Las Vegas and the Virgin River: Cashing in on an Unclaimed Jackpot in the Southern Desert

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Las Vegas and the Virgin River: Cashing in on an Unclaimed Jackpot in The Southern Desert

I. INTRODUCTION

Probably no noise is quite as welcome for visitors to Las Vegas as the sound of coins coming out of a slot machine. This sound attracts some twenty million Americans and two million foreign visitors to the city of lights each year. Tourists view Las Vegas as the city that has it all. They come prepared to indulge themselves in the excesses for which Las Vegas has become known. But it is doubtful most visitors recognize that Las Vegas is more than just gambling and glitter. It is also a growing residential community facing many of the same challenges other growing communities face.

Las Vegas is now among the fastest growing cities in the nation. The U.S. Census Bureau reports that from 1990 to 1992 the Las Vegas metropolitan area grew nearly 14 percent from a population of 852,737 to 971,169. More significant is that in 1980 the city had a population of only 463,087.

In this growing city there are sounds other than those of falling coins; sounds which are just as welcome to those who call Las Vegas home. Those sounds might include lawn sprinklers, children splashing in swimming pools, landscaped waterfalls, and motor boat engines. But for all of the things this Mecca of entertainment seems to have in abundance, water is a resource that is in limited supply.

As with other large western cities, Las Vegas' growth has led to heightened concerns about available water resources. The city consumes more than 300 gallons of water per person per day while, in contrast, another desert city, Tucson, Arizona consumes only 156 gallons per day. Why southern Nevada has such an unquenchable thirst for water

3 Id.
4 Id. at 12.
5 Id.
is not entirely clear. Indeed, hotel/motel water use is only 8.3 percent of total Las Vegas water consumption. A recent article noted:

It costs $150 a month just to keep a third of an acre green, and so the per capita water usage in Las Vegas is a gluttonous 343 gal. per day, compared with 200 in Los Angeles ... And although the per capita income is the 12th highest in the U.S., the electorate last year voted against building and improving parks. Officials say they need to build 12 new schools a year through the end of the century to accommodate the projected population influx, but they fear voters will decline to pay for them. Such civic disengagement is now a national phenomenon, but Las Vegas is at the cutting edge—and always has been.

Considering Las Vegas' current growth rate, even extreme conservation will eventually fall short of the city's water needs.

In a search for additional water to support Las Vegans, as well as the tourists who visit the city, the Las Vegas Valley Water District, in connection with the Southern Nevada Water Authority, had offered a radical proposal for additional water acquisition. This proposal was reminiscent of the Central Utah Project and the Central Arizona Project: federally funded water storage and conservation projects in neighboring states. Like those projects, this proposal was generally thought to have

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6 According to the Las Vegas Valley Water District, water consumption is divided as follows: residential indoor and outdoor use, 64.2 percent; medical use, .5 percent; irrigation use (which includes golf courses, parks, and public right of ways), 8.4 percent; industrial use, .5 percent; commercial and fire line use, 11.4 percent; church and school use, 2.1 percent; government use, 4.6 percent; hotel and motel use, 8.3 percent. Las Vegas Valley Water District, (Article #1) 1 WATER WISE 2 (Aug. 1990).

7 Anderson, supra note 1, at 50.

8 Recently Las Vegas has been the U.S. metropolitan area with the most new dwelling authorizations, with 24.6 per 1,000 population. Second place Ft. Meyers-Cape Coral, Florida had 15.5. Hot New Housing Markets, USA TODAY, Nov. 25, 1994, at § B1.

9 Conservationist Edward Abbey, while discussing the arid climate of Death Valley, points to what he considers Las Vegas' shortsightedness:

This does not mean that the Furnace Creek portion of Death Valley could support a permanent population of 10,000 drinking, back-scrubbing, hard-flushing suburbanites. For the water used here comes from a supply that may have required 20,000 years to charge; it is not sustained by annual rainfall - not in a country where precipitation averages two inches per year.

That's the mistake they made in central Arizona - Tucson and Phoenix - and are now making in Las Vegas and Albuquerque. Out of greed and stupidity, but mostly out of greed, the gentry of those cities overexpanded their investment in development and kept going by mining the underground water supply. Now that the supply is dwindling, they set up an unholy clamor in Congress to have the rest of the nation save them from the consequences of their own folly.

a price tag totaling hundreds of millions of dollars. However, unlike those projects, the Las Vegas Valley Water District proposal would face obstacles that were potentially more daunting than mere funding problems.

This controversial proposal suggested that Clark County, in which Las Vegas, Henderson, North Las Vegas, Boulder City, and several smaller communities are located, appropriate unused water resources from primarily rural northern Nevada counties that do not currently use all of their underground water resources. This proposal consisted of 146 applications filed with the State Engineer's Office in October 1989 for more than 860,000 unclaimed acre-feet of water per year from northern Clark County, as well as the rural counties of Nye, Lincoln, and White Pines.

The proposal met with strong opposition from northern Nevada residents, some of whom dubbed this proposal "the water grab." Those residents felt the proposed water transfer would lead to the eventual demise of northern Nevada and leave most of Nevada a desert wasteland.

Due to both the extreme costs and the severe opposition, this proposal has now been shelved in lieu of a second proposal that attempts to take advantage of more traditional and more readily available water sources. This second proposal involves transferring water from the Virgin River in Southeastern Nevada to Las Vegas. While this Virgin River proposal is not without its share of opposition and will cost over

10 While the cost was generally placed at about $1.5 billion, a study by students at Clark University in Worcester, Massachusetts claimed the cost would be approximately $4 billion. See Bill Goodykoontz, Nevada Counties Cry Foul in Water Fight Las Vegas Applies for Transfer Rights, ARIZ. REP., Nov. 20, 1990, at A1.
11 Id.
12 Id.
13 Telephone interview with David Donnelly, Chief Engineer, Las Vegas Valley Water District, Las Vegas, Nev. (Sept. 21, 1994).
14 See generally Application for Permit to Appropriate the Public Waters of the State of Nevada, Serial No. 58590 (on file with THE BYU JOURNAL OF PUBLIC LAW).
15 See discussion infra part III.
$600 million, it appears to be more feasible than the proposal to appropriate water from the northern Nevada counties. This comment will focus on the Virgin River proposal. First, this article reviews the history of the Colorado River and its water compacts. Second, it discusses the proposal for Virgin River water allocation. Third, it addresses legal issues regarding whether Nevada is entitled to water from the Virgin River. Fourth, this comment will consider technical aspects and legal ramifications of Virgin River allocation plans.

II. HISTORY OF THE COLORADO RIVER AND ITS WATER COMPACTS

The Colorado River originates in the Rocky Mountains in the State of Colorado. From there it winds 1,300 miles through Colorado, Utah, and Arizona. The river helps form the boundary between Nevada and Arizona, and then runs along the California-Arizona border and into Mexico. After it crosses the Mexican border it empties into the Gulf of California. The river is fed by tributaries in six states: Wyoming, Colorado, Utah, Nevada, New Mexico, and Arizona.

