c. **Are there viable alternatives sources of water for the SNWA service area?** The answer to the question is yes, if the findings of fact show SNWA needs additional water resources. Viable alternatives to the Groundwater Development Project include at a minimum increased conservation, desalination, grey water use, rainwater capture, reclaim water use, and smart growth planning. At the top of the list is water conservation (see 1.b. above). Regarding desalination of ocean water, it is unfortunate that SNWA is quick to dismiss desalination given SNWA's reputation for thinking outside the box, ability to develop agreements amongst warring water entities, and the 15 billion-dollar plus cost of the Groundwater Development Project. The technology and economics of desalination have improved significantly over the last few years. There are over 15,000 desalination plants in the world. Within two years, 30 percent of the water supplied to Australia's capital cities (i.e., Perth, Sydney, Adelaide and Melbourne) will come from the ocean as a result of water utilities building desalination plants. SNWA can provide funds to the appropriate entity or entities to build desalination plants on the coast of California and/or Mexico in exchange for some of California's and/or Mexico's Colorado River water. A February 21, 1994 High Country News article entitled *Las Vegas wheels and deals for Colorado River water* states the general manager of SNWA, Patricia

Mulroy, said if Nevada can add 200,000 to 250,000 acre-feet of Colorado River water to the state's current annual allocation of 300,000 acre-feet from the Colorado River, then she will recommend dropping the agency's claims on rural Nevada water. Mike Dunbar, General Manager/Secretary, of the South Coast Water District (Laguna Beach, California area) said at the October 14, 2011 Great Basin Water Forum the cost of building a ocean desalination plant in Southern California that produces 50,000 acre-feet of water a year is between $400 and $600 million. Therefore, four 50,000 acre-feet per year desalination plants producing 200,000 acre-feet per year will cost between $1.6 and $2.4 billion. The South Coast Water District and four other water districts in Southern California have formed a partnership to build a desalination plant by the end of 2018. The five agencies are currently operating a pilot desalination plant at Dana Point. Mr. Dunbar said there is great uncertainty regarding the ability of Southern California communities to receive water from the California State Water Project due to environmental problems and court rulings, and therefore Southern California communities are seriously looking at the earth's largest water reservoir, the Pacific Ocean, as the future source of its water supply. Mr. Dunbar said the current energy cost of an acre-foot of water delivered to Southern California communities via the Colorado River conveyance system and the State Water Project is about the same as the estimated energy cost of an acre-foot of water produced by an ocean desalination plant. Mr. Dunbar said he has spoken to many water agency people in Southern California, and they share his views on the need for desalination plants and less reliance on water from the State Water Project water and the Colorado River. He said if SNWA provided funds for four 50,000 acre-feet a year desalination plants then the Southern California water entities benefiting from the plants would pay all plant operation and maintenance costs. In exchange for SNWA providing $1.6 to $2.4 billion for the four desal plants Mr. Dunbar said he felt an agreement could be developed where SNWA receives Colorado River water. Therefore SNWA could pay for the desalination plants, at a fraction of the Groundwater Development Project costs, and receive 200,000 acre-feet of Colorado River water via its existing conveyance and treatment facilities at Lake Mead. Finally, more can be done relative to grey water use, rainwater capture and reclaim water use in the SNWA service area. They are not the solution by themselves, but they would provide a safety cushion of water supply when added to the aforementioned conserved water.

2. **Does SNWA have the ability to finance the Groundwater Development Project?** NRS 533.370 (1)(c)(2) states the State Engineer shall determine whether or not the applicant provides satisfactory proof it has the "Financial ability and reasonable expectation actually to construct the work and apply the water to the intended beneficial use with reasonable diligence." For the last few years SNWA has consistently estimated the capital cost of the Groundwater Development Project to be 3.2 billion dollars, in 2007 dollars. In fact, a SNWA document entitled *Summary of Cost Estimate for Clark, Lincoln and White Pine Counties Groundwater Development Project, June 2011* states the cost is 3.2 billion-dollars, in 2007 dollars. But, a June 27, 2011 SNWA document entitled *Ability to Finance Report to the Southern Nevada Water Authority* states the principal cost for the Groundwater Development Project is $7,283,335,000.00, and the interest on that amount over the payment period (2012 to 2078) is $8,180,111,453.00; hence, the total project cost in terms of capital and interest is $15,463,446,453.00

