Research Division, Nevada Legislative Counsel Bureau

POLICY AND PROGRAM REPORT

Water Resources

April 2016

As the most arid state in the nation, Nevada has always faced challenges when managing its valuable water resources. Other western states share many similar issues; however, Nevada's tremendous population growth over the past decades, coupled with an unusually severe and ongoing drought, poses special challenges.

Since most surface waters in the State were put to use before the twentieth century and Nevada's allocation of Colorado River water is a mere 300,000 acre-feet per year, determining the sustainability of groundwater sources is a critical concern. Conservation measures, water banking, water transfers, water reuse, and conversions of water to new uses are possible sources of relief, as are the possibility of desalination or other options in the future.

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OVERVIEW OF NEVADA WATER LAW

Like 17 other western states, Nevada has adopted the prior appropriation doctrine. The prior appropriation doctrine was first developed in the nineteenth century in response to the water needs of mining and agricultural irrigation—uses that were often not located near surface waters. Nevada's water law is now considered one of the most comprehensive water laws in the West.

The cornerstone of the prior appropriation doctrine is beneficial use as "the basis, the measure and the limit of the right to use water." The beneficial use requirement means that water must actually be put to use for such recognized beneficial uses as: commercial, industrial, irrigation, mining, municipal, power generation, recreation, stockwatering, storage, or wildlife. If the water is not put to beneficial use, the right to such water is lost.

WATER BELONGS TO PUBLIC

***Nevada Revised Statutes* (NRS) 533.025**

"The water of all sources of water supply within the boundaries of the State whether above or beneath the surface of the ground, belongs to the public."

The primary concepts of Nevada water law are the Rule of Priority ("First in time, first in right") and the Beneficial Use Requirement ("Use it or lose it").

The basic statutory principles of Nevada water law in use today were adopted in 1913. Nevada began regulating groundwater in 1939 although groundwater development was very limited until the 1960s. Nevada's water law is set forth in Chapters 533 ("Adjudication of Vested Water Rights; Appropriation of Public Waters") and 534 ("Underground Water and Wells") of NRS. Over the years, numerous court decisions and orders of the State Engineer have refined the law.

Water rights may be acquired by: (1) adjudicating a right beneficially used prior to the enactment of water law (known as "vested" rights); or (2) applying to the State Engineer to appropriate unallocated water and perfecting the right by putting the water to beneficial use (known as "certificated" or "perfected" rights). Domestic wells generally are exempt from the requirement to obtain a permit for water rights.

State Engineer

The Office of the State Engineer, created in 1903, is responsible for the administration of Nevada water law. The State Engineer is also the executive head of the Division of Water Resources in the State Department of Conservation and Natural Resources. The State Engineer determines the rights of claimants to water, the use to which water may be put, the quantity of water reasonably required for beneficial use, and where water may be used.

In addition, the State Engineer is responsible for:

- Quantifying existing water rights;
- Monitoring water use and maintaining related data and records;
- Processing reports of conveyances (transferring ownership of water rights);
- Reviewing recharge projects;
- Overseeing State and civil decrees, and assisting in federal decrees;
- Reviewing water availability for new subdivisions;
- Overseeing dam safety;
- Appropriating geothermal water;
- Licensing and regulating well drillers and water rights surveyors;
- Reviewing flood control projects;
- Coordinating water planning and conservation plans; and
- Providing technical assistance to the public and governmental agencies.

Legislature's Role

The Legislature has made changes to Nevada water law over time and has conducted several interim studies regarding the State's water resources. With the passage of Assembly Bill 198 (Chapter 338, *Statutes of Nevada*) by the 2015 Legislature, the Legislative Committee on Public Lands has been tasked with conducting a study of water conservation and alternative sources of water for Nevada communities during the 2015-2016 Interim. The measure sets out the scope of the study, which includes a review of issues relating to water resources, water use, and the apportionment of groundwater and requires the Committee to submit its findings and recommendations to the 2017 Legislature. Other duties of the Committee include monitoring the activities of water districts and purveyors.