The Colorado River has historically served an extremely arid area. For thousands of years the people of the region have depended on the waters of the Colorado for their survival. During the latter part of the nineteenth and the first part of the twentieth century, inhabitants of the

16 Cost estimates were based on several assumptions: first, that the pipeline and treatment plant's capacity would have a maximum of 160 cfs; second, that the river diversion maximum would equal 700 cfs; third, that the bypass minimum would equal 25 cfs (October through May); fourth, that the reservoir storage would be 113,000 af. With these assumptions, the estimated costs added up as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diversion and storage dams</td>
<td>$135,900,000</td>
</tr>
<tr>
<td>Pumping stations and forebays</td>
<td>180,800,000</td>
</tr>
<tr>
<td>Pipelines</td>
<td>246,600,000</td>
</tr>
<tr>
<td>Conventional water treatment plant</td>
<td>74,900,000</td>
</tr>
<tr>
<td><strong>Total Capital Cost</strong></td>
<td><strong>$638,000,000</strong></td>
</tr>
</tbody>
</table>

LAS VEGAS VALLEY WATER DISTRICT/SOUTHERN NEVADA WATER AUTHORITY, LOWER VIRGIN RIVER PROJECT MANAGEMENT REPORT A-13 (Nov. 1993).

17 As has been demonstrated thus far, the costs, while still extreme, are at least somewhat lower than the northern county proposal. Also, the Virgin River project avoids the intrastate rivalry that the northern county proposal would likely encounter.


19 The Arizona v. California Court acknowledged this when it notes:

The Master [appointed by the Court for the purposes of marshalling evidence and facts for this case only] refers to archaeological evidence that as long as 2,000 years ago the ancient Hohokam tribe built and maintained irrigation canals near what is now Phoenix, Arizona, and that American Indians were practicing irrigation in that region at the time white men first explored it.

*Id.*
Colorado River Basin continually sought ways to make better use of their water resources. But using the Colorado was difficult:

The natural flow of the Colorado was too erratic, the river at many places in canyons too deep, and the engineering and economic hurdles too great for small farmers, larger groups, or even states to build storage dams, construct canals, and install the expensive works necessary for a dependable year-round water supply. Nor were droughts the basin’s only problem; spring floods due to melting snows and seasonal storms were a recurring menace. . . . Another troublesome problem was the erosion of land and the deposit of silt which fouled waters, choked irrigation works, and damaged good farmland and crops.20

Nevertheless, in 1919 the All-American Canal Board of the United States issued a report that detailed the possibility of constructing a reservoir on the mainstream of the Colorado and an All-American Canal to the Imperial Valley of California.21 The Board recommended that the U.S. government construct a dam and reservoir at or near Boulder Canyon. Eventually, the Boulder Canyon Project created the Hoover Dam and Lake Mead, only thirty miles from Las Vegas.

When the Hoover Dam was proposed, it quickly gained support from several down-river states that stood to benefit from it. However, there were immediate concerns in states to the north of the dam site. One concern was that the additional water stored in Lake Mead would quickly be taken by the faster-growing states located down-river from the dam.

The law of the river at that time was that of prior appropriation. Under the law of prior appropriation, the first claimant to the water who is able to put it to beneficial use “acquires a vested right to continue to divert and use that quantity of water against all claimants junior to him in point of time.”22 The northern basin states were concerned that then-booming California would take the stored water and put it to beneficial use before the remaining states could use the water made available by the project. These northern states were concerned that California’s water appropriation would be first in time and hence, first in right.

It was in this climate of concern regarding California’s potential water appropriation that the basin states came together to negotiate a compact. On August 19, 1921 these states were granted Congressional

20 Id. at 553.
authority to negotiate and enter into a compact for the equitable division and apportionment of the river’s water.\textsuperscript{23} Congress granted the authority with the understanding that the commissioners from each state would agree to apportion their respective shares of water.

The compact failed to meet that ideal, however, and the commissioners only agreed that the river would be divided into an Upper and Lower Basin, separated at Lees Ferry, Arizona. The commissioners agreed that each basin would be allotted 7,500,000 acre-feet of water per year from the Colorado River system,\textsuperscript{24} and that the Lower Basin would be given the right to increase its beneficial consumptive use of such waters by one million acre-feet per annum.\textsuperscript{25}

During the development of the compact, the commission also considered the possibility that the United States would enter into future commitments to allocate water to Mexico. The compact provided that the Mexican water rights, as recognized by the United States, would be supplied first out of any surplus from the amounts allocated to both the Upper and Lower Basins, and that if there was not sufficient surplus, the shortages would be borne equally by both basins.\textsuperscript{26}

On the whole, the Colorado River Compact succeeded in dispelling the fears of Upper Basin states, but did little to satisfy the anxieties of Nevada and Arizona. These two states watched an increasing number of people move to California, increasing California’s demand for water. The law of prior appropriation, they feared, would still provide a legal

\textsuperscript{23} The Compact was negotiated under authority of the Act of August 19, 1921, ch. 72, 42 Stat. 171. It was approved by Congress in § 13(a) of the Boulder Canyon Project Act of 1928. The Compact was proclaimed by President Hoover on June 25, 1929, 46 Stat. 3000.

\textsuperscript{24} Id. at art. III. The Colorado River Compact states:

There is hereby apportioned from the Colorado River System in perpetuity to the Upper Basin and to the Lower Basin, respectively, the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum, which shall include all water necessary for the supply of any rights which may now exist.

\textsuperscript{25} Id.

\textsuperscript{26} Id. at art. III(c). Article III(c) states:

If, as a matter of international comity, the United States of America shall hereafter recognize in the United States of Mexico any right to use of the waters of the Colorado River System, such waters shall be supplied first from the waters which are surplus over and above the aggregate of the quantities specified in paragraphs (a) and (b); and if such surplus shall prove insufficient for this purpose, then, the burden of such deficiency shall be equally borne by the Upper Basin and the Lower Basin, and whenever necessary the States of the Upper Division shall deliver at Lees Ferry water to supply one-half of the deficiency so recognized in addition to that provided in paragraph (d).
basis for California to eventually commandeer a larger share of the Colorado.\(^{27}\) Arizona was particularly concerned because of its strong interest in the Gila River, also covered by the compact. Arizona did not want the Gila waters used for a Mexican commitment. For this reason Arizona refused to ratify the Compact.\(^{28}\)

In an effort to facilitate ratification, the Basin States' governors met in Denver in 1925 and again in 1927. At these meetings it was suggested, mostly by the Upper Basin States, that there be some fair apportionment between the Lower Basin States. Specific suggestions for the allocation of the Lower Basin's 7,500,000 acre-feet were as follows: Arizona: 3,000,000; Nevada: 300,000; California: 4,200,000. The parties also suggested that the unapportioned waters, subject to reapportionment after 1963, be shared equally by Arizona and California. The proposal also stated that "Each Lower Basin State would have 'the exclusive beneficial consumptive use of such tributaries within its boundaries before the same empty into the main stream,' except that Arizona tributary waters in excess of 1,000,000 acre-feet could under some circumstances be subject to diminution by reason of a United States treaty with Mexico."\(^{29}\)

This Lower Basin allocation proposal failed, however, because California demanded 4,600,000 acre-feet and Arizona insisted on a complete exemption of its tributaries. While the proposal appeared to allocate an inadequate amount of water to meet Nevada's growing population, it is not clear whether Nevada objected to the proposal.