(approximately 15.5 billion-dollars). This cost does not include a contingency for cost overruns. A review of capital intensive public works and Department of Defense projects built in the United States over the last 30 years, including the current SNWA Lake Mead tunnel and third straw project, shows cost overruns have caused many of the projects to cost at least twice the original cost estimate. A question that begs an answer is whether or not there is a minimum amount of water SNWA needs from the Groundwater Development Project to make the Project economically feasible? Is the 15.5 billion-dollar Project economically feasible if the pipeline conveys 30,000 acre-feet a year, 40,000 acre-feet a year, or even 177,000 acre-feet per year (SNWA's pending water rights applications for Spring, Dry Lake, Cave, Delamar and Snake Valleys)? Another question is did SNWA set an absolute dollar limit on the cost of the Project? A review of SNWA's recent financial statements show the organization does not have deep pockets, particularly during economic hard times. Will the parties responsible for paying the lion's share of the Groundwater Development Project's development and construction costs, the Las Vegas Valley water utilities and their ratepayers, support the Project now that they know the development and construction cost of the Project will be at least 15.5 billion dollars, and Las Vegas Valley residential water bills will at least triple for the same amount of consumed water? The Project development and construction costs will be made even more alarming by the Project's large operation and maintenance costs, and the fact that growth will not be paying for the Project. One can see unrest coming from Las Vegas Valley water utilities and their ratepayers (residential customers and business customers) as more information on the Project's costs is made public. This unrest will surely be compounded if SNWA tries to make all Nevadans pay for the Project via legislative action. For example, in Utah there is discussion about having all Utah taxpayers pay for a portion of a proposed Lake Powell pipeline project by earmarking some of the state sales tax to help pay off future pipeline bonds. That proposal has created considerable opposition in Utah.

3. **Is the SNWA Groundwater Development Project environmentally sound?** NRS 533.370 (6)(c) states in determining whether an application for an interbasin transfer of groundwater must be rejected, the State Engineer shall consider "Whether the proposed action is environmentally sound as it relates to the basin from which the water is exported." The *Clark, Lincoln, and White Pine Counties Groundwater Development Project Draft Environmental Impact Statement* prepared by the Bureau of Land Management over a six year period clearly shows the Groundwater Development Project will cause significant adverse environmental impacts as a result of groundwater pumping. The groundwater elevation will be lowered as much as 200 feet in some areas, and 100 feet in many areas. Environmental resources to be adversely impacted by the Groundwater Development Project include surface water and associated habitats (springs, ponds, wetlands, meadows, perennial streams, playas and swamp cedar woodlands), phreatophytic shrubland vegetation, air resources (windblown dust emissions), aquatic biological resources (e.g., native fish and special status aquatic species) and wildlife (e.g., big game, small and large mammals, upland game birds, waterfowl, nongame birds, bats, reptiles and invertebrates). The DEIS also identified adverse impacts on recreation, rangeland and grazing, wild horses, cultural resources, Native American traditional values and the local economy. SNWA's response to the DEIS-identified environmental

impacts is not to worry because there are two stipulated agreements in effect between the U.S. Department of Interior and SNWA that will keep adverse environmental impacts from occurring in the basins of origin. The stipulated agreements are called the *Stipulation for the Withdrawal of Protests* and they pertain to Spring, Dry Lake, Delamar and Cave Valleys. A close examination of the DOI/SNWA stipulation agreements show there are no specific provisions requiring an immediate cessation of pumping should adverse effects be observed. Rather, if a problem is noted, the Executive Committee, created by the stipulation agreements to provide monitoring oversight, first strives to reach a consensus solution to the problem. If consensus cannot be reached, after an undefined period of time the Committee will seek a negotiated resolution through either the Nevada State Engineer or another neutral third party. The stipulation agreements do not address what takes place should these negotiations fail, presumably resolution of the issue would then be sought in the courts. Therefore, a major fault with the stipulation agreements is that there is no clearly defined timeframe for reaching a negotiated resolution of an issue and no requirement that pumping be suspended while the resolution is sought. Rob Dubac wrote in a 2007 Journal of Land, Resources, and Environmental Law article entitled *Snake Valley to Las Vegas: Keep your Pipes Out of Our Aquifer* that "Common sense tells us that once SNWA has invested billions of dollars on the installation of infrastructure necessary for the project, it is conceivable that the federal government would be reluctant to insist on a cessation of pumping. This real possibility was acknowledged by the appellate court in Wilderness Society v. Morton when confronted with the granting of a right-of-way permit for the trans-Alaska pipeline. The Wilderness Society court summarily dismissed the federal assertion that the pipeline's permit could be revoked in the event conditions of the permit were breached. The court noted that once the permit was approved, it would for all real purposes be irrevocable . . . because it would put the United States in a position of either suffering continued trespass on its lands or destroying a multibillion dollar investment." The bottom line is there are indisputable facts that say the Groundwater Development Project is not environmentally sound, and the Project cannot be made environmentally sound via the DOI/SNWA stipulations. In fact, highly respected scientists question whether or not the adverse effects of a lowered groundwater table on the order of 10 plus feet can ever be mitigated.

To sum up, the subject applications for an interbasin transfer of groundwater should be denied because the State Engineer cannot make the findings of fact called for in NRS 533.370.

I close with statements made by Patricia Mulroy and David Donnelly (former SNWA chief engineer) in the aforementioned February 21, 1994 High Country News article entitled *Las Vegas wheels and deals for Colorado River water* (see the attached article). Ms. Mulroy said "the groundwater importation plan has been proclaimed the singularly most stupid idea anyone's ever had." David Donnelly said in the same article "Frankly, it doesn't make any sense. We don't want to build any more dams, reservoirs, or construction projects. We want to do things that cost less and that are more politically, socially and environmentally acceptable."