Interstate Water Resources

Colorado River

In addition to Nevada, the states of Arizona, California, Colorado, New Mexico, Utah, and Wyoming, as well as the Republic of Mexico, all use water from the Colorado River. The Law of the River is the collection of laws, court decisions, and regulations that determine the use of the Colorado River and the operation of its dams. In 1922, the seven states entered into an interstate compact that provides for the apportionment of the waters of the Colorado River system and divided the states into two basins—upper and lower—with an allocation of 7.5 million acre-feet annually (a.f.a.) to each basin. Nevada is part of the lower basin and, as part of the Boulder Canyon Project Act of 1928, Congress authorized the apportionment of the lower basin's 7.5 million a.f.a. as follows:

- Nevada—300,000 a.f.a.;
- California—4.4 million a.f.a.; and
- Arizona—2.8 million a.f.a.

Through a 1944 treaty, the United States agreed to deliver 1.5 million a.f.a. to Mexico.

Despite estimates in the early 1900s that the flow of the Colorado River was 17 million a.f.a., more current data puts the flow at 15 million a.f.a., much less than the 16.5 million a.f.a. apportioned by the Law of the River. Compounding the controversies relating to allocation of the Colorado River is the ongoing drought.

In 2007, the Secretary of the Interior approved an interstate agreement among the lower basin states that sets forth the rules for sharing shortages on the River and jointly operating Lake Mead and Lake Powell. Nevada and the other lower basin states also have reached water banking and reserve agreements. Due to the drought, the water level in Lake Mead has dropped significantly and the Southern Nevada Water Authority (SNWA) has completed a third, lower, intake line in Lake Mead.

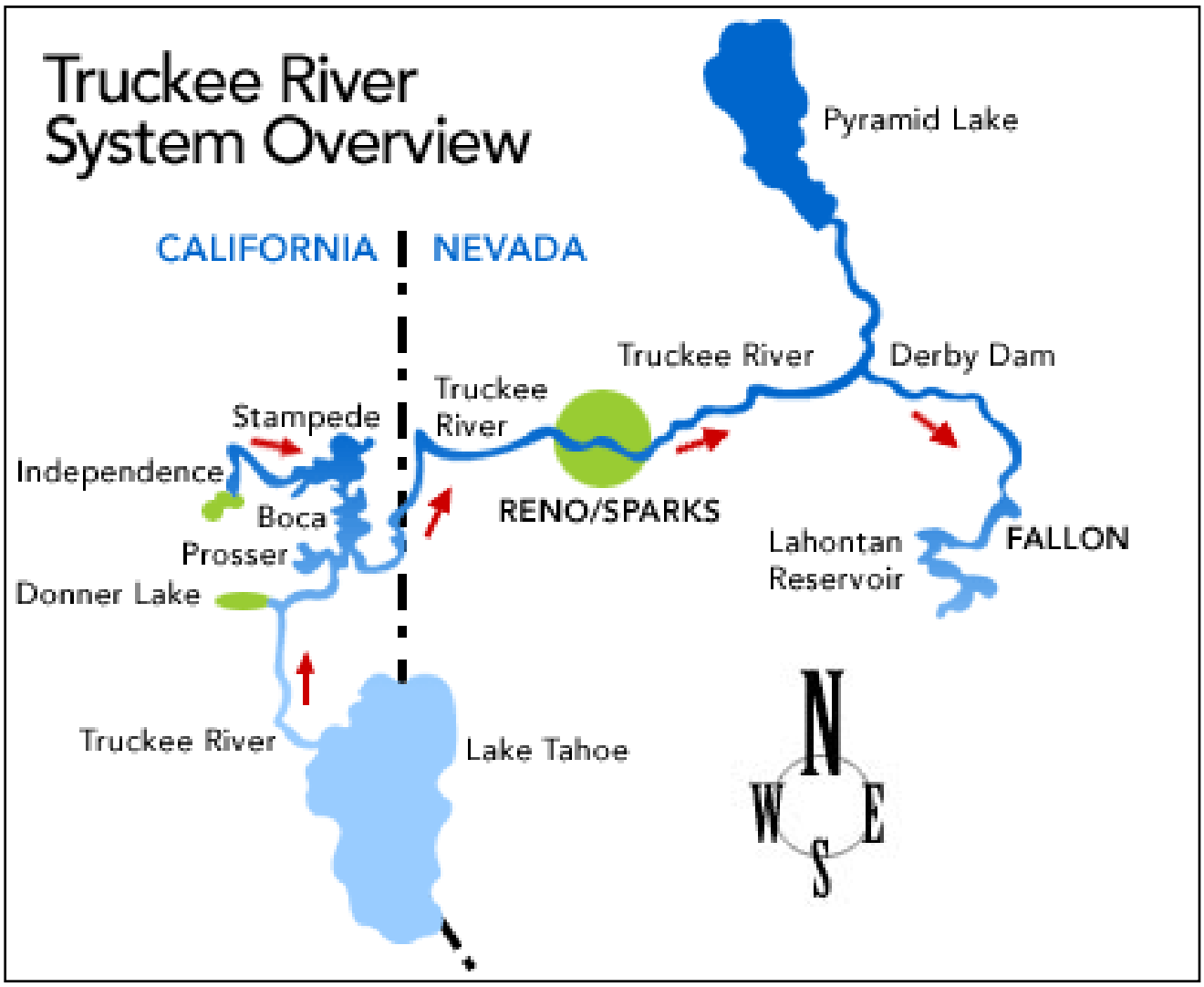
The following map illustrates the Colorado River Basin and its division into the upper and lower basins.

