

**Nevada State Water Plan**  
**PART 1 — BACKGROUND AND RESOURCE ASSESSMENT**

**Section 2**  
**Summary of 1974 State Water Plan**

*Introduction*

The first state water plan, *Water for Nevada*, was completed and published by November 1974. It consisted of a series of 16 planning documents which estimated water use, inventoried the water resources of the state, provided maps, developed forecasts for future water needs for mining, agriculture, fish and wildlife, recreation, power production and municipal use, evaluated the use of input-output economic models to analyze future water scenarios and described the water administration process in Nevada.

The *Water for Nevada* series was followed by a second series of 6 water planning reports - *Alternative Plans for Water Resource Use*. The objectives of these planning documents were environmental quality, economic efficiency and area development. The purpose of the plans was to unite these objectives for better resource management. The planning was focused on those regions which were having difficulty in meeting their water needs or which were expected to run out of water in the near future. Alternative plans were developed for the Walker, Humboldt, Carson-Truckee, Colorado and Snake River Basins and the Central Region of Nevada. Each report examined a series of alternate economic development scenarios for a region and projected those future scenarios which might occur without a plan in place.

All of the alternative plans identified water resource issues which remain issues today, 25 years later. For example, the 1974 Water Plan noted that Walker Lake was declining by 60,000 acre-feet per year, flooding was occurring throughout the basin and there were unmet water needs for agriculture and recreation. The Truckee-Carson River Basin Report noted the decline of Pyramid Lake, municipal, agricultural and industrial water shortages, lack of adequate water for wildlife areas, and flooding. These issues remain and are perhaps even more pressing today. At this time, both lakes have declined further, municipal and industrial water shortages are more common, efforts to obtain water for wildlife and recreation are currently underway and the New Year's Day Flood of 1997 has moved flooding to the top of many people's agendas.

A final *Special Summary Report* concluded the water planning series. It noted that virtually all of Nevada's surface water resources had been committed; that in a rare year some overflow might be available, but that in most cases storage facilities were inadequate to capture the runoff for later use. It noted that significant groundwater supplies had already been developed, and that some areas held good potential for further development. However, we had already reached the point in some basins, such as the Las Vegas Groundwater Basin and Diamond Valley, where no additional appropriations

could be allowed. It was also apparent that obtaining water supplies from outside the state's boundaries was likely to be problematic, as it still is today.

The *Special Summary Report* noted that Nevada's residents viewed the lack of readily available water as a mixed blessing. While the lack of water restricted economic development in many areas of the state, it also meant that Nevada would be preserved in a fairly natural state with a relatively small population, thus enhancing the resident's "quality of life." In general, it was concluded from reaction and comment at the water planning forums, that most people of the state wanted the water resources developed and used, but not "over used." With this in mind, the state water plan conclusions and recommendations sought a middle ground.

Many issues were identified in the 1974 State Water Plan, and a number of actions were recommended. In most cases, the plan suggested a cautious "wait and see" approach. Key Plan recommendations included: 1) enacting legislation to bring geothermal resources under the purview of state water law, 2) placing time limits on subdivision approvals, 3) establishing state funding for water system infrastructure and flood management, 4) actively protecting state sovereignty in water allocation decisions on federal lands, 5) establishing state level floodplain zoning, 6) analyzing the state's responsibilities for maintaining stream channels in navigable waterways, 7) continuing the data collection and water planning activities, 8) protecting critical habitat and rare and endangered species when making water resource decisions and 9) where necessary, acquiring water rights for wildlife protection. Many of these recommendations were ultimately implemented in one form or another. The following sections summarize the conclusions and recommendations presented in the 1974 State Water Plan and the status of each today. Of note, the conclusions and recommendations presented herein are directly excerpted from the 1974 *Special Summary Report*.

## ***General Conclusions and Recommendations of the 1974 State Water Plan***

### **Water Law and Administrative Procedures**

**1974 Recommendations.** "The theory inherent in the state water law involving the appropriation doctrine commonly referred to as 'first in time - first in right' and the concept that beneficial use is the measure of a right to the use of water have proven to be effective and in the State's interest. The law itself provides for changes in use as desire or demand dictate and thereby makes the law adaptable to varying conditions. Past legislative actions have provided necessary amendments all of which have been carefully evaluated for not only immediate but long term effects and ramifications. No basic changes in the theory or philosophy of the state water law are recommended. However, it should be continually scrutinized for necessary modification of specific provisions."