Again, the Central Nevada Regional Water Authority wants to thank you for the opportunity to submit written comments on the subject SNWA applications and therefore the associated SNWA Groundwater Development Project. If you have any questions, please do not hesitate to contact me.

Sincerely,

Steve Bradhurst

Steve Bradhurst
Executive Director

Attachments (3)

c: Central Nevada Regional Water Authority Board of Directors

High Country News
For people who care about the West
Topic: Water Department: Feature

Las Vegas wheels and deals for Colorado River water

Feature story - From the February 21, 1994 issue by Jon Christensen
by Jon Christensen

Las Vegas is prepared to give up its controversial quest to pipe underground water from rural Nevada, says the area's top water official. But only if the booming metropolis can get more water from the Colorado River.

That's a big if, requiring changes in how the Colorado River has been run for most of this century. But Las Vegas, one of the fastest-growing cities in the nation, just might have the juice to pull it off. Patricia Mulroy, the hard-driving general manager of the Southern Nevada Water Authority, is betting everything on it.

As Las Vegas has boomed in recent years so has the power of her agency. It merged over the past few years with several competing water districts, and now serves 900,000 people, 65 percent of the state's population.

Mulroy is throwing that power into changing how the Colorado River is managed. If she can get access to Colorado River water for Las Vegas, Mulroy is offering to abandon one of the biggest urban water grabs in Western history. The move puts Las Vegas at the center of reforms that are changing the way water is managed throughout the West. And it may unite her urban constituency and environmentalists against traditional water interests.

It's a startling about-face. Four years ago, when Mulroy unveiled a plan to pump all the available groundwater from 26 valleys stretching as far as 200 miles north of Las Vegas (HCN, 4/6/92), she asserted that rural Nevada could not stand in the way of the state's economic engine. The plan seemed a bold blast from the past. Its scale - over 1,000 miles of pipeline - would dwarf the Owens Valley pipeline to Los Angeles, to which it was often compared.

Mulroy now acknowledges that the groundwater importation plan has been proclaimed "the singularly most stupid idea anyone's ever had." But, she says, "I don't think we would have gotten attention to southern Nevada's needs without the outpouring of concerns on those applications."

David Donnelly, chief engineer for the water authority, is also openly disdainful of the importation project that he defended until recently. "Frankly, it doesn't make any sense. We don't want to build any more dams, reservoirs, or construction projects. We want to do things that cost less and that are more politically, socially and environmentally acceptable."

With the groundwater project - a traditional approach to a city's need for water - out of the way for the moment, Mulroy and her colleagues now see Las Vegas as a major player on the Colorado River. Last year, she took her message to Washington, D.C., as the first chairman of the Western Urban Water Coalition, a new lobbying group for cities seeking a greater share of water in the West.

Western water attracts visionaries. Some pursue mirages; others prove to be ahead of their time. And there are a few who figure out how to get what they want from the changes they see coming.

Patricia Mulroy may be one of the practical visionaries of the post-reclamation era. She appears to understand where reform of Western water is headed: away from new construction projects and toward better management of rivers and ecosystems. She watched Denver's Two Forks Dam proposal go down to defeat. Closer to home, she saw Southern California fail to get its peripheral canal. From those lessons, she has come up with an alternative to a massive construction and dewatering project.

Mulroy says that if Nevada can add 200,000 to 250,000 acre-feet of Colorado River water to the state's current annual allocation of 300,000 acre-feet from the Colorado River, then she will recommend dropping the agency's claims on rural Nevada water. Those claims are for about 200,000 acre-feet.

Mulroy says the water needed to supply the next century of growth in southern Nevada is not a major amount, given the allocations to other states on the Colorado River. But to get there, she acknowledges, will require "major rethinking" up and down the river.

The 1922 Colorado River Compact - a major strand in the web of interstate compacts, legislation, regulations, court decisions and rules collectively known as the "law of the river' - allots 7.5 million acre-feet of water annually to the upper-basin states of Colorado, Wyoming, Utah and New Mexico, and 7.5 million to the lower basin states of Nevada, Arizona and California. Of that, California gets 4.4 million acre-feet, Arizona gets 2.85 million acre-feet, and Nevada gets 300,000 acre-feet. Most of California's and Arizona's Colorado River water goes to agriculture, as does the upper-basin's water.

Those allocations made sense when the 1922 compact was signed, and when the West was seen as a potential agricultural powerhouse if it only had water. But today irrigated agriculture is on the defensive.

In California, for example, Rep. George Miller helped put together a coalition of urban interests and environmentalists that pushed a major water reform bill through the Congress in 1992, despite intense opposition from California agricultural interests. That reform will make it easier for cities to buy up agricultural water.

Southern Nevada, an overwhelmingly urban area, has essentially no irrigated agriculture for Las Vegas to buy and dry up. Unlike California and Arizona, where huge chunks of those states' Colorado River water goes to farms, the Southern Nevada Water Authority already controls nearly all of Nevada's Colorado River water. Nor will conservation help much. Even with the most optimistic projections for conservation, Mulroy says, the Las Vegas area will need more water soon after the turn of the century.