Map Source: Glen Canyon Dam Adaptive Management Program, Chris Hayes.

Truckee-Carson-Pyramid Lake Water Rights Settlement Act of 1990

Long-standing disputes over water in the Truckee and Carson Rivers led to the congressional enactment of the Truckee-Carson-Pyramid Lake Water Rights Settlement Act of 1990, also known as the "Negotiated Settlement." The main provisions in the legislation are:

- An interstate allocation between Nevada and California of the Truckee and Carson Rivers and Lake Tahoe;
- A new operating agreement—Truckee River Operating Agreement (TROA);
- Reauthorization of the Newlands Project to serve additional purposes, including recreation and fish and wildlife restoration, and as a municipal water supply for the Fallon area;
- Development of a recovery program for the endangered Pyramid Lake cui-ui fish and threatened Lahontan cutthroat trout through a water rights acquisition program; and
- A water rights purchase program for the Lahontan Valley wetlands.



Source: Truckee Meadows Water Authority (https://tmwa.com/water_system/resources/riversystem/).

In September 2008, after years of discussion and debate, the States of Nevada and California, the U.S. Department of the Interior, the U.S. Department of Justice, Truckee Meadows Water Authority (TMWA), and the Pyramid Lake Paiute Tribe, among other signatory parties, signed the TROA, an agreement to better manage the water of the Truckee River, with U.S. Senator Harry Reid leading the formalities. The agreement will be implemented over the next several years. For more information regarding the TROA and its implementation, please refer to http://www.troa.net/.

State, Regional, and Local Water Entities

The distribution of water generally is handled by counties, cities, water districts, or other purveyors throughout the State. Water districts and purveyors include municipal or public entities as well as some small water companies.

Colorado River Commission

The Colorado River Commission of Nevada is a State agency with a seven-member board charged with protecting Colorado River water and power resources in Nevada. The Commission oversees the distribution of approximately 25 percent of the hydropower generated by the Hoover and Davis Dams in Nevada and the Parker Dam in Arizona. Ensuring compliance with the Lower Colorado River Multi-Species Conservation Program is another responsibility.

Southern Nevada

In southern Nevada, the regional water authority—SNWA—is a joint powers authority that manages water supplies and water planning in most of Clark County. The SNWA works closely with the Colorado River Commission to manage the Colorado River water supplies. Rate setting and typical utility functions are handled by the entities that comprise the SNWA: Boulder City, Henderson, Las Vegas, North Las Vegas, the Big Bend Water District, the Clark County Water Reclamation District, and the Las Vegas Valley Water District.