**Status.** The theory and philosophy of state water law has remained the same, however the State continues to carefully evaluate the water law and make some amendments in response to changing conditions. In fact, there have been some modifications to the state water law since 1974. One of the major statutory changes allows the State Engineer to approve temporary changes in place of diversion, manner of use or place of use of an existing water right (NRS 533.345). Another statutory change allows the State Engineer to issue environmental permits which are temporary permits to

appropriate water for the avoidance of pollution or contamination of a water source (NRS 533.437). NRS 534.250, added to the statutes in 1987, defined permitting requirements for recharge/recovery projects. In 1993, NRS 534.350 was added which allows a public water system in certain basins to receive water right credits for the addition of new customers previously served by domestic wells.

### **Funding of Water Resource Projects**

**1974 Recommendations.** “It has been suggested that a fund be established to provide State participation in funding water resource development or flood control projects. Legislative consideration of funding in the past has been on a project by project basis...Establishment of a separate construction or development fund is not recommended. Individual projects should continue to be considered by the legislature for partial or total funding or financial support.”

**Current Status.** In 1987, the Legislature established a \$200 million loan program for financing water projects (NRS 349.935 through 349.961). Through this program, loans can be issued for financing any project for the management, control, delivery, use or distribution of water. Only two loans have been issued under this program. In recent years, this program has had no activity.

In 1991, the Legislature established the AB 198 Grant Program administered by the Division of Water Planning which provides financial assistance to water purveyors. Grant funds can be used to partially finance capital improvements made necessary by State health regulations and the federal Safe Drinking Water Act. The Board for Financing Water Projects can award up to \$40 million in grants. Thus far, over \$20 million in grant funds have been awarded for 20 projects throughout Nevada. This program remains active today.

The federal Safe Drinking Water Act (SDWA) Amendments of 1996 authorized a Drinking Water State Revolving Fund for the purpose of loaning funds to public water systems for infrastructure improvements required to achieve or maintain compliance with SDWA requirements and to protect public health objectives of the Act. In Nevada, this program is currently being developed with the Bureau of Health Protection Services acting as the lead agency.

### **Local Options and Discretion**

**1974 Recommendations.** “...The concept of state administration of the water resource through application of the provisions of the water law is generally not only accepted, but endorsed with an enthusiasm for continuance...It is recommended that State authority over water resource administration be retained. Where and when possible, local options and discretion should be recognized in such matters as internal management, construction of projects affecting local interest, and financing of such projects.”

**Current Status.** The State has retained authority over water resource administration, however the need for local entities to be proactive in regional water resource planning is being recognized. In recent years, a number of local and watershed planning efforts have been undertaken. To ensure that counties are aware of water right application potentially affecting their region, statutory changes were made requiring the State Engineer to notify county commissioners of water right applications in their

county for use in another county (NRS 533.363).

## **Mining or Depletion of Ground Water**

**1974 Recommendations.** “Withdrawal of groundwater is limited to that naturally recharged to the groundwater basin. The only exception is covered under the provisions of NRS 534.120, which allows issuance of temporary permits to appropriate groundwater which can be limited as to time and which may be revoked if and when water can be furnished by entity. This provision has been applied only in Las Vegas Valley where the alternate source of the Colorado River is available. Concepts have been advanced whereby groundwater in storage would be depleted over a given period of time...It is recommended that caution be exercised in any legislative changes to expand authorization for depletion of ground water in storage. Any authorization, in addition to that presently existing, should be on an area-by-area or case-by-case basis and should not be applicable statewide.”

**Current Status.** It is the policy of the State of Nevada to appropriate groundwater up to the perennial yield. In some instances, some minor applications may be approved in a fully appropriated basin if the proposed use is a preferred use and is in the public interest. Mining is considered a temporary use, and in some basins, mining withdrawals have been allowed to exceed perennial yield with the excess water being put to beneficial use where feasible.