To get that extra water, Mulroy wants to change the "law of the river" to allow southern Nevada to buy, borrow or otherwise bargain for water from other states' farmers and ranchers and deliver it through the agency's existing "straw" in Lake Mead.

The "law of the river" presents a formidable obstacle to her quest - an obstacle rooted in the traditional West, much like the laws and traditions governing mining, logging and grazing. But in an era when irrigation districts across the West are having trouble paying for their water, Las Vegas has what they need: cash. Mulroy has also found new allies in high federal positions, and in cities across the West, who share her vision of a changing region that needs some new rules.

Before he became secretary of Interior, Bruce Babbitt advised the rural Nevada counties fighting the Las Vegas groundwater importation plan. Now, Babbitt says, he is an "advocate" for southern Nevada.

"I'm trying to find a way for Nevada to get an increased share of Colorado River water," he announced last summer. "Las Vegas needs an expanded water supply from the Colorado River."

Around the same time, Betsy Reike, the assistant secretary of Interior who oversees the Bureau of Reclamation, was explaining her plans for reform to an annual gathering of high-powered water managers and attorneys at the University of Colorado's Natural Resources Law Center.

"The Colorado River has been locked up in the chains created by the law of the river," Reike said. "It is time to figuratively melt those chains." Reike said the Department of Interior, which manages most of the river, would "patiently leverage change" on the Colorado River, starting in the lower basin. That was just what Patricia Mulroy, sitting in the audience, hoped to hear.

The Bureau of Reclamation is drafting rules and regulations to "provide some new flexibility by allowing and facilitating voluntary transfers of water" on the lower Colorado, says Ed Osann, an assistant to bureau director Dan Beard. The proposal will be the subject of public workshops and hearings after it is released in March.

"This is something that does not require fundamental changes in the law of the river" or "tampering with the basic apportionments among and between states," says Osann. But it will be "a big step forward in encouraging the marketing of water in the lower Colorado."

The Southern Nevada Water Authority has already opened a small crack in the Colorado River

arrangement with a three-way deal Mulroy put together last year with the powerful Metropolitan Water District of Southern California and the Central Arizona Water Conservation District.

The California and Nevada urban water districts agreed to pay the financially troubled irrigation district (HCN, 8/10/92), which operates the Central Arizona Project, to store 100,000 acre-feet of Colorado River water in groundwater aquifers under farms served by the aqueduct. During droughts, the cities could draw on that stored water.

The deal, which was approved as a demonstration project by the Bureau of Reclamation, is simple conceptually but complicated in the details. Basically, some of Arizona's share of the Colorado River is moved through the Central Arizona Project canals - at Nevada's and Southern California's expense - to Arizona farmers who normally irrigate with groundwater. These farmers use the Colorado River water, leaving the groundwater in the aquifers.

In a drought, the farmers would draw on the stored groundwater, and California and Nevada would take additional water out of Lake Mead. Other conditions apply, of course. But in outline, some of Arizona's share of Colorado River water is being transferred to Nevada and Southern California.

"It's a chip away at water marketing" on the Colorado River, says David Donnelly, chief engineer of the Las Vegas water agency. "It required people to bend the rules a little bit. It's significant and precedent-setting that both California and Nevada now have water stored in Arizona."

Eventually, Las Vegas hopes to use its growing muscle to enlarge that crack and nearly double its supply from the Colorado River. Las Vegas is eagerly awaiting a proposal from the Arizona Department of Water Resources and the Central Arizona Water Conservation District that might expand the program to "several million acre-feet," says Donnelly. But, he says, the water-banking program and the Bureau of Reclamation's new rules for the lower Colorado River are not likely to provide all the water Las Vegas needs. That will require negotiations with other Colorado River states.

Those states are watching how the bureau's efforts "to leverage change" will help Mulroy's crusade. The 1922 Colorado River Compact was designed to protect the other six compact states from the economic power of California.

The protection was needed because, if money and population had been the only measure, all the Colorado River water would have quickly flowed to Southern California, rather than remaining in Wyoming and Utah and Arizona to raise low-value crops like alfalfa and cotton. Not much has changed from 1922 to today.

From the perspective of Utah or New Mexico or Wyoming, still awaiting further urbanization and industrialization, watching their compact water flow off marginal farms and toward buyers in Las Vegas is no different than watching it flow to Los Angeles.

Mulroy has not yet directly taken on the upper-basin states of Colorado, Wyoming, Utah and New Mexico. She says her immediate goal is to change how the lower-basin states (California, Nevada and Arizona) apportion water among themselves. She says that until Arizona, Nevada and California have their house in order, it doesn't make sense to talk to the upper basin states about water transfers.

Arizona is her most obvious target, given the financial trouble of the Central Arizona Project. But California also uses an enormous amount of Colorado River water for agriculture. And even high-value crops in California can't compete with urban uses when it comes to water.

