

C. Interbasin and Intercounty Transfers

The Need for Water Transfers

Nevada is the driest state and one of the fastest growing, and is currently ranked as the most urbanized state in the nation. Overall, water demand in the state is expected to increase by about 9 percent by the year 2020, resulting in an increase in demand for new water appropriations of about 350,000 acre-feet. Most of Nevada's surface water systems are fully appropriated and nearly half of the groundwater basins have been *designated* as in need of additional administration by the State Engineer; in most cases this means that they are fully appropriated as well. There are few rivers flowing to the sea which might be tapped for future water needs.

Because of the limited options available, interbasin and intercounty transfers are likely to become more important in meeting future water needs than in the past. Growing urban areas are looking to appropriate new water rights or purchase existing water rights and transfer them to new places of use, frequently in a different basin or county. Water right transfers are also being viewed as an important way to augment instream flows and to meet environmental needs for water.

Water transfers involve withdrawing either groundwater or surface water from one basin or county for beneficial use in another. The term *water transfers* can apply to either an existing water right or a new appropriation. *Intercounty* transfers involve the movement of water from one county to another for use. *Interbasin* transfers involve the movement of water from a *basin-of-origin* to a *receiving basin* for use. The term *basin-of-origin* refers to the place from which the water is diverted; the term *receiving basin* refers to the place where the water is used. In the following discussion, the term *basin* can refer to either a groundwater basin or a surface water basin. A water transfer can be either an intercounty transfer or an interbasin transfer, or both.

Of all the topics in the *Nevada State Water Plan*, that of interbasin and intercounty transfers requires the greatest care in balancing the goals of the water plan, as set forth in Part 1. In summary these include:

- Water supply sufficiency
- Protection of existing water rights
- Preferential use of water for greatest economic gain to the state
- Greater conservation
- Protection of water quality
- Protection of water supplies for rural areas
- Environmental protection
- Sound processes for decision-making, including efficiency, cooperation, more information, sound science and public involvement

Water transfers provide an opportunity to resolve a variety of water management issues. A receiving

area (basin or county) can benefit from a water transfer if the new water supply allows the receiving area to meet current or projected water needs, or leads to economic development or expansion. An area of origin (county or basin) can benefit from a water transfer if the area has excess water resources not otherwise needed to meet future growth or resource conservation needs and some form of mitigation is offered to offset any impacts expected to the area (i.e., through the collection of a water transfer tax and/or implementation of a mitigation plan). Examples from California, Idaho, Colorado and even Nevada are discussed in the book *Water Transfers in the West*. Each of the case studies provides examples where water transfers are being used to solve a spectrum of problems, including water supply, power generation, wetlands restoration, instream flows or water quality improvements. Each case study also highlights potential impacts that have been or need to be addressed.

Historical Context

Water transfers have been around for a long time. Prior appropriation law has never limited the use of water to the watershed or ground water basin in which it originated. In Nevada, water transfers are an integral part of the water arena, and interwoven with the history of the settlement of the state. Without water transfers, Virginia City and Tonopah would not exist, many mining claims would never have been developed, farming in Fallon would be a fraction of what it is today, and Las Vegas would be a town not a destination city.

There are over 20 interbasin transfers occurring in Nevada today. Tables 1 and 2 show some examples of these interbasin transfers. The examples are divided by whether the source of the water is groundwater or surface water.

Water transfers in Nevada have contributed to economic development, growth and prosperity. But there are also costs associated with such transfers. In one case, the transfer of water for agricultural development has had an impact on lake levels downstream of the diversion point. Under the Truckee River Decree, mandated by Federal Court, water is transferred from the Truckee River Basin via the Truckee Canal to the Carson River Basin. Although this water transfer resulted in economic development in the Fernley and Fallon areas in Lyon and Churchill counties, it also resulted in declines of water levels in Pyramid Lake, the terminus of the Truckee River. Because of the potential for physical, social, fiscal and economic impacts, water transfers must be carefully evaluated prior to approval and closely monitored after implementation.

