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### Strategies for Acquiring New Urban Water Supplies

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**STRATEGIES FOR ACQUIRING  
NEW URBAN WATER SUPPLIES**

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**Water Organizations in a Changing West**

**Natural Resources Law Center  
University of Colorado School of Law  
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## I. INTRODUCTION

### A. Summary

Beginning in the 1940s when it was the favorite playground for the Hollywood greats, Las Vegas successfully built a reputation and an economy on painting the perfect illusion. A tourist could, and still can, breakfast with the Romans, lunch in the Caribbean, laze away the afternoon with tigers and dolphins, dine at a medieval joust, and finish off the evening at the circus. The names of Las Vegas hotels are as well known in Tokyo and Madrid as they are in New York and Chicago. Outside magazine recently asked this question in reference to Nevada: "What happens when the last of the American frontier becomes just another state?" A similar question can be asked of Las Vegas: "What happens when the City of Illusion becomes just another city?" Las Vegas has not just grown, it has significantly diversified its economic base. The combination of favorable climate, low taxes, employment opportunities, and affordable retirement communities has tempted tens of thousands to relocate.

Las Vegas has always had a steady rate of growth. However, between the years 1987 and 1990, growth skyrocketed to the point where the region had almost exhausted its available water supply. New water had to be found in 1989, and must still be found today.

The roadblocks to finding a new water supply for the area are institutional and legal -- not technical or financial. If the West and its economy are changing, so must the institutions and laws that, because they are so rigid, allow no deviation from the status quo. Therefore, strategies for acquiring additional water supplies, particularly for southern Nevada, are non-conventional and controversial. Southern Nevada has already taken a step in the direction of the non-conventional with the creation of the Southern Nevada Water Authority, whose mission is regional water management. Only its creation has allowed the area to extend the time when it will have exhausted its water supply from 1995 to 2013. Regional water management is the prerequisite if any water marketing strategy is to succeed.

## **B. References**

Webster, Donovan, "Where the West Ends," Outside (March 1993): 63-68, 162-167

White, William T., Thomas M. Carroll and R. Keith Schwer, "The Impact of a Water-Imposed Interruption of Growth in the Las Vegas Region," prepared for the Las Vegas Valley Water District by William T. White Consulting Economists, November 1992

## **II. LAS VEGAS GROWTH**

- A. The Las Vegas Valley experienced an average annual population growth of 5% from 1980 - 1986, representing an annual increase in water production of 4%.
- B. In 1987 - 1990, growth escalated to 8% annually. Water production increased by an average of 9%, but went as high as 17% - 21%. This increase was due to the completion of 11,000 new hotel and motel rooms, as well as new industry and increasing numbers of retirees relocating to the area.

## **III. THE REALITY OF A DIMINISHING WATER SUPPLY AND A STRATEGY FOR STRETCHING THE LOCAL SUPPLY**

- A. Water and wastewater agencies in southern Nevada realized that the only way to stretch the existing supply was through cooperation in lieu of competition.
- B. These agencies retained the firm of Water Resources Management, Inc. (WRMI) to develop an unbiased water management model for the region for the time period 1990 - 2030. Relevant state and Federal agencies were invited to participate.
  - 1. Socioeconomic data for the period 1990 - 2030 was developed by the Center for Business and Economic Research, University of Nevada - Las Vegas.
  - 2. Water demand projections were developed from that data by Planning and Management Consultants, Ltd.

- C. WRMI's model showed three critical years for southern Nevada:
  - 1. 1995 - existing municipal contracts for Colorado River Water would be exhausted
  - 2. 2002 - Nevada's entire Colorado River allocation would be exhausted without conservation
  - 3. 2006 - Nevada's entire Colorado River allocation would be exhausted with conservation
- D. The water model made it clear that, to get beyond 1995, regional water management had to occur. Furthermore, although not all available water had been put to use, it had been committed to prospective users, so all further water commitments were halted until additional resources were secured.

#### IV. CREATION OF THE SOUTHERN NEVADA WATER AUTHORITY

- A. The urgency for the creation of the Authority came from the need to obtain Nevada's final contract for Colorado River water as quickly as possible and end the permit moratorium. That contract was completely dependent on the area generating sufficient wastewater return-flow credits to the Colorado River, and only an entity capable of binding all water and wastewater agencies could provide the needed return guarantees.
- B. The Authority was created by the seven purveyor members pursuant to Chapter 277 of the Nevada Revised Statutes, which allows local entities to form a joint agency and bestow upon it whatever powers they themselves have.
- C. The purposes of the Authority are:
  - 1. To contract for Nevada's Colorado River water;
  - 2. To manage water resources regionally, including a shared shortage agreement which equalized the players during drought;
  - 3. To mandate conservation;

4. To allocate existing and future supplies among its water purveyor members;
  5. To regulate wastewater reuse regionally to maximize Colorado River return-flow credits; and
  6. To develop new water sources for the benefit of all its members.
- D. Since its inception in 1991, the Authority has succeeded in obtaining 98,000 acre-feet for southern Nevada, thereby stretching the area's water supply to the year 2013. This was accomplished by solving intrastate water management problems:
1. The contract for Colorado River water (return-flow credits) granted an additional 58,000 acre-feet. This exhausts Nevada's Colorado River entitlement.
  2. Under the agreement with Southern California Edison (SCE), operator of a power plant using Colorado River water, the Authority and its members commit to bank (through artificial recharge) 350,000 acre-feet of water to be used by SCE until 2026, allowing SCE to cancel its separate contract for Colorado River water and surrender that permanent supply (40,000 acre-feet) to the benefit of the Authority.
  3. The Authority is negotiating with other Nevada Colorado River contract holders to consolidate Nevada's share with the Authority.