Mulroy laid out her strategy for negotiating with other lower basin states at recent hearings before the Nevada state engineer on the Southern Nevada Water Authority's applications for water in the Virgin River (HCN, 12/14/92). This river originates in southwestern Utah, and flows through the northwestern corner of Arizona and into Nevada, where it joins the Colorado River in Lake Mead.

The Virgin River is not part of the Colorado River Compact or any other interstate agreement. Nevada, therefore, claims that the Virgin's water is up for grabs by whoever can first develop it.

On paper, the agency's development plans call for building a dam and reservoir near Mesquite, Nev., and a pipeline to Las Vegas. Under the current law of the Colorado River, Mulroy says, Las Vegas must take the water before it enters Lake Mead and becomes part of the Colorado River.

But the Southern Nevada Water Authority doesn't really want to build the dam and pipeline just to fulfill that technicality. She says the agency would rather let the river flow into Lake Mead and take the water from there. Environmentalists, who oppose the damage that dam, reservoir and pipeline would cause, also favor letting the water flow into Lake Mead.

That, however, would require loosening the "law of the river" to allow "wheeling" water through Lake Mead. And that is the prize that Las Vegas is really playing for, says Mulroy. "The Virgin is the linchpin to the rest of the Colorado River."

Getting more water through Lake Mead, including water from the Virgin River, will require negotiations with Utah and Arizona, says Mulroy, and agreement from other states, especially California, which holds priority rights on the lower Colorado by virtue of a 1963 Supreme Court ruling. So far, officials in those states have been reluctant to let Las Vegas push too far too fast.

Mulroy says approval of the Virgin River applications for a dam and pipeline, expected from the Nevada state engineer later this year, is a necessary step to strengthen Nevada when it comes time to negotiate with the other states. Having united her southern Nevada power base, having placated most of her opponents in state, and having found a common agenda with other urban centers and the Bureau of Reclamation, Mulroy is confident it can be done.

"The preparatory pieces are in place," she says. "Now we'll push hard to move forward." She predicts that changes on the lower Colorado will move quickly this year and negotiations with other states will get under way. Las Vegas will be a "driver" of change, she vows. But, she adds, the new water regime must be ready by the year 2000.

"You can't take a community as thriving as this one and put a stop sign out there," Mulroy warns. "The train will run right over you."

Opponents of southern Nevada's plan to import water from rural Nevada remain skeptical of Las Vegas's intentions. "We're all for more water from the Colorado River," says Don de la Cruz, an organizer with the Nevada environmental group Citizen Alert. Keeping water in the Virgin River is the best way to protect it, he agrees.

But as for Mulroy's offer to drop the rural groundwater applications, so far, he says, "that's just talk."

The talk, however, has won over many other opponents. Mulroy convinced towns along the Virgin River in Nevada to drop their protests of the Las Vegas applications by cutting them in on the water and offering them a seat on the Southern Nevada Water Authority. She got the Interior Department to drop protests by the U.S. Fish and Wildlife Service, Bureau of Land Management and National Park Service by promising that the agency would comply with all required federal studies and permits.

And the remaining opponents of the Las Vegas groundwater importation plan - the rural counties and environmentalists - support what the district wants: more water from the Colorado River so that the city doesn't drain 20,000 square miles of rural land in southeastern Nevada. n

Jon Christensen is Great Basin regional reporter for High Country News, based in Reno, Nevada.

To receive the Bureau of Reclamation's proposed changes in rules governing the lower Colorado River due out in March, contact Robert Towles, Regional Director, Bureau of Reclamation, P.O. Box 61470, Boulder City, NV 89006-1470 (702/293-8411).

Nevada County Population Projections
2010 to 2030

Prepared By:
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October 1, 2011

Prepared for the NV Department of Taxation In Conjunction with the NV Small Business Development

Nevada Small Business Development Center

The Business Assistance Network

Population Projections for Nevada's Counties 2011 to 2030
Nevada State Demographer's Office October 1, 2011 Based On 2010 Estimate

	Carson City			Churchill			Clark		
	Total Population	Change Previous Year	Percentage Change	Total Population	Change Previous Year	Percentage Change	Total Population	Change Previous Year	Percentage Change
2010	55,850			26,360			1,968,831		
2011	55,488	-362	-0.6%	26,695	335	1.3%	1,934,871	-33,960	-1.7%
2012	56,105	617	1.1%	27,146	451	1.7%	1,979,586	44,715	2.3%
2013	56,869	764	1.4%	27,609	463	1.7%	2,020,355	40,769	2.1%
2014	57,779	910	1.6%	28,083	474	1.7%	2,057,178	36,823	1.8%
2015	58,690	912	1.6%	28,513	431	1.5%	2,091,895	34,717	1.7%
2016	59,603	913	1.6%	28,900	387	1.4%	2,124,505	32,610	1.6%
2017	60,337	734	1.2%	29,189	289	1.0%	2,149,624	25,119	1.2%
2018	60,943	606	1.0%	29,374	185	0.6%	2,165,478	15,854	0.7%
2019	61,375	432	0.7%	29,580	206	0.7%	2,186,518	21,040	1.0%
2020	61,843	468	0.8%	29,753	173	0.6%	2,209,526	23,008	1.1%
2021	62,263	420	0.7%	29,891	138	0.5%	2,232,023	22,497	1.0%
2022	62,624	361	0.6%	30,015	124	0.4%	2,253,101	21,078	0.9%
2023	62,983	359	0.6%	30,181	166	0.6%	2,274,554	21,453	1.0%
2024	63,332	349	0.6%	30,365	184	0.6%	2,295,641	21,087	0.9%
2025	63,684	352	0.6%	30,534	169	0.6%	2,316,339	20,698	0.9%
2026	64,067	383	0.6%	30,737	203	0.7%	2,337,186	20,847	0.9%
2027	64,526	459	0.7%	30,967	230	0.7%	2,359,054	21,868	0.9%
2028	64,943	417	0.6%	31,187	220	0.7%	2,381,693	22,639	1.0%
2029	65,459	516	0.8%	31,393	206	0.7%	2,406,007	24,314	1.0%
2030	65,993	534	0.8%	31,628	235	0.7%	2,430,896	24,889	1.0%