## **Transbasin Diversions**

**1974 Recommendations.** “There is presently no specific statutory reference to transbasin diversions. This has not created any problems and existing or proposed transbasin diversions can be considered, evaluated, and regulated under existing statutory provisions regarding availability of supplies and effects on existing water rights. It is recommended that no legislative amendments be initiated on this subject.”

**Current Status.** A number of actions have been taken since 1974. The discussion on “Interbasin and Intercounty Transfers” in Part 3 of the *State Water Plan* provides an overview of these actions and additional recommendations.

## **Preferred Uses**

**1974 Recommendations.** “The only existing provision for consideration of preferred use in the appropriation of water is NRS 534.120, which relates to new appropriations of groundwater in basins being depleted. The effectiveness of the time-priority system rather than type of use-priority, coupled with provisions for changing the manner of use of water supplies as need and desire arise, lead to the conclusion that no changes are required as regards preferred uses.”

**Current Status.** Since 1974, no legislative changes have been made regarding preferred uses. In designated basins, the State Engineer has continued to define preferred uses for specific regions as needed. In response to the influx of Desert Land Entry requests, the 1981 State Legislature adopted NRS 533.357 which establishes priorities for various categories of irrigation water use.

## **Reservation of Water Quantities**

**1974 Recommendations.** “The idea of reserving quantities of water and essentially setting them aside from appropriation for use for some specific purpose at some time in the future has been advanced. This has been specifically considered regarding future supplies for Municipal and Industrial purposes. It has been proven to be in the State and private interest to allow appropriation of available water for any beneficial use to which it can be applied at the time it can be applied. Again, as demands or requirements change, so can the manner of use of water be changed. It is recommended that this concept of reserving water be rejected.”

**Current Status.** Beginning prior to 1974, the State Engineer has issued orders which designate areas for preferred uses and denial of other uses. Through these orders, the State Engineer has essentially reserved an area for particular types of use. Regarding municipal water appropriations, changes to NRS 533.380 have given municipalities more flexibility in obtaining time extensions regarding the placing of water appropriations to beneficial use.

## **Termed Approvals of Water Appropriations**

**1974 Recommendations.** “Water rights, when perfected, are a right in perpetuity, subject to forfeiture and abandonment. There is perhaps some authority for issuing water rights for a specific term, or time period, if it is demonstrated that the capability for beneficial use is limited to that time. There is some interest in the western states in expanding the authority for issuing termed water rights. It is not clear how this might be applied in Nevada water administration at this time. It is recommended that the concept of issuing termed water rights be further explored before any definitive action is taken.”

**Current Status.** In 1991, NRS 533.371 was added which allows the State Engineer to issue permits that are effective for a limited time period for a temporary use.

## **Water Supplies and Rights for Temporary Construction Uses**

**1974 Recommendations.** “Generally, water supplies for temporary construction, such as highway projects, are available from existing sources and agreements can be reached for water use under some existing water right. However, time is required to obtain a water right, and this can affect obtaining water, particularly in designated groundwater basins. Limited problems created do not warrant the issuance of any type of ‘special permit.’ It is recommended that the State Highway Department consider this matter in bid notices and other material furnished potential bidders or contractors.”

**Current Status.** Language has been added to NRS 534.050 which allows the State Engineer to waive permit application requirements for the temporary use of water in highway construction, and other uses.

## **Wells for Domestic Use**

**1974 Recommendations.** “Current statutory provisions do not apply in the matter of obtaining

permits for underground water from a well for domestic purpose where the draught does not exceed 1800 gallons per day. A ‘permit system’ for individual domestic wells has been considered; but it is estimated that use from such wells is about one percent of the total water use in the state. The merits and benefits to be derived do not, at this time, warrant the time, staff, and financing that would be required to administer a domestic well permit system. This is a matter that warrants continuing consideration in the future.”

**Current Status.** The merits and benefits of a domestic well permitting system still do not warrant the time, staff and financing required. Several bills have been introduced in the Legislature attempting to create such a system, but have not been successful. For additional information, refer to the discussion on “Domestic Wells” in Part 3 of the *State Water Plan*.