Unlike any other state to the compact, Utah was in the unique position of being in both the Upper and Lower Basins of the Colorado River. This is because of the unique placement of the Virgin River, which originates in Utah above Lees Ferry but actually enters the mainstream of the Colorado below Lees Ferry. But despite Utah's geographic location within both the Lower and Upper Basins, the state has been traditionally considered an Upper Basin state.

In 1928, despite Arizona's bitter opposition, Congress enacted a bill proposed by California Congressman Philip Swing and Senator Hiram Johnson, called the Boulder Canyon Project Act.\(^{30}\) In addition to providing for the damming of the Colorado in Boulder Canyon and the

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\(^{27}\) Samuel C. Well, Water Rights in the Western States § 66 (3d ed. 1911).


\(^{30}\) See Boulder Canyon Project Act of 1928.
building of the All-American Canal, the Act imposed Colorado River water allocation on the three Lower Basin States.\(^{31}\) The apportionment attempted to have the three states come to some agreement. The Act authorized the states to enter into an agreement giving Nevada 300,000 acre-feet, Arizona 2,800,000 acre-feet, and limiting California to 4,400,000 acre-feet.\(^{32}\) Arizona and California would equally split any surplus after the standard allocation.\(^{33}\) In addition, Arizona's Gila River was exempt.\(^{34}\) But even with these modifications, the states failed to enter into any compact of apportionment.\(^{35}\)

Eventually, the Department of the Interior entered into contracts with the various water users of the three states to sell the states' water. Under these contracts, Nevada was given 300,000 acre-feet, the exact amount considered and offered under both previous proposals. California acquired 5,362,000 acre-feet and Arizona received 2,800,000 acre-feet. The states that were party to the Upper Basin Compact were unaffected by these water contracts. The significance of the Secretary's action in selling the water contracts, an action he asserted was appropriate under

\(^{31}\) See Id. After the Boulder Canyon Project Act, neither California, Arizona, or Nevada had entered into any apportionment agreements as authorized by § 4(a) and § 8(b). After the construction of the Boulder Dam (later named the Hoover Dam), the Secretary of the Interior, purporting to act under the authority of the Act, made contracts with various water users for use of the water stored in Lake Mead. California received 5,362.00 acre-feet, Nevada received 300,000 acre-feet, and Arizona got 2,800.00 acre-feet. Arizona v. California 373 U.S. 546, at 561. Again, Nevada did not acquire any more water than was proposed by any of the earlier appropriation drafts.

\(^{32}\) Boulder Canyon Project Act of 1928. In 1925, shortly after Congress had authorized the first interstate compact dealing with the apportionment of water, Felix Frankfurter and James L. Landis published an article touting the advantages of compacts, as opposed to litigation, as a water apportionment tool. See Felix Frankfurter & James M. Landis, The Compact Clause of the Constitution: A Study in Interstate Adjustments, 34 Yale L.J. 685 (1925). They asserted that the compacts were superior for two reasons. First, compacts enable "sensible compromise, not following strictly legal lines." Id. at 706. Second, compacts can better provide for creative continuing administration needed to deal with changing conditions. Id. at 707.

The inequity of Nevada's meager 300,000 acre-feet later became apparent. Admittedly though, at the time of the allocation, Las Vegas was only a small city with relatively meager water needs. No one at the time could have accurately projected the city's tremendous eventual growth. But should Las Vegas be punished for this shortsightedness? This author believes that what Nevada really needs, the legal ramifications of which will not be considered in detail here, is a reallocation of the Colorado River—an entire reformulation of the law of the river.

Indeed, it has been suggested that historically water compacts have mostly failed. See, e.g. Waters & Water Rights § 46.01 (Robert E. Beck ed. 1991).


\(^{34}\) Id.

\(^{35}\) Arizona v. California, 373 U.S. at 562.
the terms of the Boulder Canyon Project Act, has had a long-lasting effect on water law in the U.S.36

In *Idaho v. Oregon*,37 the Supreme Court addressed the equity of reallocation of water resources, focusing on the Columbia and Snake Rivers. The Court considered Idaho's contention that it should be entitled to a share of the fish that migrated from the Pacific up these rivers. The doctrine of equitable apportionment to fish was applied by the Court. In so doing, the Court framed the legal basis by which Nevada could ask for reapportionment of the Colorado:

The doctrine of equitable apportionment is neither dependent on nor bound by existing legal rights to the resource being apportioned. The fact that no State has a pre-existing legal right of ownership in the fish, does not prevent an equitable apportionment. Conversely, although existing legal entitlements are important factors in formulating an equitable decree, *such legal rights must give way in some circumstances to broader equitable considerations*.38

36 *See* discussion, *infra*, part IV. In addition to the Secretary of the Interior’s confidence in regulating water flow, also noteworthy is the U.S. Congress’ recent propensity for regulating small tributaries of larger navigable waters under the authority of the Commerce Clause. In the Boulder Canyon Project Act of 1928, Congress provided a mechanism to apportion the lower Colorado River among Arizona, California, and Nevada. This was not widely recognized until 1963 when a sharply divided Supreme Court upheld this in *Arizona*, 373 U.S. 546 (1963).

The federal intrusion into the use of small tributaries began in the 1960's with the environmental protection movement. Prior to that time, courts had interpreted the Commerce Clause to limit Congressional power to regulate activities on navigable waters. Also, with the birth of the Clean Water Act in 1972, the federal government began to assert jurisdiction over smaller rivers. A. DAN TARLOCK, LAW OF WATER AND WATER RIGHTS § 9.03(2) (6th ed. 1994).

The federal government’s assertion of jurisdiction over small streams may provide fertile ground for future intervention in relation to the Virgin River. Given the federal government's regulatory history in this part of the Colorado Basin, such an intervention seems likely.