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Population Projections for Nevada's Counties 2011 to 2030
Nevada State Demographer's Office October 1, 2011 Based On 2010 Estimate

	Douglas			Elko			Esmeralda		
	Total Population	Change Previous Year	Percentage Change	Total Population	Change Previous Year	Percentage Change	Total Population	Change Previous Year	Percentage Change
2010	49,242			52,097			1,145		
2011	49,062	-180	-0.4%	53,113	1,016	2.0%	1,180	35	3.1%
2012	49,032	-30	-0.1%	54,142	1,029	1.9%	1,207	27	2.3%
2013	49,090	58	0.1%	55,180	1,038	1.9%	1,215	8	0.6%
2014	49,236	146	0.3%	56,226	1,046	1.9%	1,203	-12	-1.0%
2015	49,428	192	0.4%	57,219	993	1.8%	1,194	-9	-0.7%
2016	49,665	237	0.5%	58,159	940	1.6%	1,189	-5	-0.4%
2017	49,945	280	0.6%	59,005	846	1.5%	1,185	-4	-0.3%
2018	50,263	318	0.6%	59,778	773	1.3%	1,183	-2	-0.2%
2019	50,577	314	0.6%	60,475	697	1.2%	1,181	-2	-0.2%
2020	50,891	314	0.6%	61,112	637	1.1%	1,180	-1	-0.1%
2021	51,229	338	0.7%	61,692	580	0.9%	1,178	-2	-0.2%
2022	51,564	335	0.7%	62,222	530	0.9%	1,179	1	0.1%
2023	51,891	327	0.6%	62,716	494	0.8%	1,174	-5	-0.4%
2024	52,203	312	0.6%	63,172	456	0.7%	1,172	-2	-0.2%
2025	52,500	297	0.6%	63,584	412	0.7%	1,173	1	0.1%
2026	52,781	281	0.5%	63,971	387	0.6%	1,169	-4	-0.3%
2027	53,045	264	0.5%	64,335	364	0.6%	1,169	0	0.0%
2028	53,290	245	0.5%	64,678	343	0.5%	1,173	4	0.3%
2029	53,517	227	0.4%	65,004	326	0.5%	1,174	1	0.1%
2030	53,724	207	0.4%	65,304	300	0.5%	1,177	3	0.3%

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Population Projections for Nevada's Counties 2011 to 2030
Nevada State Demographer's Office October 1, 2011 Based On 2010 Estimate

	Eureka			Humboldt			Lander		
	Total Population	Change Previous Year	Percentage Change	Total Population	Change Previous Year	Percentage Change	Total Population	Change Previous Year	Percentage Change
2010	1,609			18,364			5,992		
2011	1,658	49	3.0%	18,711	347	1.9%	6,251	259	4.3%
2012	1,705	47	2.8%	19,105	394	2.1%	6,517	266	4.3%
2013	1,745	40	2.3%	19,548	443	2.3%	6,759	242	3.7%
2014	1,777	32	1.8%	20,039	491	2.5%	6,976	217	3.2%
2015	1,803	27	1.5%	20,606	567	2.8%	7,032	57	0.8%
2016	1,824	21	1.2%	21,249	643	3.1%	6,928	-104	-1.5%
2017	1,845	21	1.2%	21,866	617	2.9%	6,843	-85	-1.2%
2018	1,866	21	1.1%	22,454	588	2.7%	6,759	-84	-1.2%
2019	1,891	25	1.3%	23,005	551	2.5%	6,693	-66	-1.0%
2020	1,919	28	1.5%	23,527	522	2.3%	6,638	-55	-0.8%
2021	1,946	27	1.4%	24,008	481	2.0%	6,592	-46	-0.7%
2022	1,972	26	1.3%	24,463	455	1.9%	6,556	-36	-0.5%
2023	1,996	24	1.2%	24,890	427	1.7%	6,526	-30	-0.5%
2024	2,017	21	1.1%	25,301	411	1.7%	6,498	-28	-0.4%
2025	2,035	18	0.9%	25,678	377	1.5%	6,472	-26	-0.4%
2026	2,052	17	0.8%	26,034	356	1.4%	6,447	-25	-0.4%
2027	2,066	14	0.7%	26,372	338	1.3%	6,423	-24	-0.4%
2028	2,081	15	0.7%	26,696	324	1.2%	6,397	-26	-0.4%
2029	2,094	13	0.6%	27,010	314	1.2%	6,371	-26	-0.4%
2030	2,108	14	0.7%	27,311	301	1.1%	6,344	-27	-0.4%