### **Taxes on Well Production**

**1974 Recommendations.** “In a previous session of the legislature, a bill was introduced to provide a tax on water produced from wells. There was a serious objection from all areas of the State and the bill did not pass from committee. It has since been proposed that such a tax be considered, not on a statewide basis, but in particular areas. Specifically there is interest by some local residents in taxing production from wells in Las Vegas Valley. The thought is that this would equalize the cost of well water with that served by the public utilities. It is recommended that any consideration of taxes on well production be limited to that under temporary permits which are subject to revocation within the Las Vegas Artesian Basin. It is also recommended that even this be approached only after thorough evaluation of legal ramifications and equity.”

**Current Status.** With passage of Assembly Bill 436 in 1997, a program for the management of the groundwater in the Las Vegas Valley basin was created. As part of this program groundwater users are assessed an annual pumpage fee to fund the Las Vegas groundwater management program.

### **Geothermal Resources**

**1974 Recommendations.** “Nevada’s geothermal resources are administered by the state engineer pursuant to the attorney general’s opinion of August 12, 1965...The implementation of the federal geothermal leasing act makes no provision for compliance with existing State water law, or for protection of existing water rights on private or public lands. Designated critical ground water basins within the State require particular regulation by the state engineer. Unregulated exploratory drilling for geothermal resources in these designated basins and other basins could adversely affect existing rights, in that the federal geothermal leasing act makes no provisions for exploration activity on private or corporate lands. It is recommended that legislation be enacted to specifically provide that geothermal resources are subject to administration under the water law and to provide for establishment of rules and regulations for such control and administration.”

**Current Status.** NRS 534A describing geothermal resource administration was added to the statutes in 1975 with subsequent changes. Under NRS 534A, a permit is needed from the State Engineer if any of the geothermal water is consumptively used, not including reasonable system losses. Nonconsumptive geothermal permitting is administered by the Division of Minerals.

## **Water Supplies for Proposed Subdivisions**

**1974 Recommendations.** “Legislation was enacted in 1971 (NRS 116 and 117) giving the State Engineer the responsibility to confirm water supplies for proposed subdivisions. This was amended in 1973 to provide that the State Engineer was to prepare and provide a review of water quantity. Authority for final approval rests with the health division of the Department of Human Resources. It is appropriate and necessary that the State Engineer be responsible for water quantity determinations in accordance with the provisions of the water law. Such provisions require that due diligence be exercised in any development of water to satisfy any proposed use. Subdivision approval does not include similar requirements. It is recommended that consideration be given to time limits on subdivision approvals [by counties]. That is, subdivisions would be approved [by counties] for development within a given period, at the conclusion of which the undeveloped portion would be subject to reconsideration. An alternative to this approach would be a requirement that water supply and sewer or disposal service be available at each lot prior to sale.”

**Current Status.** NRS 278.360 has since been modified which places time limits on tentative subdivision map approvals. NRS 278.377, added in 1977 with subsequent revisions, requires approval of subdivision maps by the State Engineer with regard to water quantity. A 1978 Attorney General’s opinion found that this statute grants the State Engineer has the authority to disapprove tentative subdivision maps on the basis of water quantity. Also, NRS 278.462 was added which authorizes the State Engineer to make recommendations on water quantity for parcels when requested by the county or other governing body.

## **State vs. Federal Jurisdiction**

**1974 Recommendations.** “There [have] long existed questions about state and federal jurisdiction over water supplies on federally controlled lands. There have been numerous court decisions on this subject, however there remain many uncertainties which can only be resolved through federal legislation. Such legislation has been introduced in Congress in the past and will likely be introduced in the future. It is recommended that officials and citizens of the State closely scrutinize any such legislation and offer support or resistance in an effort to protect what should properly be the individual State role in administration of the resource.”

**Current Status.** The State continues to protect its primacy in water resources administration.

## **Flood Control**

**1974 Recommendations.** “...There are extensive flood insurance programs presently available through federal agencies, and State assistance is available to local authorities for securing information about such programs. It is recommended that flood plain zoning ordinances or regulations be formulated and enforced by local government agencies. If this is not effective, flood plain zoning should be considered at the State level.”