Elsewhere in southern Nevada, water storage, conservation, and distribution are managed by entities such as the Lincoln County Water District, Moapa Valley Water District, Nye County Water District, and Virgin Valley Water District.

Northern Nevada

After a 2005-2006 Interim study on consolidation of water resources in Washoe County, the Legislature passed Senate Bill 487 (Chapter 531, *Statutes of Nevada 2007*) creating the Western Regional Water Commission to plan for the management of water supplies and to develop a comprehensive regional water plan for most of Washoe County. As directed by the Legislature, the goals of the water utility consolidation were to achieve lower cost of service while also allowing for a "conjunctive use" approach to the area's water-resource management. The consolidation of Washoe County Department of Water Resources and South Truckee Meadows General Improvement District into TMWA was completed on December 31, 2014.

Elsewhere in northern Nevada, communities' water supplies are managed by general improvement districts, as in Incline Village and Sun Valley. The Carson Water Subconservancy District is a multicounty, bistate agency without regulatory authority that works cooperatively to protect and maximize the resources of the Carson River watershed.

The Truckee-Carson Irrigation District (TCID), a political subdivision of the State of Nevada, was organized and chartered in 1918 to represent the water right holders within the Newlands Project. The TCID was formed and is paid for by landowners within the boundaries of the Newlands Project who own water rights appurtenant to their land. Since 1926, the TCID has been responsible for operation of the Newlands Project under a contract with the U.S. Bureau of Reclamation.

Central Nevada

In rural counties, water generally is managed by the county, the city, or a water district. Regional organizations, such as the Humboldt River Basin Water Authority and the Central Nevada Regional Water Authority, are used to coordinate water planning, data collection, and legislative efforts.

Water Resource Issues

Although approximately 90 percent of the State's population lives in urban areas, the *Nevada State Water Plan* in March 1999 estimated that approximately 77 percent of Nevada's water is used for agricultural purposes, while public and municipal uses account for 13 percent. This scenario is typical of other western states due to high rates of population growth, increasing urbanization, and finite water resources. Since most surface waters in Nevada are allocated by a federal, State, or civil decree, or water rights permits, and the Colorado River allocation is only 300,000 a.f.a., determining the availability and sustainability of groundwater supplies has become an important issue. The Legislature has heard calls for additional studies and research and the integration of current data in order to better assess the State's water supply, conservation opportunities, and potential alternative sources of water and will be performing a study addressing these issues during the 2015-2016 Interim.

Drought

The ongoing and severe drought in Nevada has amplified water resource issues. Governor Brian Sandoval established the Nevada Drought Forum in April 2015 to bring together interested stakeholders to assess the drought in Nevada, identify best conservation practices and policy needs, and make recommendations to regarding next steps. In his Executive Order 2015-13, the Governor also mandated full water audits of State facilities and implementation of water conservation strategies at State facilities. Additionally, he urged local governments and private citizens to conduct similar audits and conserve water in consultation with local water authorities.

The Nevada Drought Forum was established to:

- Evaluate key findings and next steps identified in the *Western Governors' Drought Forum: Special Report* as they relate to Nevada;

- Meet with relevant stakeholders including, but not limited to, agricultural producers, municipal water suppliers, the industrial sector, recreation interests, tribal nations, and members of the general public; and

- Determine, with input from stakeholders and the public, the elements of a final report to the Governor.

As part of its responsibilities, the Nevada Drought Forum prepared a *Summary of Current and Future Planned Actions* by local, state, and federal entities; participated in the Governor's Drought Summit held in September 2015; reviewed and considered the *Western Governors' Drought Forum: Special Report*; and held six meetings with interested stakeholders from throughout the State. The final report of the Nevada Drought Forum, including recommendations, was released in December 2015.

Additional information regarding the meetings and activities of the Nevada Drought Forum can be found at: http://drought.nv.gov/.