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Population Projections for Nevada's Counties 2011 to 2030
Nevada State Demographer's Office October 1, 2011 Based On 2010 Estimate

	Lincoln			Lyon			Mineral		
	Total Population	Change Previous Year	Percentage Change	Total Population	Change Previous Year	Percentage Change	Total Population	Change Previous Year	Percentage Change
2010	4,631			52,334			4,471		
2011	4,681	50	1.1%	52,700	366	0.7%	4,511	40	0.9%
2012	4,735	54	1.2%	53,720	1,020	1.9%	4,747	236	5.2%
2013	4,790	55	1.2%	54,711	991	1.8%	4,889	142	3.0%
2014	4,846	56	1.2%	55,673	962	1.8%	4,937	48	1.0%
2015	4,902	56	1.2%	57,862	2,189	3.9%	4,983	46	0.9%
2016	4,958	56	1.1%	61,277	3,415	5.9%	5,027	44	0.9%
2017	5,014	56	1.1%	62,373	1,096	1.8%	5,060	33	0.7%
2018	5,070	56	1.1%	63,164	791	1.3%	5,081	21	0.4%
2019	5,125	55	1.1%	63,912	748	1.2%	5,111	30	0.6%
2020	5,182	57	1.1%	64,561	649	1.0%	5,144	33	0.6%
2021	5,238	56	1.1%	65,204	643	1.0%	5,173	29	0.6%
2022	5,295	57	1.1%	65,772	568	0.9%	5,194	21	0.4%
2023	5,351	56	1.1%	66,335	563	0.9%	5,214	20	0.4%
2024	5,408	57	1.1%	66,901	566	0.9%	5,240	26	0.5%
2025	5,464	56	1.0%	67,458	557	0.8%	5,258	18	0.3%
2026	5,513	49	0.9%	68,046	588	0.9%	5,282	24	0.5%
2027	5,560	47	0.9%	68,663	617	0.9%	5,311	29	0.5%
2028	5,604	44	0.8%	69,278	615	0.9%	5,339	28	0.5%
2029	5,644	40	0.7%	69,917	639	0.9%	5,370	31	0.6%
2030	5,682	38	0.7%	70,592	675	1.0%	5,403	33	0.6%

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Nevada State Demographer's Office October 1, 2011 Based On 2010 Estimate

	Nye			Pershing			Storey		
	Total Population	Change Previous Year	Percentage Change	Total Population	Change Previous Year	Percentage Change	Total Population	Change Previous Year	Percentage Change
2010	45,459			7,133			4,234		
2011	46,296	837	1.8%	7,189	56	0.8%	4,208	-26	-0.6%
2012	47,286	990	2.1%	8,097	908	12.6%	4,272	64	1.5%
2013	48,102	816	1.7%	8,013	-84	-1.0%	4,335	63	1.5%
2014	48,744	642	1.3%	7,976	-37	-0.5%	4,397	62	1.4%
2015	49,328	584	1.2%	7,889	-87	-1.1%	4,457	60	1.4%
2016	49,854	526	1.1%	7,857	-31	-0.4%	4,515	58	1.3%
2017	50,284	430	0.9%	7,817	-41	-0.5%	4,567	52	1.2%
2018	50,558	274	0.5%	7,764	-53	-0.7%	4,599	32	0.7%
2019	50,866	308	0.6%	7,723	-41	-0.5%	4,629	30	0.7%
2020	51,163	297	0.6%	7,692	-31	-0.4%	4,659	30	0.6%
2021	51,522	359	0.7%	7,676	-16	-0.2%	4,695	36	0.8%
2022	51,853	331	0.6%	7,663	-13	-0.2%	4,731	36	0.8%
2023	52,217	364	0.7%	7,663	0	0.0%	4,764	33	0.7%
2024	52,619	402	0.8%	7,672	9	0.1%	4,801	37	0.8%
2025	53,017	398	0.8%	7,685	12	0.2%	4,836	35	0.7%
2026	53,430	413	0.8%	7,713	28	0.4%	4,879	43	0.9%
2027	53,891	461	0.9%	7,725	12	0.2%	4,914	35	0.7%
2028	54,374	483	0.9%	7,735	9	0.1%	4,948	34	0.7%
2029	54,886	512	0.9%	7,747	12	0.2%	4,985	37	0.7%
2030	55,432	546	1.0%	7,766	19	0.2%	5,022	37	0.7%