38 *Idaho v. Oregon*, 462 U.S., at 1025 (citations omitted) (emphasis added). The Court also stated:

At the root of the doctrine is the same principle that animates many of the Court's Commerce Clause cases: a State may not preserve solely for its own inhabitants natural resources located within its borders. Consistent with this principle, States have an affirmative duty under the doctrine of equitable apportionment to take reasonable steps to conserve and even to augment the natural resources within their borders for the benefit of other States. Even though Idaho has no legal right to the anadromous fish hatched in its waters, it has an equitable right to a fair distribution of this important resource.
If there was ever a time when existing legal rights must give way to "broader equitable considerations" it was after the Supreme Court's *Idaho v. Oregon* decision. However, the next year, in *Colorado v. New Mexico*, the Supreme Court seemed to make equitable reapportionment of water already in use by another state more difficult:

In the context of the Vermejo River, which was fully apportioned in New Mexico, for Colorado, the source state, to claim any of the waters, Colorado had to show that: (1) it needed the water, including what uses it was going to put the water to and that the water was not available from other sources; (2) New Mexico was wasting the water; or (3) that, if New Mexico was not wasting the water, Colorado's use of the water would encompass greater benefits than the use in New Mexico.

III. PROPOSAL FOR VIRGIN RIVER WATER ALLOCATION

To understand the Virgin River proposal, a brief description of present water sources and their users is helpful. There are six major water users in southern Nevada: The Big Bend Water District, Boulder City, the City of Henderson, The Las Vegas Valley Water District, Nellis Air Force Base, and the City of North Las Vegas. All of these users draw heavily from the only two sources of potable water in southern Nevada: contracts for a portion of Nevada’s Colorado River allocation and groundwater rights in the Las Vegas Groundwater Basin. In addition, there are three main non-potable water sources that provide treated waste water for irrigation and commercial/industrial purposes. These include the Clark County Sanitation District, the City of Henderson, and the City of Las Vegas. In 1980, the users of water in southern Nevada joined in a cooperative process to find additional water to use in southern Nevada. Joining with them, by invitation, were the Clark County Department of Comprehensive Planning, the Colorado River Commission, the State Engineer’s Office, and the Bureau of Reclamation. This cooperative became known as Water Resources Management Incorporated (WRMI).
A. Application

The original Las Vegas Valley Water District application for Virgin River water was filed in 1989. That application, Application No. 54077, was later amended by the filing of Application No. 57643, which changed the point of Virgin River diversion to Halfway Wash and requested all unallocated and unappropriated water. This amendment made the diversion site consistent with that already under consideration by the United States Bureau of Reclamation in its joint feasibility study with the Las Vegas Valley Water District.

In February of 1993, the Las Vegas Valley Water District became the operating entity for the southern Nevada Water Authority. At the same time, the Las Vegas Valley Water District completed its study on the feasibility of the Virgin River as a potential water source and as a result, decided to amend its application once again. The southern Nevada Water Authority then submitted Application No. 58591, with the same diversion point at Halfway Wash, but with an increased diversion rate of 700 cfs and an increased average yearly volume of 113,000 acre-feet. Both of these changes in the proposal were intended to better account for the yearly changes in the Virgin River flow rate.

To fully understand the context in which these applications for water rights were made, one must recognize that Las Vegas and other Southern Nevada municipalities were attempting to develop a water right that by statute belongs to the State of Nevada. This fervor for obtaining water rights owned by the state is not uncommon among western municipalities. In fact, perhaps the most significant players in the western water game today are municipalities. Recognizing that their growth is directly related

46 Halfway Wash is located east of Interstate 15 between Mesquite and Glendale, Nevada, slightly upstream from the point where the Virgin River enters Lake Mead and the Colorado River.
47 See Application for Permit to Appropriate the Public Waters of the State of Nevada, Serial No. 58590 (on file with THE BYU JOURNAL OF PUBLIC LAW).
48 LAS VEGAS VALLEY WATER DISTRICT/SOUTHERN NEVADA WATER AUTHORITY, supra note 41, at 4.
49 See Application for Permit to Appropriate the Public Waters of the State of Nevada, Serial No. 58591 (on file with THE BYU JOURNAL OF PUBLIC LAW).
50 See LAS VEGAS VALLEY WATER DISTRICT/SOUTHERN NEVADA WATER AUTHORITY, supra note 41, at 4.
51 The Nevada Colorado River Commission has the power to “collect and arrange all data and information connected with the Colorado River and its tributaries which may affect or be of interest to [the State of Nevada].” NEV. REV. STAT. § 538.161(1) (1993). The Commission also has the authority to distribute the power and water made available to the State of Nevada as a result of the Colorado River system and its tributaries. Id. § 538.181.
to the availability of water, they have shown remarkable diligence in developing their water supplies.\textsuperscript{52}

Las Vegas’ position is not unlike that of another southern city, Atlanta. That city’s projected water needs have been described this way:

Meanwhile Atlanta sits and waits while its population is growing at an unexpected annual rate of 3.2%. Because this sustained growth will require adequate supplies of water for domestic, municipal and industrial use, the Atlanta Regional Commission (ARC) has estimated that Atlanta’s water supply needs will increase over 45% by the year 2010. Not surprisingly, the ARC has emphasized that time is a critical concern and that if the water supply is not made available soon, Atlanta’s growth will be inhibited.\textsuperscript{53}

Anticipating the challenges ahead, Atlanta is currently attempting to divert water from the Bufford Dam project and Lake Lanier to satisfy the future water needs of the growing city. However, not surprisingly, neighboring states fiercely defend their unused water resources, and vehemently oppose Atlanta’s water-diversion plans.

\textbf{B. Two Specific Proposals for Moving Virgin River Water}

There are two proposals to divert the Virgin River: the “Halfway Wash” proposal and the “wheeling through Lake Mead” proposal. Either would allow Las Vegas to use water from the Virgin River. Each proposal has its own advantages and disadvantages.

\textit{1. Halfway Wash}

The Halfway Wash proposal would divert water from the Virgin River near Halfway Wash, Nevada. This proposal consists of a diversion point on the Virgin River, a holding reservoir (with a dam),\textsuperscript{54} a

\textsuperscript{52} LEONARD RICE & MICHAEL D. WHITE, ENGINEERING ASPECTS OF WATER LAW 113 (1987).

\textsuperscript{53} Amy Newsome, Calling a Truce in the Water Wars of the Southeast: Proposal to Adopt a Federal-Interstate Compact 2 (Dec. 16, 1994) (citations omitted) (unpublished student paper, on file with THE BYU JOURNAL OF PUBLIC LAW).

\textsuperscript{54} The continuous use of this proposed holding reservoir seems problematic. Water law’s well-founded “one-filling rule” allows an appropriator of water to fill a reservoir only once annually and will not allow use over the course of a year more than the reservoir’s total capacity. \textit{See, e.g.,} Windsor Reservoir & Canal Co. v. Lake Supply Ditch Co., 98 P. 729 (1908). Historically, the purpose of the one-filling limitation was ease of regulation, but its application can be terribly inefficient and wasteful in a modern context. To maximize the amount of usable water, this rule encourages the building of a large reservoir rather than a small regulating dam. While the storage of “unnatural” amounts of water has traditionally been frowned upon, the author has found no contemplated limitation on the amount of water available through the Halfway Wash proposal.
desalination plant, a pumping station, and a pipeline extending to Las Vegas.