Overallocation

In Nevada, there are several communities with overallocations of surface waters or groundwater. Drought conditions worsen these situations. In southern Nevada, the Las Vegas Valley has been dealing with a critical overdraft complicated by years of population growth. At the direction of the 1997 Legislature, SNWA developed the Las Vegas Valley Groundwater Management Program to protect and manage the Las Vegas Valley's primary groundwater supply. The Program includes recharge projects, plugging abandoned wells, connecting well owners to municipal systems, and protecting the aquifer from contamination. Funding is provided, in part, by a fee on groundwater users of $13 per year for domestic well owners and $13 per acre-foot of permitted water use per year for all other types of wells.

Curtailment

In part due to the drought, groundwater pumpage has increased in each of the past three years, and groundwater levels have declined in Nevada's Smith and Mason Valleys, which prompted the State Engineer to issue curtailment orders for these basins in October 2015.

The State Engineer issued two separate orders, one for each valley, that require curtailment of diversions of supplemental irrigation groundwater rights in the Mason and Smith Valley Hydrographic Basins. The State Engineer used the doctrine of prior appropriation and thus the most junior supplemental water rights are curtailed first. The minimum curtailment necessary to achieve four feet or less of groundwater-level decline was determined.

The two orders have different requirements regarding priority dates and percentages of curtailment, based on the April 1, 2015, streamflow forecasts. The curtailment orders and supplemental underground rights priority tables for each basin are available at the Division of Water Resources website at: http://water.nv.gov/.

Interbasin or Intercounty Transfers and Other Reallocations

A controversial trend in recent years has been the reallocation of water from agricultural uses in rural counties to municipal uses in urban counties. Reallocation can also occur through applications to change the use of water from agricultural use to municipal use. In addition, water importation projects currently are under consideration in both Clark and Washoe Counties.

The benefits of transferring water to urban areas to support residential and commercial growth must be balanced against potential impacts to the rural areas from which the water is being exported. Loss of water in rural areas may affect the local economies, present and future, as well as the environment. Similarly, changing water uses can affect the economy and environment by taking agricultural lands out of production thereby reducing return flows, vegetation, and habitat.

Updates to State Water Law

The Legislative Committee on Public Lands submitted a bill draft request in 2011 for the purpose of making appropriate changes to the statutes relating to applications and protests. Assembly Bill 115 (Chapter 166, *Statutes of Nevada*) was passed in the 2011 Session and made several modifications to the application and protest procedures by:

- Changing from one year to two years the time within which the State Engineer must act;
- Deleting the requirement that a protestant must consent to the postponement of an application;
- Adding new grounds on which the State Engineer may postpone an application;
- Expanding the provisions regarding the reopening of the protest period to any application that has not been acted on in seven years; and
- Clarifying that the new provisions only apply to applications filed on or after July 1, 2011.

After the approval of applications for water use, the State Engineer may set conditions on that use based on the approval of a monitoring, management, and mitigation plan—also known as a 3M plan. In an effort to involve local government in 3M plans, and particularly Nevada's rural counties, S.B. 133 (Chapter 146, *Statutes of Nevada*) of the 2013 Legislative Session allowed a county to participate, in an advisory capacity, in the development and implementation of a 3M plan, if the State Engineer required such a plan as a condition of appropriating water for a beneficial use. The State Engineer must consider any comment, analysis, or other information submitted by the participating county before approving any 3M plan but is not required to include such comments and analyses in the plan. A determination by the State Engineer regarding whether or not to include or follow a county's comments or analyses is not subject to judicial review.

Groundwater Management

Nevada is divided into 256 groundwater basins, of which 120 are designated or partially designated. Designation occurs when the State Engineer determines that the groundwater basin is in need of further administration, usually due to overallocation. Groundwater appropriations require a permit and are processed in the same manner as applications for surface water rights. As in many western states, domestic wells in Nevada do not require a water right but are limited in use to 2 acre-feet per year. The general policy of the State Engineer is to limit groundwater withdrawals in a basin to the average annual recharge of the basin or its "perennial yield." Perennial yield is the maximum amount of water that can be taken each year over the long term without depleting the groundwater reservoir.