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	Washoe		
	Total Population	Change Previous Year	Percentage Change
2010	417,379		
2011	409,680	-7,699	-1.8%
2012	419,590	9,910	2.4%
2013	428,741	9,151	2.2%
2014	437,132	8,391	2.0%
2015	445,260	8,129	1.9%
2016	453,126	7,866	1.8%
2017	459,570	6,444	1.4%
2018	464,440	4,870	1.1%
2019	468,756	4,316	0.9%
2020	473,616	4,860	1.0%
2021	478,459	4,843	1.0%
2022	482,755	4,296	0.9%
2023	486,846	4,091	0.8%
2024	490,825	3,979	0.8%
2025	494,788	3,963	0.8%
2026	498,846	4,058	0.8%
2027	503,303	4,457	0.9%
2028	507,964	4,661	0.9%
2029	512,895	4,931	1.0%
2030	517,889	4,994	1.0%

White Pine		
Total Population	Change Previous Year	Percentage Change
9,503		
9,712	209	2.2%
9,940	228	2.3%
10,147	207	2.1%
10,332	185	1.8%
10,464	133	1.3%
10,544	80	0.8%
10,620	76	0.7%
10,703	83	0.8%
10,784	81	0.8%
10,865	81	0.8%
10,949	84	0.8%
11,025	76	0.7%
11,095	70	0.6%
11,164	69	0.6%
11,217	53	0.5%
11,265	48	0.4%
11,315	50	0.4%
11,360	45	0.4%
11,402	42	0.4%
11,436	34	0.3%

State Total		
Total Population	Change Previous Year	Percentage Change
2,724,634		
2,686,006	-38,628	-1.4%
2,746,932	60,926	2.3%
2,802,094	55,162	2.0%
2,852,529	50,436	1.8%
2,901,522	48,993	1.7%
2,949,178	47,656	1.6%
2,985,141	35,963	1.2%
3,009,474	24,333	0.8%
3,038,199	28,724	1.0%
3,069,268	31,070	1.0%
3,099,735	30,467	1.0%
3,127,982	28,246	0.9%
3,156,394	28,412	0.9%
3,184,329	27,935	0.9%
3,211,719	27,390	0.9%
3,239,415	27,696	0.9%
3,268,637	29,221	0.9%
3,298,737	30,100	0.9%
3,330,872	32,135	1.0%
3,363,704	32,832	1.0%

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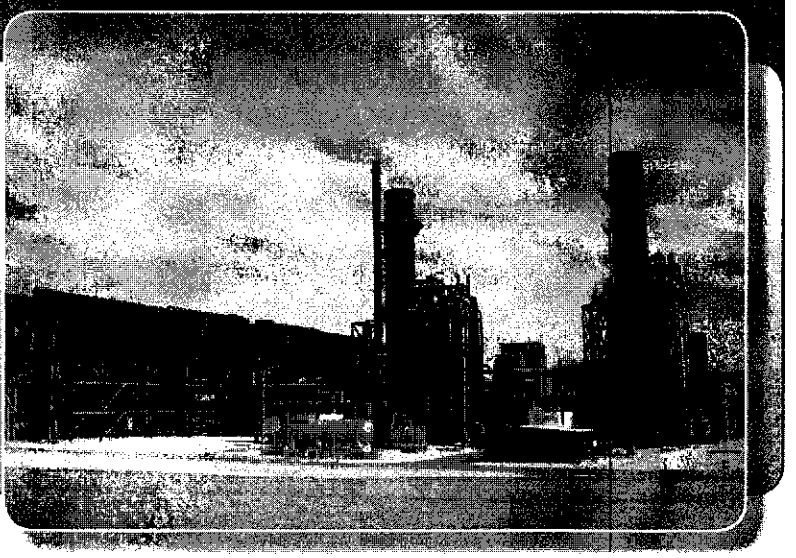
Walter M. Higgins Generating Station



Location: Primm, Nevada

Peak Generating Capacity: 530 Megawatts

Plant Description: The Walter M. Higgins Generating Station is a clean-burning natural gas-fueled power plant located in Southern Nevada near the California border. The plant utilizes two highly efficient Westinghouse 501FD combustion turbines to produce electricity. Additionally, the exhaust from the two turbines is recycled to produce steam for an Alstom STF30C steam turbine to make additional electricity for NV Energy customers.

The plant went into service in 2004. Unlike conventional power plants that use substantial amounts of water for cooling, the Higgins Station uses a six-story-high dry cooling system. Similar to a car radiator, 40 massive fans (34 feet in diameter) are used to condense the steam and cool plant equipment.

Employment: Approximately 17 employees

Interesting Features:

- The plant can produce enough electricity to serve approximately 320,000 Nevada households.
- In addition to the dry cooling system, the Higgins Station also saves water by re-using "grey water" from three neighboring casino operations. Grey water refers to water from sinks, showers, tubs, washing machines, etc.
- The Higgins Station has performed in the top 10 percent for combined-cycle plants in the United States, based primarily on its high customer availability rate of 99 percent.
- NV Energy annually provides approximately $34 million in tax revenue to Clark County that benefits general county operations, schools, libraries, and other civic activities.

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