The advantage of this proposal is that it faces the least opposition from other states in the Colorado River Basin. While these states may not appreciate Nevada using the Virgin River, there is little they can do to stop it. The Supreme Court has held that the tributaries of the Lower Basin are not allocated by the Boulder Canyon Project Act.55

One of the disadvantages of this proposal is the strong environmental opposition to the depletion of instream Virgin River flows below the diversion point for much of the year. Other drawbacks include its high cost, and that it would provide less water than could be obtained by wheeling the water through Lake Mead.

Another concern is the unanswered questions of upstream use; there is nothing that compels Utah and Arizona to allow a useable amount of water to pass to Nevada as a downstream user. Presumably, as long as Utah and Arizona allow enough instream flow to meet the demands of environmental interests, they can use the remainder of the Virgin River water before it touches Nevada soil. But upstream users are not confident in their rights to the river's water either. Just as Nevada has concerns about upstream use by relatively small Arizona and Utah communities, the upstream communities have legitimate concerns that a politically powerful Las Vegas will be able to trump any upstream use of the Virgin River.

2. Wheeling Through Lake Mead

The second proposal to divert water from the Virgin River can be referred to as the "wheeling through Lake Mead" proposal. Although this second proposal for physical acquisition of the Virgin River requires lower capital expenditure, this proposal faces a legal battle from the other Colorado River Compact states. The proposal, as filed by application on March 9, 1993,56 would allow Las Vegas to take the same Virgin River water and transport it through the Colorado River system, namely Lake Mead, to a diversion point at Glen Canyon Dam. This proposal would have the same practical effect of allowing Las Vegas to use the Virgin River water to which it may be entitled under the Supreme Court decision in Arizona v. California. Las Vegas' acquisition of the water at the other

55 See Arizona v. California, 373 U.S. 546, at 568 (1963) ("We have concluded that whatever waters the compact appropriated the Project Act itself dealt only with water of the mainstream.").
56 Application for Permit to Appropriate the Public Waters of the State of Nevada, Serial No. 58590 (on file with the BYU JOURNAL OF PUBLIC LAW).
end of Lake Mead would merely be a transfer of numbers rather than transport of actual water.

Acquiring water by this method provides several distinct advantages. First, no capital expenditure is necessary because Las Vegas would be able to use the infrastructure already in place and allocate its share of the river under current Colorado River law. Second, a desalinization plant for the Virgin River's salty water would not be required as it would under the Halfway Wash proposal; the Colorado already dilutes the Virgin River water enough to make it undetectable to downstream users. Third, since no bypass requirement would be enforced on Las Vegas' use of water from Lake Mead, Las Vegas would theoretically be able to use all of the water that reaches Lake Mead from the Virgin River. Fourth, there are no real environmental concerns since Las Vegas' use of the Virgin River after wheeling it through Lake Mead would not present any additional environmental burdens. Finally, impact on upstream users would not be greater than under the Halfway Wash proposal.

The success of this proposal to wheel Virgin River water through Lake Mead is important to Las Vegas and its future, probably because the Halfway Wash proposal is fiscally unpalatable. Even if Nevada is legally entitled to the water of the Virgin River, successful opposition to its wheeling proposal could leave Nevada's unused portion to those users who are better able to move the water, namely California and northern Nevada.

IV. IS NEVADA ENTITLED TO THE WATER IN THE VIRGIN RIVER?

A. Arizona v. California Applied

Whether Nevada is entitled to the Virgin River must be addressed before considering how the water might get there. As Las Vegas Valley Water District applications indicate, the State Engineer for Nevada appropriates the state's water to the various entities within the state. The analysis begins, therefore, on the state level and through a discussion of states rights.

In Arizona v. California the Supreme Court addressed the issue of tributary use under the Act's allocations. The Court stated that the

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57 See discussion supra part III.A.
58 The author's numerous discussions with officials at the Las Vegas Water District confirm that the State Engineer feels confident in its legal right to the resource.
59 Discussion of states rights, however, raises other questions. For example, how do Utah and Arizona use their waters without having the depletion deducted from their shares of the Colorado? Under the Boulder Canyon Project Act, such deductions appear to be required.
allocations did not include in-state tributaries. In this case the State of California argued that the Act allocated tributaries as well as mainstream waters. California wanted any surplus waters after the inclusion of all Lower Basin tributary waters to the 7,500,000 acre-feet delivered by the Upper Basin to Lees Ferry. Since California and Arizona were allowed to split any surplus equally under the terms of the Act, if California's argument was accepted, California would receive an additional 1,000,000 acre-feet per year in addition to its standard allotment delivered to Lees Ferry. The Court rejected this argument and ruled that the Act's legislative history indicated that Congress limited the allocation scheme to mainstream waters and did not include tributaries. Essentially this ruling means Nevada, Utah, and Arizona are entitled to the waters of the Virgin River, since it is a tributary to the Colorado, just as Arizona is entitled to the Gila River, since it is a tributary to the Colorado.

Utah's use of the Virgin River also raises issues in the context of the Arizona v. California decision. Utah has traditionally been thought of as an Upper Basin state and was not a party to the allocation scheme under the Boulder Canyon Project Act. Even though the Virgin River originates in the Upper Basin state of Utah, the river is considered a Lower Basin tributary since it enters the Colorado below Lees Ferry (inside the Lower Basin). However, the Arizona v. California Court noted that the Upper Colorado River Basin Compact does not address tributary waters, but only purports to allocate the waters reserved to the Upper Basin by the Colorado River Compact of 1922. Article III of the Colorado River Compact apports an amount of water to each basin

61 Id. at 569 ("Project Act consistently provided for division of the mainstream only, reserving tributaries to each State's exclusive use.").
62 The Court also held that under California's view, waters could have been taken from Utah and New Mexico, but would be considered Lower Basin water. The Court stated:

Congress authorized Arizona, Nevada and California to make a compact allocating to Nevada 300,000 acre-feet and to Arizona 2,800,000 plus one-half of the surplus, which, with California's 4,400,000 and half of the surplus, would under California's interpretation of the Act exhaust the Lower Basin waters, both mainstream and tributaries. But Utah and New Mexico, as Congress knew, had interests in Lower Basin tributaries which Congress surely would have protected in some way had it meant for the tributaries of those two States to be included in the water to be divided among Arizona, Nevada and California. We cannot believe that Congress would have permitted three States to divide among themselves water belonging to five States. Nor can we believe that the representatives of Utah and New Mexico would have sat quietly by and acquiesced in a congressional [sic] attempt to include their tributaries in waters given the other three States.

Id. at 573.

