In the late 1990s, the Southern Nevada Water Authority (SNWA) worked with the U.S. Bureau of Reclamation and the Colorado River Basin states to develop agreements expected to provide the Las Vegas Valley a secure water supply for the next two decades. Lakes Mead and Powell were brimming, and California’s plan to reduce its usage from more than 5 million acre-feet per year (afy) to its base allocation of 4.4 million afy was expected to help maintain lake levels even as use within Arizona and Nevada increased. Then came the drought—at a magnitude that had no probability of occurring, according to U.S. Bureau of Reclamation models based on a century of historical data. In the blink of an eye, half a decade’s work to manage the Colorado River and meet supplies faded, as did water levels in the Colorado River’s two primary reservoirs.

For Nevada, the situation was especially dire. Granted by far the smallest consumptive use allocation (300,000 afy) among the river’s users, the state’s largest population and economic center depends upon the Colorado for 90 percent of its water supply. Local groundwater provides the remaining 10 percent. Through direct reuse and return flow credits, these resources supply more than 500,000 afy. Unlike its neighbors, Southern Nevada has no agricultural water to serve as a potential buffer. The picture was vivid: two million people too dependent on the Colorado.

Finding an Alternative Supply
Recognizing that without a reliable water supply, Southern Nevada’s economy would collapse, SNWA resource planners considered their options. One of the best was found within Nevada’s own borders. Despite its arid climate, the state has extensive groundwater resources, recharged annually by high-elevation snowfall. Nearly two decades previously, one of SNWA’s member agencies, the Las Vegas Valley Water District (LVVWD), filed applications for 180,000 afy of unused groundwater throughout the east-central portion of the state. The applications have been part of SNWA’s potential resources since they were filed. SNWA officials now believed the time had come to act upon those long-standing applications.

The proposed project entails developing up to 200,000 afy of groundwater: 164,000 afy by SNWA and the remainder for Lincoln County. SNWA’s groundwater rights would be developed from wells in six basins in east-central Nevada. Facilities to transport the water include 327 miles of underground pipeline, pumping stations, regulating tanks, power facilities, and a water treatment facility, located largely on federal land.
LVVWD’s decision to seek permission to use the groundwater resources was based on hydrology reports from the Nevada Division of Water Resources, U.S. Geological Survey, and others that revealed a water-rich carbonate layer beneath the sizable alluvial aquifers within the remote east-central valleys. Chief among the reports was an MX missile siting study conducted by the U.S. Air Force and USGS Reconnaissance Series reports in Nevada which detailed a vast groundwater supply in more than 40 valleys of the eastern Great Basin. The basins contain millions of acre-feet of groundwater within the upper 100 feet of the aquifers, annually recharged by hundreds of thousands of acre-feet of snowmelt and runoff.

Hydrologic, environmental, and legal perspectives supported the pursuit of water rights in these areas. Nevada water law includes clear provisions to foster interbasin transfers of water, as well as safeguards to protect both existing water users and environmental resources from unreasonable effects. The requirement of a federal Environmental Impact Statement (EIS) for such a project also helps ensure responsible use of the resource.

Nevertheless, many rural Nevadans object to the project, believing it may impact their region despite these precautions.

**Precedent and Safeguards Exist**

Some critics of the proposed project claim that this importation plan is unprecedented. However, it is similar in scope to both the Central Arizona Project and California’s State Water Project, although smaller in volume and designated specifically for municipal and industrial use. Even within Nevada, the concept of interbasin transfers for municipal use is nothing new: Las Vegas, Reno, Carson City, Wendover, Tonopah, and other municipalities all have drawn water from outside their own valleys. While this project is certainly larger in scale than those, so is the amount of unused water available. The questions are, how much water should be permitted, and what conditions must be applied to its use in order to protect the environment and surrounding users?

Those questions are being answered by the Nevada State Engineer and the Bureau of Land Management (BLM). Under Nevada law, property ownership does not include water rights. All of Nevada’s water is considered a public resource.

The proposed project would pump nearly 200,000 afy of groundwater from six basins and transport it along the route shown.

Continued on next page.
managed by the state, and those who want to use it must meet several criteria and be granted a permit. The quantity permitted is determined by the State Engineer, who also controls the “on-off” switch in perpetuity and can require a user to reduce or even cease pumping if unacceptable impacts occur. The State Engineer already has approved LVWV’s groundwater use applications for a total of about 79,000 afy in Spring, Cave, Dry Lake, and Delamar valleys; 47,000 afy was denied. Hearings are ongoing for 64,500 afy applied for in Snake and Coyote Springs valleys.

The Nevada State Engineer’s purview includes environmental considerations under the provision of “public interest,” but explicit environmental safeguards are also contained within the National Environmental Policy Act and Endangered Species Act, which are applicable because the project involves rights-of-way across federal lands. The Bureau of Land Management began preparation of an EIS in 2004, which is anticipated to be completed in late 2009. The EIS will utilize a groundwater model, currently in development, to identify potential effects of groundwater pumping. The analysis will consider potential water level declines, effects on vegetation and species, spring and surface water flows, and other resource areas such as air quality, noise, cultural resources, and socioeconomics.

Times Have Changed

Some critics compare the proposed project to the Owens Valley project in early 20th century California. Such a comparison is not fitting because the latter project was conducted before environmental laws existed, and the Owens Valley dust bowl was created not because of groundwater withdrawals but because of large-scale surface water diversions. The only commonality of the two projects is the movement of water from rural areas for municipal use.

SNWA has voluntarily entered into stipulation agreements with several federal agencies that call for extensive long-term hydrologic and environmental monitoring, as well as coordinated management of groundwater pumping. SNWA will develop this water supply with flexible management options and is prepared to redistribute or alter the pumping regimen as conditions require.

The Finances

The initial cost of the project, based upon the infrastructure needed to convey 125,000 afy of water, was estimated at approximately $2 billion in 2004 dollars. A more recent estimate, developed for the EIS and based upon the conveyance of 200,000 afy of water—including a portion to be delivered to neighboring Lincoln County—put the cost at $3.5 billion in 2007 dollars. When the water right permitting and environmental processes are completed, a final estimate will be possible.

Funding for this project is through local sources, not federal funds. Like SNWA’s other major capital projects, a large portion of the in-state groundwater project will be funded by regional connection charges collected from new residential and business customers. Existing customers will share some of the costs, but they will benefit from increased protection from the risk of drought and reduced flows in the Colorado River. Given the nature of the permitting processes and the project’s scope, the first major deliveries are not expected before 2015, with construction continuing to the northernmost segments of the project for several years thereafter.

SNWA believes that the question is not whether we can afford to undertake a project of this size; rather, it is whether a community of this size can afford to operate without a more diverse portfolio of water supplies such as this project would provide. Most communities in the Southwest have several water supply sources to ensure reliability even when drought impacts a portion of their resources. The in-state groundwater project, which provides access to an available resource that is less susceptible than surface supplies to yearly fluctuations, is Nevada’s effort to do the same.

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