Table 1. Examples of Current Interbasin Diversions

Groundwater Source		
Basin-of-Origin	Receiving Basin	Type of Use
Washoe Valley	Eagle Valley	Carson City municipal supply
Goshute Valley	Great Salt Lake Desert	Wendover municipal supply
Pilot Creek Valley	Great Salt Lake Desert	Wendover municipal supply
Long Valley	Cold Springs Valley	municipal supply
Ralston Valley	Big Smokey Valley	Tonopah municipal Supply
Carson Valley	Eagle Valley	Carson City municipal supply
Dayton Valley	Eagle Valley	Carson City municipal supply
L. Meadow Valley Wash	Muddy River Springs Area	Reid Gardner Power Plant
Oreana Sub-area	Lovelock Valley	Lovelock Municipal Supply
Surface Water Source		
Source / Basin-of-Origin	Receiving Basin	Type of Use
Lake Tahoe Basin	Eagle Valley	Carson City municipal supply
Lake Tahoe Basin	Dayton Valley	Virginia City municipal supply
Truckee River (Tracy Segment)	Carson River (Churchill Valley via Truckee Canal)	Truckee-Carson Irrigation District irrigation
Newark Valley (spring)	Diamond Valley	Eureka municipal supply
Lake Tahoe Basin (treated effluent)	Carson Valley	irrigation
Truckee River (Truckee Meadows)	Lemmon Valley	SPPCo municipal supply
Carson River (Dayton Valley)	Eagle Valley	Carson City municipal supply
Colorado River (Black Mountain area)	Las Vegas Valley	Las Vegas area municipal supply
Truckee River (Truckee Meadows)	Spanish Springs Valley (via Orr Ditch)	irrigation
Truckee River (Truckee Meadows)	Sun Valley	SPPCo for municipal supply

Table 2. Examples of Interbasin Transfers of a Previously Existing Water Right

Original Point of Diversion	New Point of Diversion	Original Place of Use	New Place of Use	Type of Use
Carson River (Carson Valley)	Carson River (Dayton Valley)	Carson Valley	Eagle Valley	Carson City municipal supply
Humboldt River (Battle Mountain)	Rye Patch Reservoir (storage)	Battle Mountain	Lovelock area	irrigation

Laws and Legislative Actions Regarding Interbasin and Intercounty Transfers

Water Allocation. Nevada Revised Statutes 533 and 534 provide basic criteria for evaluating all water appropriations or changes of water rights, including interbasin and intercounty transfers. As long as unappropriated water is available, existing water rights are not impacted, and the transfer does not threaten to prove detrimental to the public interest, the State Engineer may approve the transfer. The State Engineer has issued a number of orders and rulings which address the public interest issue.

Water Rights. A water right owner has the right to use the water pursuant to the terms of the certificated water right, but any changes in the place of use, manner of use or point of withdrawal must be approved by the State Engineer prior to the change. The ability to buy and sell water rights is the basis for “water marketing” described below.

Public Noticing. The State Engineer’s office publishes a notice of an application for a new appropriation or change of water rights in the newspaper of general circulation in the county where the water is to be appropriated and used, once a week for four consecutive weeks (NRS 533.360). In the case of intercounty transfers, NRS 533.363 requires the State Engineer to also notify county commissioners, in both the county of origin and the county of use, of a pending application for appropriation or change, with some minor exceptions. The applicant must send a copy of the application to each of the counties. Each county commission must then hold a public workshop on the proposed intercounty transfer, and send their non-binding recommendations on the proposal to the State Engineer.

Water Transfer Tax. In 1991, the Nevada Legislature amended NRS 534 to allow a \$6 per acre-foot tax on water transfers where water is to be withdrawn in one county and used in another county or state (NRS 533.438). The monies collected are to be placed in a trust fund, the use of which is restricted to economic development, health care and education.

Mitigation Plans. If a county declines to impose the water use transfer tax, the applicant and the governing body of the county-of-origin may execute a plan to mitigate the adverse economic effects

caused by the transfer of the water (NRS 533.4385). The mitigation plan may include a reservation of designated water rights to the county-of-origin and compensation for the economic impacts of the transfer, among other things. The plan must be submitted to the State Engineer who then has the authority to amend the plan if it violates a specific statute or is deemed unworkable.

1994 Legislative Study. The 1994 Interim Legislative Committee heard testimony on the issue of interbasin transfers. In their report, *Study of the Use, Allocation and Management of Water*, the committee recommended that the state water plan include general criteria for the approval of water transfer applications and related determinations that pertain to the movement of water from one basin to another¹. Further, they recommended that the general criteria should include evidence that:

1. the project is fair and equitable to the area-of-origin;
2. the project is environmentally sound; and
3. the project is an appropriate long-term solution which will not unduly limit future development and growth of the area-of-origin.

1995 Legislature. In 1995, the Legislature amended the water planning statute to require that “The [state] water plan ... include provisions designed to protect the identified needs for water for current and future development in rural areas of the state, giving consideration to relevant factors, including but not limited to, the economy ... and the quality of life in the affected areas” (NRS 540.101.3). In partial fulfillment of this statute, recommendations regarding interbasin transfers are listed at the end of this issue paper.