63 Id. at 565-66.
from the Colorado River System.\textsuperscript{64} The Colorado River System is defined in Article II as “the Colorado River and it tributaries within the United States of America.”\textsuperscript{65} Clearly, the Colorado River Compact does address tributaries. Utah’s use of Lower Basin tributaries raises some potential issues as the Boulder Canyon Act did not allocate tributary use. The Arizona Court noted:

Arizona argues that the [Colorado River Compact] apportions between the basins only the waters of the mainstream, not the mainstream and the tributaries. \textit{We need not reach that question, however, for we have concluded that whatever waters the Compact apportioned the Project Act itself dealt only with water of the mainstream.}\textsuperscript{66}

Interpreting the Arizona Court to mean that the tributaries in the Lower Basin are not a part of the Compact apportionment would be a great benefit to the Lower Basin states. But as noted above, the Supreme Court refused to address that question.

Under the terms of the Colorado River Compact and the Boulder Canyon Act, Utah’s use of the Virgin River may become an issue if Nevada begins using the Virgin River under the Boulder Canyon Project Act. This right was clarified in \textit{Arizona v. California}.\textsuperscript{67} Because of these and other potential issues, there is a draft proposal for a Virgin River Compact between Utah, Nevada, and Arizona.\textsuperscript{68} This compact would clearly define the rights of St. George and Washington County in Utah, Littlefield in Arizona, and Las Vegas and Clark County in Nevada. Also considered would be the smaller rural communities of Nevada such as Mesquite and Bunkerville, which are primarily riparian users of the river.

\textsuperscript{64} See Colorado River Compact, supra note 23, at art. III(c). Article III(c) of the Colorado River Compact states:

If, as a matter of international comity, the United States of America shall hereafter recognize in the United States of Mexico any right to use of the waters of the Colorado River System, such waters shall be supplied first from the waters which are surplus over and above the aggregate of the quantities specified in paragraphs (a) and (b); and if such surplus shall prove insufficient for this purpose, then, the burden of such deficiency shall be equally borne by the Upper Basin and the Lower Basin, and whenever necessary the States of the Upper Division shall deliver at Lee Ferry [sic] water to supply one-half of the deficiency so recognized in addition to that provided in paragraph (d).

\textsuperscript{65} Id. at art. II. Article II states: As used in this compact - (a) the term ‘Colorado River System’ means that portion of the "Colorado River and its tributaries within the United States of America."

\textsuperscript{66} Arizona v. California, 373 U.S. 568 (emphasis added).

\textsuperscript{67} Id.

\textsuperscript{68} Telephone interview with Larry Anderson, Director of Interstate Compacts, Utah State Engineer’s Office (Oct. 3, 1994).
1. **A Virgin River Compact?**

In recent years, there have been several meetings between state officials in Utah, Nevada, and Arizona to discuss the use of the Virgin River as a water resource. As a result of these meetings, several proposals for an interstate compact on the Virgin River have been developed. Any compact that these parties may reach might not address the issue of tributary use under the Colorado River Compact and the Upper Colorado River Compact. However, the parties do not want a compact that would end in litigation reminiscent of *Arizona v. California*. A Virgin River compact could be helpful in addressing numerous issues that are certain to arise as the Virgin River resource becomes more completely utilized. Issues likely to arise regard in-stream flows, recreational use, and water quality.

**B. Tributary Use and the Mexican Obligation**

On February 3, 1944, the United States entered into a treaty with Mexico concerning the Rio Grande, Colorado, and Tiajuana Rivers. The treaty states: '[W]aters of the Colorado River, from any and all sources, there are allotted to Mexico: (a) A guaranteed annual quantity of 1,500,000 acre-feet to be delivered in accordance with the provisions of Article 15 of this Treaty.'

When the Colorado Compact was created, the Upper Basin states of Colorado, New Mexico, Utah, and Wyoming were very careful to condition their acceptance of the operating criteria so that there was no obvious definition of the Upper Basin's obligation to meet the Mexican Treaty obligation. Not surprisingly, the states of the Upper Basin have

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69 Id.

70 While Mr. Anderson indicated that he had seen several drafts from both Nevada and Arizona, he was not at liberty to share them and did not feel that they were representative of what, if anything, would eventually be adopted as a compact between the states. Id.

71 While a few of the western compacts make reference to issues other than allocation, most do not. Dividing the resource is the main focus of most compacts. However, the Delaware River Basin Compact gives broad powers to a compact commission, including the power to allocate water between the affected states and the power to approve or disapprove specific water projects within those states. Such breadth of authority may make some sense in the East with its multistate metropolitan areas and relatively abundant water supply. But it seems unlikely that western states would agree to cede that much authority to a compact commission. See Zachary L. McCormick, *Interstate Water Allocation Compacts in the Western United States - Some Suggestions*, 30 WATER RESOURCES BULLETIN 394, No. 3 (June 1994).


73 Id.
continually asserted—and still assert—that the criteria do not require the Upper Basin States to deliver water to meet that obligation. Article III of the Colorado River Compact states:

(c) If, as a matter of international comity, the United States of America shall hereafter recognize in the United States of Mexico any right to use of the waters of the Colorado River System, such waters shall be supplied first from the waters which are surplus over and above the aggregate of the quantities specified in paragraphs (a) and (b); and if such surplus shall prove insufficient for this purpose, then, the burden of such deficiency shall be equally borne by the Upper Basin and the Lower Basin, and whenever necessary the States of the Upper Division shall deliver at Lee Ferry [sic] water to supply one-half of the deficiency so recognized in addition to that provided in paragraph (d).74

It would appear the Upper Basin states’ argument lacks merit. In a 1988 report the Department of the Interior stated:

To avoid a critical compact interpretation, we assume that the Upper Basin will be obligated to deliver 75 maf of water every 10 years at Lee Ferry [sic], plus 750,000 acre-feet annually toward Mexican Treaty deliveries. This would require an average annual water delivery at Lee Ferry [sic] of at least 8.25 maf. It must be noted here that the Upper Colorado River Commission, comprised of representatives of the Upper Basin States, does not agree with delivery of 750,000 acre-feet annually toward the Mexican Treaty obligation.75

Regardless of the Upper Basin’s obligation to assist in filling the Mexican Treaty apportionment, a situation may develop where there is not sufficient water in the Lower Basin to meet the Mexican Treaty obligation. The numbers show that without the contribution of Lower Basin tributaries, fulfilling that obligation may become difficult.76

Under current use, if the Upper Basin does not deliver the 8.25 maf as required by the Department of Interior under the Colorado River Compact, there will not be sufficient surplus waters in the Lower Basin to meet the Mexican obligation. This is also true if Lower Basin tributary waters are included. If Nevada is allowed to assert its right to

74 Colorado River Compact, supra note 23, at art. III.
75 DEP’T OF INTERIOR, HYDROLOGIC DETERMINATION OF WATER AVAILABILITY FOR NAVAJO RESERVOIR AND THE UPPER COLORADO RIVER BASIN FOR USE IN NEW MEXICO (1989).

The numbers appearing in the Table which follows are found in this Memorandum. Data is the lower two cells of the Table reflect the author’s calculations.
the tributary waters of the Virgin River, available tributary waters within the Colorado River System will diminish even further.