## V. CONSERVATION

Conservation has become a reality in southern Nevada. In 2 1/2 short years, a 6% reduction in use has been achieved. The program includes:

- A. Ordinances and Building Codes
  1. Low volume plumbing fixtures
  2. Recycling for water features
  3. Ban on artificial lakes



4. Landscape guidelines
  5. Lawn watering restrictions
  6. Codes, covenants and restrictions
  7. Turf site reductions (to be implemented this year by municipalities)
- B. Enforcement Authority to Las Vegas Valley Water District/"Water Cops"
- C. Water Rate Structure
1. Promote water conservation
  2. Achieve equity in water pricing
  3. Avoid rate shock
  4. Maintain revenue stability
  5. Ensure growth pays for growth
- D. Facility Management
1. Metering of construction water
  2. Rapid response leak detection
  3. Cast iron main replacement
  4. Meter maintenance
  5. High bill investigations
- E. Public Education
1. Changing Mind Set
    - (a) Speaker's bureau
    - (b) Workshops
    - (c) Printed and audio/visual materials
    - (d) Media campaign
    - (e) "Water Awareness Month"
    - (f) Youth education
  2. Improving Water Use Efficiency
    - (a) Conservation hotline
    - (b) Desert Demonstration Gardens
    - (c) "Operation Desert Lawn"
    - (d) Evapotranspiration rates
    - (e) Site visits
    - (f) "Challenge 2000"
    - (g) Conservation awareness patrol

- (h) Home water survey
- (i) Landscape irrigation audits

**F. Research and Studies**

- 1. Citizens task force
- 2. Development of conservation measures
- 3. Evapotranspiration rates

**VI. FUTURE SOURCES OF SUPPLY FOR SOUTHERN NEVADA**

A. Southern Nevada's problem in a nutshell is that, once having put all its Colorado River water to municipal use, it must seek solutions outside its basin since there is no agricultural buffer for future water transfers. Or, stated differently, there are no simple solutions. This reality puts in doubt the axiom of longtime Speaker of the House Tip O'Neill that "all politics are local," since for southern Nevada any solution is at least statewide, regional, national.

B. All options can be broken into two categories:

- 1. Augmentation with distant yet currently unused waters, or
- 2. Reallocation of existing uses.

C. Augmentation

- 1. Any development of new resources is politically extraordinarily difficult and environmentally objectionable, as we have learned through our in-state importation options. The reality is that although those options are not a reallocation of existing beneficial uses in fact, they are perceived as such.
- 2. Distant out-of-state options are generating much attention and, although some may be legitimate, each has many obstacles confronting it and so little political will behind it, that expending money in their pursuit becomes a difficult exercise. These proposals include:

- (a) Diversions by pipeline from the Pacific Northwest or Canada (contrary to Federal law);
- (b) Distant, expensive and complicated desalting and water exchange proposals (with environmental obstacles);
- (c) Delivery of Alaskan or Canadian water by tanker to California accompanied by the necessary exchanges between southern Nevada and southern California; and
- (d) Unused Upper Basin water (contrary to bistate compact and "Law of the River").

D. Reallocation

1. Recently, solutions related to the Colorado River were endorsed by the Secretary of the Interior when he, correctly in my view, pointed out that the answer to Las Vegas' supply problem "runs right by its own doorstep". He pledged to find market mechanisms to help Las Vegas and other western cities with their water supply needs.
2. The big question is how to proceed. In my estimation, much of the same regional thinking that underlaid the creation of the Southern Nevada Water Authority finds application in the Lower Colorado River Basin. Regional management is a prerequisite for any marketing solutions to be successful. Regional management components include:
  - (a) Creation of a Lower Basin-wide Commission consisting of representatives of Arizona, California and Nevada
  - (b) A shared shortage agreement among Lower Basin states to solve Arizona's Central Arizona Project problem
  - (c) Water banks in Lakes Mead and Powell
  - (d) Interstate off-stream conservation storage (surface and groundwater banks)

(e) Salinity projects interfacing with new conservation options

4. Water marketing, particularly in the Lower Basin, appears the most promising alternative, but is only feasible when controlled by the state of origin to protect third-party impacts.

#### **VII. ECONOMIC CONSEQUENCES OF MAINTAINING THE STATUS QUO**

Southern Nevada commissioned the preparation of an economic analysis depicting the consequences of exhausting all water supplies. It delineates dramatic unemployment, outmigrations, plummeting property values and skyrocketing property taxes. Las Vegas has so much become a legitimate, multi-faceted and diversified economy that maintaining gaming and tourism will not protect the status quo. The same will happen to Lower Colorado River Basin cities unless a new approach to management of the resource is found.