1997 Legislature. During the 1997 legislative session, the Legislature considered a bill (S.B. 454) to set specific criteria to ensure that interbasin transfers do not cause undue economic or environmental harm to rural counties. The bill was proposed jointly by three counties, Nye, Lincoln and White Pine. Rather than adopt the bill at that time, the Legislature referred the issue to the Legislative Committee on Public Lands for further fact finding during the interim period between legislative sessions. The committee held a number of work sessions to hear testimony on the issue and proposed a bill draft for consideration by the 1999 Legislature.

Issues

Water transfers can have both benefits and impacts. The degree to which a water transfer benefits or impacts a region, and the locations in which those benefits or impacts are experienced, varies widely. Some benefits and impacts are more commonly associated with interbasin transfers; others are more likely to be observed with an intercounty transfer. Some have a larger effect on an area of origin; others are felt more keenly in a receiving area. Impacts to the water resource itself or the environment are more likely with interbasin transfers than with intercounty transfers. Economic,

¹ *Study of the Use, Allocation and Management of Water* . Bulletin No - 95-4. Legislative Commission of the Legislative Counsel Bureau, State of Nevada. p. vii.

social or fiscal impacts are more commonly associated with intercounty transfers. Economic benefits are more likely to accrue to a receiving area than to a basin or county-of-origin, although areas of origin can certainly receive economic benefits, especially if a previously unused or unneeded water resource will now be put to beneficial use.

Potential Impacts

Basin-of-origin concerns center on whether a groundwater or surface water transfer has the potential to impact the rights of existing water users, reduce instream flows, decrease flows to wetlands or lakes downstream of the point of diversion, or decrease recharge to aquifers. *County-of-origin* concerns center on potential losses of tax income, social stability or the ability to economically develop the region in the future. In a *receiving basin*, natural resource concerns include the possible introduction of poorer quality waters into the receiving basin, or the generation of air and water pollution associated with growth that is likely to occur if a new water source becomes available to a previously water short region. *Receiving county* concerns focus on managing the potential societal and quality of life impacts and new infrastructure demands associated with the new growth which may be induced by the availability of new water supplies.

Views of the Public

Concerns about the economic and environmental effects of interbasin and intercounty transfers increased in the late 1980's when large scale applications were filed for water transfers from rural areas to urban centers in both northern and southern Nevada.² In 1992, the Nevada Cooperative Extension, the Nevada Humanities Committee and a number of other organizations co-sponsored a series of water issue forums. More than 800 Nevadans participated in workshops held throughout the state. The workshops were designed both to educate residents about state water laws and policies and to elicit their thoughts and recommendations on current water issues.

The results of the water forums are summarized in a report entitled *Nevada's Water Future: Making Tough Choices*.³ According to the report, some residents view water as they would any commodity - free to be bought and sold, moved and transferred — a resource to be put to work to meet the economic and social needs of the state. They believe that the market is the most desirable mechanism for ensuring that water is transferred to uses where its economic value is greatest. And clearly, the very existence of many of our communities and their prosperity can be traced directly to the movement of water across basin and county lines.

² *Study of the Use, Allocation and Management of Water*, p. 24.

³ Henderson, Ford, Cobourn. *Nevada's Water Future: Making Tough Choices - A Report on Nevada Water Forums, 1992-1993*, May 1993.

Others believe we should live within our means, that growth should be sustained only by locally available resources. These residents believe that transferring or “exporting” water out of basins is ecologically non-supportable. They express concerns that wetlands and springs in the basin-of-origin will dry up, playas will turn permanently to dust and the potential for growth in the basin-of-origin will be reduced.

The findings of 1992 water forums were mirrored in workshops held by the Division of Water Planning during development of the State Water Plan, both in the Winter of 1994/1995 and in 1998. Intercounty and interbasin transfers topped the list of all issues requested for discussion in the water plan, both in terms of amount of time spent in discussion and the fervor expressed.

People in rural counties were generally concerned about the potential impacts of both intercounty and interbasin transfers. In some cases, this concern went deep enough to cause individuals or their county commissions to call for an outright ban on such transfers even when the county itself was the beneficiary of an ongoing interbasin transfer. Some residents in urban counties viewed interbasin transfers as precursors to additional growth which they viewed negatively. In response to public concerns, urban community leaders and water managers have stated that they do not want their region to benefit at the expense of other areas, and have expressed a commitment to provide appropriate mitigation.