### TABLE: RESULTS OF COMPLIANCE/NONCOMPLIANCE WITH MEXICAN WATER DELIVERY OBLIGATIONS

<table>
<thead>
<tr>
<th></th>
<th>Delivery of 750,000 acre-feet from Upper Basin for Treaty Obligation</th>
<th>No Delivery of 750,000 acre-feet from Upper Basin for Treaty Obligation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado River at Lees Ferry</td>
<td>8.25 maf</td>
<td>7.5 maf</td>
</tr>
<tr>
<td>Lower Basin Tributary Flow</td>
<td>2.50 maf</td>
<td>2.50 maf</td>
</tr>
<tr>
<td>Subtotal</td>
<td>10.75 maf</td>
<td>10.00 maf</td>
</tr>
<tr>
<td>Net Loss and Evaporation Due to Treaty Delivery</td>
<td>0.40 maf</td>
<td>0.40 maf</td>
</tr>
<tr>
<td>Lower Basin Supply</td>
<td>10.35 maf</td>
<td>9.6 maf</td>
</tr>
<tr>
<td>Minus Lower Basin Apportionment Under Colorado River Compact</td>
<td>8.50 maf</td>
<td>8.5 maf</td>
</tr>
<tr>
<td>Total Available for Delivery to Mexico</td>
<td>1.85 maf</td>
<td>1.1 maf</td>
</tr>
</tbody>
</table>

Mean average flow for the Virgin River for the past 62 years has been 153,651 acre-feet. Assuming Las Vegas puts into effect the project at Halfway Wash, yearly diversions would yield a mean of 92,618 acre-feet.

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77 LAS VEGAS VALLEY WATER DISTRICT/SOUTHERN NEVADA WATER AUTHORITY, LOWER VIRGIN RIVER PROJECT MANAGEMENT REPORT IN SUPPORT OF WATER RIGHT APPLICATION NOS. 54077, 57643 AND 5859 A-11 (NOV. 1993).
acre-feet with a bypass to the mainstream of 61,033 acre-feet,\textsuperscript{78} a yearly reduction of nearly .1 maf from the waters available after meeting the Mexican obligation.

Even more damaging to the Mexican water claim is Las Vegas' assertion of its right to the Virgin River and wheeling the water through the existing infrastructure via Lake Mead. In that case, Las Vegas would appropriate all available Virgin River water without allowing any for bypass. If that occurs, a mean of 153,651 acre-feet yearly would be taken from the mainstream and .15 maf would be unavailable for delivery under the Mexican Treaty.\textsuperscript{79}

In either scenario, Las Vegas' use of the Virgin River is likely to be met with criticism from both Upper and Lower Basin states. In the event of a shortage of water to satisfy the Mexican obligation, each basin shares equally in the responsibility of providing the required water. When the Virgin River tributary contributions are coupled with all of the other appropriate tributaries in the Lower Basin, it becomes apparent how significant the tributary shortage could become. Meeting the Mexican Treaty obligation promises to become increasingly difficult.

\section*{V. TECHNICAL SPECIFICS AND LEGAL RAMIFICATIONS OF EACH PLAN}

Each plan of water acquisition has its own set of pros and cons. The following describes the technical aspects of both proposals. These technical aspects tend to show the drawbacks of the Halfway Wash proposal and the advantages of the wheeling proposal.

\paragraph*{A. Technical Aspects of the Halfway Wash Proposal}

The Halfway Wash proposal concerns the physical diversion of the Virgin River at a point prior to Lake Mead.\textsuperscript{80} Such diversions would only be made from October through May.\textsuperscript{81} According to a 63-year study of Virgin River flow rates, the average discharge of the Virgin River at Littlefield, Arizona is 170,600 acre-feet.\textsuperscript{82}

\begin{footnotesize}
\begin{enumerate}
\item Id.
\item Id.
\item Id. at B-8.
\item \textsc{Las Vegas Valley Water District, Addendum to Hydrology and Interactive Computer Modeling of Ground and Surface-Water in the Lower Virgin River Valley, Primarily Clark County, Nevada 9} (1993).
\item \textsc{Las Vegas Valley Water District/Southern Nevada Water Authority, supra} note 76, at A-5.
\end{enumerate}
\end{footnotesize}
From 1978 to 1983, and also in 1985, a gaging station was in place at the site of the proposed diversion in Halfway Wash, Nevada. Based on data from the gaging station and the 63-year study of discharge rates from Littlefield, Arizona, a linear regression equation was developed and used to predict the daily flow at Halfway Wash. The predicted rates of the equation were contrasted with the actual observed data from the seven years at Halfway Wash.

An interesting evaluation was then undertaken by the Las Vegas Valley Water District to simulate the operation of the Lower Virgin River Project under the following constraints: predicted daily mean flows at Halfway Wash; minimum bypass flow during project operation; maximum diversion capacity; maximum offstream reservoir storage capacity; and maximum transmission facilities capacity. Using those parameters and the 63-year study, an average of 92,600 acre-feet would be diverted yearly and the bypass rate would be approximately 61,000 acre-feet. This proposal has a major impact on environmental factors downstream from the diversion site. Additionally, desalination would be required before the water could be used for domestic purposes in Clark County. The proposal suggests that desalination be conducted at the holding reservoir near Halfway Wash before the water is transferred to Las Vegas.

B. Environmental Concerns of Halfway Wash Proposal

Environmentalists' primary concern with the Halfway Wash proposal is the Virgin River chub, a sensitive fish species located primarily in the Virgin River between Mesquite, Nevada and LaVerkin, Utah. The chub is protected by the 1973 Federal Endangered Species Act. Traditional concerns regarding the Virgin River chub have been the possible extinction from competition and predation by exotic fish species. A more recent concern is that the chub may be facing possible habitat depredation due to an extravagant water project, 100 miles to the west.

83 See generally LAS VEGAS VALLEY WATER DISTRICT, ADDENDUM TO HYDROLOGY AND INTERACTIVE COMPUTER MODELING OF GROUND AND SURFACE-WATER IN THE LOWER VIRGIN RIVER VALLEY, PRIMARILY IN CLARK COUNTY, NEVADA 5 (1993).
84 Id.
85 Id. at 6.
86 LAS VEGAS VALLEY WATER DISTRICT/SOUTHERN NEVADA WATER AUTHORITY, supra note 76, at A-10.
87 See 50 C.F.R. § 17.11(h) (1992).
89 Steve Winn, CEO of three major Las Vegas Casinos (the Mirage, Treasure Island, and the Golden Nugget), has been widely criticized in Las Vegas for his extravagant use of water for purely aesthetic purposes. Local governments have already denied his initial
But the chub is not the only wildlife species that exists in the apparently desolate Virgin River drainage. Other sensitive wildlife found in the Virgin River project area include birds of prey, reptiles (including the desert tortoise—a threatened species) and amphibians. In addition, other fish species and various forms of plant life create potential environmental concerns.