To address domestic well issues, legislation in 2007 changed the daily limit of 1,800 gallons on a domestic well to an annual limit of 2 acre-feet and clarified that domestic wells could serve accessory dwellings, such as mother-in-law units, as long as the 2 a.f.a. limit is not exceeded and local zoning permits such accessory uses.

The 2007 legislation also provided that the priority date of a domestic well is based on the completion date for the well. To address the proliferation of domestic wells through the parcel map process and resulting concerns about overallocations in certain groundwater basins, the legislation authorized the State Engineer to require a dedication of water rights for a parcel map in designated basins if the local government does not require water rights dedications for parcel maps.

In 2013, the Legislature addressed the issue of appropriating groundwater for watering livestock. During severe drought, maintaining sufficient water supply for livestock is critical to their survival. Senate Bill 134 (Chapter 147, *Statutes of Nevada*) authorized a person to apply for a temporary permit to appropriate groundwater for watering livestock when the point of diversion is within a county, or a neighboring county, that is under a drought declaration. Any associated well must be plugged and sealed upon expiration of the temporary permit, which must not exceed one year in duration.

Enforcement

Most violations of water law are punishable criminally as a misdemeanor. The 2007 Legislature granted the State Engineer the authority to impose administrative penalties and seek injunctive relief for violations of Nevada water law. For the past several legislative sessions, the Legislature has debated additional enforcement powers for the State Engineer.

Conservation

Water conservation is an important issue throughout the U.S., and Nevada is no exception. Chapter 540 ("Planning and Development of Water Resources") of NRS requires each water district and purveyor to develop a water conservation plan and to update the plan at least every five years.

Environment

Water resource issues are often intertwined with the Endangered Species Act of 1973 and the increasing emphasis on protection of instream flows for wildlife and recreational purposes. The controversy surrounding the Walker River Basin and Walker Lake is an example of limited water resources impacting the environment. Endangered species are also a continuing concern in the agreements involving the Truckee River and Pyramid Lake.

Federal

Generally speaking, there is no such thing as a federal water law. As part of the early congressional acts disposing of western lands, state law was recognized as controlling the appropriation of water. However, the federal government may assert expressly reserved water rights and, since more than 85 percent of Nevada is federally owned, federal agencies play a significant role in water issues. Federal adjudications, such as the Alpine Decree (Carson River), Orr Ditch Decree (Truckee River), and Walker River Decree (Walker River), involved decades of litigation.

Tribal

Native American tribes have asserted "reserved water rights" claims under the Winters Doctrine, based on the assumption that Congress reserved water for tribal use when creating reservations. Tribes in Nevada have actively asserted claims throughout the State, including the Pyramid Lake area, Walker River Basin, and the Las Vegas Valley.

USEFUL WEBSITES FOR WATER ISSUES

The following websites contain additional information on the programs and topics in this report.

- Bureau of Land Management Groundwater Projects: http://www.blm.gov/nv/st/en/prog/planning/groundwater_projects.html.
- Carson Water Subconservancy District: http://www.cwsd.org.
- Central Nevada Regional Water Authority: http://www.cnrwa.com/.
- Colorado River Commission of Nevada: http://crc.nv.gov/index.asp.
- Great Basin Water Network: http://www.greatbasinwater.net.
- Nevada Drought Forum: http://drought.nv.gov/.
- Nevada State Climate Office: http://www.unr.edu/climate.
- Southern Nevada Water Authority: https://www.snwa.com.
- State Engineer, Division of Water Resources: http://www.water.nv.gov.
- Truckee-Carson Irrigation District: http://www.tcid.org.
- Truckee Meadows Water Authority: http://www.tmwa.com.
- Truckee River Operating Agreement: http://www.troa.net/.
- U.S. Geological Survey, Nevada Water Science Center: http://nevada.usgs.gov/water/.

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