Water Marketing

Water marketing - or the change of water rights from existing uses to new uses at market value - has the potential to increase water use efficiency, certainly an important consideration in a state as dry as Nevada. According to the National Research Council ⁴:

“Markets respond to price signals to move resources from lower- to higher-valued uses. Markets respect existing property entitlements, and thus water right holders set the pace of transition and receive compensation when water is transferred. Reliance on water marketing, rather than government subsidy and regulation, reflects a general societal belief that markets are a more effective way to allocate scarce resources to meet the twin goals of efficiency and equity ... However, there is a need for caution....Transfers must be carefully evaluated because, as with any policy option, there are benefits and costs to their use. And significant costs - some concrete and others quite difficult to measure - can come at the expense of third parties.”

Interest in water marketing, and associated interbasin and intercounty water transfers, is increasing due to a number of factors. First and foremost, the demand for water is growing, especially in the municipal and industrial sectors. Farmers and ranchers currently withdraw about 77 percent of the

⁴ *Water Transfers in the West; Efficiency, Equity and the Environment*, prepared by the Committee on Western Water Management, Water Science and Technology Board and Commission on Engineering and Technical Systems, with the Assistance of the Board on Agriculture, National Research Council. 1992, p.3.

water in Nevada. Part 2 of the State Water Plan explains that municipal and industrial (M & I) water demand is expected to double over the next 20 years, while agricultural water use is expected to decline by about 7 percent over the same period.

Third Party Interests

The greatest concern over water marketing, especially interbasin and intercounty water marketing, is that potential third party impacts must be addressed if transfers are to be equitable and efficient. Third parties include everyone who is not a buyer or seller in a water transfer negotiation. Third party interests include those who hold other water rights that may be at risk due to a transfer, as well as those representing economic, wildlife, environmental and social interests that may be affected by the transfer.

Nevada has laws which are designed to ensure that pending water allocation actions are publicly noticed. Further, county commissions are specifically notified of proposed intercounty transfers. Third parties who are not water right holders have been recognized and allowed to participate in water right proceedings. In fact, the State Engineer has issued two rulings where the legitimacy of third parties to participate in administrative hearings was specifically acknowledged.

Rural Communities and Counties

Water transfers out of a county can have economic, fiscal, environmental and social impacts on rural communities. In the short term, per capita costs for system maintenance and operation in irrigation districts can increase. This possibility is addressed in NRS 533.370.1 (b), which requires the State Engineer to review any application within an irrigation district to ensure that it does not affect the costs of water for other irrigators or lessen the district's efficiency. In the long run, future development opportunities which might have brought increased tax revenues may be lost. This is partially addressed by NRS 533.438 which allows a county to assess a transfer tax or to require a mitigation plan.

If water rights are removed from the land it may result in the value of the land itself being removed from the tax rolls or taxed at a lower rate. County tax rates may then have to be increased placing a heavier load on existing tax payers, or alternatively, services cut. At the same time, the county's bonding capacity and legal debt limit, which are based on the county's net valuation may be decreased. Population is the basis for distribution of state sales tax revenues. If an area loses population because of decreased economic opportunities, sales tax revenues will decline as well, making it harder for the county to provide services for the remaining residents. Counties with only a small percentage of private land, i.e. most of the rural counties in Nevada, are particularly hard hit by the fiscal impacts of retiring irrigated lands.

Water transfers may affect a community's social structure and long term viability⁵. Production from remaining farms or ranches may be insufficient to support other local businesses. If a community

⁵ *Water Transfers in the West*, p 45.

becomes less populous and prosperous, the social infrastructure such as churches, civic groups and political organizations may decline just when the community may need them most to deal with the new economic changes. A community's sense of independence, self-determination and "quality of life" may all be impacted. Increased air pollution may occur if lands are not adequately vegetated prior to a transfer. Surficial aquifers which may have been incidentally recharged from leaky irrigation canals may fall if the water that kept them full is transferred out of the basin, creating problems meeting domestic needs.

Despite these effects, water transfers that appear negative from a rural perspective may be viewed positively from an urban perspective. It is important to acknowledge that a dynamic, evolving economy is dependent on shifting resources as needs change. If Nevada's economy continues developing, and if the national and global demands for food produced in Nevada do not match production capability, then some dis-investment in irrigated agriculture is likely to occur.

Wildlife, Instream Flows, Recreation and Water Quality

Nevada's ecosystems include wetlands and riparian areas and associated fish, wildlife and vegetation. Transfers of surface or ground water, especially out of a basin, can have significant impacts on these water systems and their flora and fauna. Due to its basin and range nature, aridity, and active development, Nevada has many threatened and endangered species, especially fish species. In some cases, land and water development in Nevada has led to the reduction in size of wetland areas, stream flow and lakes at the end of closed river basins. On the other hand, agricultural return flows, flood irrigation of pastures, leakage along drainage ditches and canals, mine dewatering have actually created some new wetland areas.