From an environmental standpoint, the problem with the Halfway Wash proposal is that it would deprive the Virgin River of much of its water supply between Halfway Wash and Lake Mead for most of the year. Initial proposals would take 700 cfs from the river during the diversion months, leaving only 25 cfs in the river as bypass flow. Environmentalists are concerned that the bypass flow will not be sufficient to sustain the habitat that currently exists in that portion of the Virgin River.

Courts can employ the Endangered Species Act as authority in forcing the reallocation or curtailment of water utilization from certain waterways. In one decision curtailing an existing water right, the National Marine and Fishery Service was granted a permanent injunction which stopped an irrigation district from pumping water out of its water diversion facility on California's Sacramento River. The intent was to protect the habitat for the threatened winter run chinook salmon. Similar concerns are sure to plague the Halfway Wash proposal for using the water of the Virgin River.
Despite Las Vegas’ need for the Virgin River, if the Endangered Species Act is used to regulate the river’s use, Las Vegas’ plans for utilizing the river will be limited. In passing the Endangered Species Act, Congress cited destruction of habitat as the primary reason for the extinction of species. Congress stated that “[i]n many cases the process of extinction has been associated with an increase in man’s ability to alter natural habitats for his own devices.” 98 Later, Congress required the designation of critical habitat in conjunction with the listing of the species as endangered. 99 Fearing that this requirement might be abused, Congress prohibited such designation if the enforcement agency was unable to accurately pinpoint the effected habitat or lacked sufficient information. 100 This requirement provides some hope that the Virgin River could be utilized as a water resource.

Regardless of what happens to the Virgin River above Halfway Wash, Nevada will be forced to deal with the Endangered Species Act before appropriating any water.

C. Wheeling Through Lake Mead

The alternative proposal to diverting the stream at Halfway Wash is to wheel the water through Lake Mead. This proposal is so new, and has been so guarded, that its many details have not yet been released. 101 The technical specifics of this proposal are simple. The proposal allows the water of the Virgin River to reach Lake Mead, at a point below Halfway Wash. 102 The water quantity would be measured at the point of entry and an identical amount would be removed from the existing system down the lake near Las Vegas. No additional infrastructure would be required.

This wheeling through Lake Mead proposal has several obvious advantages. First, because there would be no environmental concerns, all expenses relating to environmental studies and reports would be avoided. Instream flow questions would not be an issue, since instream flows in the Virgin River would remain unchanged. Las Vegas would be allowed to use the entire flow of the Virgin River rather than being required to allow an instream flow of unused water to go downstream. Desalination would not be required as the natural cleansing properties

100 Id. § 1533(b)(6)(C).
101 Telephone interview with Larry Brown, Assistant Director, Las Vegas Valley Water District (Oct. 27, 1994).
102 CLARK COUNTY, supra note 90, at 6.
absorbing the saline from the Virgin River would continue doing so. Finally, no additional infrastructure would be required. The only foreseeable expenditure would be some sort of measuring station to determine quantity where the Virgin River enters Lake Mead.

So what is the problem with this proposal that seems, on its face, so feasible? The answer is downstream users, as was the case in the *Arizona v. California* controversy. According to an authority with the Las Vegas Valley Water District, Arizona and California have discussed the Las Vegas proposal to use the Virgin River.\(^{103}\) Apparently, and not unexpectedly, they are not supportive of the proposal. This authority cautioned against jumping to any conclusions, pointing out that California and Nevada have made tremendous strides and that California now appears to be willing to discuss the issue with Nevada. There is indication that these talks are already in progress.

Legally, California and Arizona may not be able to stop Las Vegas from using the Virgin River. Under the *Arizona* doctrine, Nevada is already entitled to the water. As a practical matter, however, California and Arizona might argue that Nevada should not wheel the water through Lake Mead. Since Lake Mead is literally a part of the Colorado River, any assertion that Nevada can wheel the water through Lake Mead is essentially an assertion that Nevada can unilaterally increase its allocated share of the Colorado River. Under the terms of the Boulder Canyon Project Act, California is entitled to any surplus waters in the Lower Basin up to a maximum of 1,000,000 acre-feet yearly.\(^{104}\)

Utah is not against Nevada’s proposal to wheel the water through Lake Mead, and if in fact Nevada is legally entitled to the resource, they would support the proposal. However, Utah conditions its support on some sort of a compact between Utah, Nevada, and Arizona on the Virgin River before Nevada begins its use.\(^{105}\)

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105 Telephone interview with Larry Anderson, Director of Interstate Compacts, Utah State Engineer’s Office (Sept. 23, 1994).

An interesting caveat to this proposal is the fact that it began as an “off-the-cuff” proposal by someone involved in the Nevada State Engineer’s hearings on the Halfway Wash proposal. An official application has been forwarded to the State Engineer for approval of the wheeling proposal. Telephone interview with Larry Brown, Assistant Director, Las Vegas Water District (Oct. 27, 1994).

However, the Las Vegas Valley Water District has asked the State Engineer’s office to delay its consideration of that application until the Engineer has completed his research and determination of Nevada’s legal right to the water of the Virgin River.
VI. CONCLUSION

Regardless of where Nevada's attempted use of the Virgin River resource goes from here, it will be interesting. At this point, Las Vegas officials are leaning toward the wheeling proposal. The financial considerations of the Halfway Wash proposal are simply too onerous. Additionally, environmental requirements impede—or severely reduce—the benefit of the proposal to divert the water at Halfway Wash.

It should also be noted that, as this paper was being drafted, another proposal has arisen. Utah is again discussing leasing some of its allotment of the Colorado to Las Vegas.\(^\text{106}\) Specifically, this proposal would lease 100,000 acre-feet to Las Vegas for 75 to 100 years.\(^\text{107}\) Utah state officials have plans to develop about 900,000 acre-feet of their remaining allotment. That proposal leaves 500,000 acre-feet undeveloped that, according to the officials, would be developable only at great expense.\(^\text{108}\) However, this proposal would not be without its opponents. Utah opponents will be concerned that once they allow Las Vegas to use the water they will never get it back. It would be difficult to take away a large allotment of water from a city that will have experienced tremendous growth over seventy-five years.

Despite the final outcome, neither proposal will be reality in the next year or so. The Las Vegas Valley Water District indicated that these proposals are prospective in nature and are designed to meet Las Vegas' needs for additional water in ten years, not immediately. However, if the wheeling proposal was approved by all interested parties, Las Vegas would undoubtedly be using the water the next day. If this national playground is going to be able to support continued growth as well as increased tourism use, more water is vital. Conservation, even if agreed to, is not a satisfactory answer. And besides, there is still a casino or two in Las Vegas without a four million gallon water fountain in the parking lot.

Ryan Dennett

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\(^{107}\) Id.

\(^{108}\) Id.