Healthy ecosystems need dependable water supplies. In Nevada, recreational and environmental uses are considered *beneficial uses* in the state's water allocation law. Water rights may be appropriated or obtained by any legal water right owner to maintain instream flows or in-situ (in place) supplies. Since, for the most part, rivers and tributaries in Nevada are already fully appropriated, water for fish and wildlife enhancement must typically be acquired from existing water right holders.

Instream flows are not only critical to preserving fish and wildlife habitat in arid regions, but they are critical to water-dependent recreation. Tourism, which relies on both gaming and recreation, is an important segment in Nevada's economy. As the state seeks to promote itself, recreation is becoming increasingly important to the mix.

Instream flows for recreation generate dollars both directly and indirectly, and they provide water quality benefits as well. Both stream levels and flow rates influence dissolved oxygen levels, turbidity, nutrients and other water quality parameters. When evaluating a water transfer proposal it is sometimes difficult to adequately address the wide range of economic, environmental and intrinsic values that instream and in-situ (in place) uses of water provide, but it is important to do so if the public interest is to be effectively addressed and any potential impacts of water transfers appropriately mitigated.

Issues

While water transfers have the potential to bring large benefits to the state, the impacts and costs of such transfers must be identified, evaluated and mitigated. Following are the main issues which must be addressed:

1. Water transfers can impact third parties. It is sometimes difficult to determine who the affected parties are and to inform them about proposed water transfers.
2. Concerns have been expressed about water transfers and their potential impacts. Regional water planning enables local officials to be prepared when water transfers are proposed for their area, and to better capitalize on any benefits and mitigate any impacts water transfers may bring.
3. Water transfers may have relatively larger impacts on rural counties. Rural counties must carefully evaluate the potential social, fiscal and economic impacts of water right transfers.
4. Nevada has many threatened and endangered species and unique ecosystems, and has lost wetlands and aquatic environments in a number of areas. Protection of water quality and recreation opportunities depend in large part on water availability. Because the water needs for these beneficial uses of water have not been adequately quantified and few water rights have been obtained to support them in the past, a thorough evaluation of the potential environmental impacts should precede any large scale water transfer.
5. Water markets are developing in a variety of ways in different parts of Nevada. There are few, if any, mechanisms to bring buyers into contact with sellers or to bring order and rationality to the process. Therefore, transaction costs are high and water rights may not be appropriately valued.

Recommendations

The following recommendations were significantly influenced by recommendations made by Nevada county commissioners and the public at more than 25 public meetings and workshops on the state water plan held in 1998. The recommendations were also influenced by the recommendations found in the 1994 *Study of the Use, Allocation and Management of Water* prepared by the Legislative Commission of the Legislative Council Bureau, State of Nevada, and in *Water Transfers in the West – Efficiency, Equity and the Environment*, 1992, prepared by the National Research Council. The recommendations below are designed to balance the positive and negative impacts interbasin and intercounty transfers may have.

1. All levels of government should recognize the potential net value of water transfers as a way to respond to changing demands for water, and encourage voluntary transfers, as long as the public

interest is protected. Efforts should continue to make information available to the public concerning water transfer proposals and to provide affected interests with an opportunity to participate in any proceedings.

2. In applying the public interest test (under NRS 533.370(3)) to an interbasin or intercounty water right appropriation or change request, the State Engineer should continue to consider whether:
 1. the applicant for the water transfer has justified the need to import the water and demonstrated that an effective conservation plan has been adopted for the region in need and is being effectively implemented;
 - the transfer plan conforms to or conflicts with the substance of any adopted water plans for either the area-of-origin or the area to receive the water;
 - the project is environmentally sound; and
 - the project is an appropriate long-term solution which will not unduly limit future development and growth in the area-of-origin.
3. When in the public interest, the State Engineer should continue to place conditions on water right permits to mitigate impacts of interbasin or intercounty water transfers.
4. The State should continue to provide, and accelerate where funding allows, water planning assistance to local governments to help develop regional water plans and to identify future water needs. Regional water planning will enable local governments to better plan for their economic development and protect their natural resources, and prepare them to respond to proposals to transfer water into, or out of, their areas.
5. The Division of Water Planning, with the assistance of others, should conduct additional research on the opportunities and costs associated with water banking and water marketing in Nevada, and develop additional recommendations to improve future water transfers.

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