**Current Status.** There have been a number of improvements to state floodplain management since issuance of the 1974 State Water Plan. For details on these changes, refer to the discussion on

“Flood Management in Nevada” in Part 3 of the *State Water Plan*.

## **Navigability Effects**

**1974 Recommendations.** “There have recently been judicial determinations and legal opinions concerning navigability of some of the streams in Nevada. This has raised questions regarding State responsibilities and possible liabilities in maintaining stream channels and related issues. For example, if the course of a navigable stream is altered, either through natural processes or by design, what is the ownership status of the vacated area and resources, such as gravel aggregate within these areas. It is recommended that proper authority analyze possible ramifications, not only for the protection of the State, but so that the public may be better informed.”

**Current Status.** NRS 532.220 established a program to aid local governments in the clearance, maintenance, restoration, surveying and monumenting of navigable rivers. In 1980, the Attorney General issued an opinion stating that cities, counties and public districts (including irrigation districts and flood control districts) and the United States have the authority to maintain or improve the channel of a navigable river to assure its flow capacity or to avoid flood damage to adjoining property. However, no state or federal statutes require these entities to undertake such projects.

## **Environmental Considerations**

**1974 Recommendations.** “There has been an increasing public awareness and understanding regarding environmentally related concerns with respect to water and other natural resources within the State. Efforts to continue and extend this public awareness through dissemination of information and through the academic system should be encouraged. Specific project or resource planning should include a consideration of environmental impacts, not only on the immediate area, but on a regional basis. Watershed management programs should include such factors as sediment retention, vegetation manipulation and management, livestock and wildlife carrying capacities, and other factors to enhance environmental quality within water availability. Critical habitat and rare and endangered species should be considered and, if necessary for their protection, appropriate water rights should be acquired. In most instances, water quality and quantity questions and issues must be jointly considered. Compatibility of administrative procedures and regulations must be retained.”

**Current Status.** A number of actions have been taken since 1974. NRS 533.437 was added thereby allowing the issuance of temporary permits to appropriate water needed to avoid pollution of contamination of a water source. NRS 533.367 was added which states that “[b]efore a person may obtain a right to the use of water from a spring or water which has seeped to the surface of the ground, he must ensure that wildlife which customarily uses the water will continue to have access to it.” Since 1974, Nevada Supreme Court findings have led to a broader legal interpretation of beneficial use regarding wildlife needs. In 1988, *Nevada v. Morros* concluded that providing water to wildlife is a beneficial use of water.

There are numerous examples of water rights being acquired for resource conservation purposes. The Park and Wildlife Bond Act of 1990 (Question 5) authorized the expenditure of \$47.2 million

which has been used to purchase land with special resource values. In addition, \$5 million was designated for water rights acquisitions.

The Director of the Department of Conservation and Natural Resources and the Divisions of Water Resources, Environmental Protection, and Wildlife are jointly considering water quantity, water quality and wildlife impacts when reviewing mining withdrawal applications. The Division of Water Planning has been directed to consider both water quantity and quality in its planning.

For additional information, refer to the discussions on “Nonpoint Source Pollution”, “Comprehensive Groundwater Protection and Management”, “Watershed Planning and Management”, and “Wildlife and Environmental Water Uses and Needs” in Part 3 of the *State Water Plan*.

### **Continuing Planning Efforts**

**1974 Recommendations.** “The planning effort does not end here. In the 1969 report to the Legislative Commission and in testimony before the Legislative Committees, it was emphasized that water planning would be a continuing requirement. The State role and responsibility of review and evaluation of proposals by other agencies continues. Also, there is a need to provide assistance in other planning efforts, such as land planning, and water quality planning. Participation in federal, regional, and interstate investigation and negotiations is necessary to assure adequate consideration of the State of Nevada’s interest and position in water transfer or related matters. Data and information used in water resource decisions requires continuing attention to assure that it is current. It is recommended that staff and funding for the Water Planning Section in the Division of Water Resources be continued at the current rate for the next biennium and that requirements be reevaluated periodically thereafter.”

**Current Status.** The state water planning program was active until the early 1980's, although with a dwindling staff. In 1982, the program was eliminated due to severe funding shortages. The water planning program was re-instituted by the 1989 State Legislature, with staff hired during 1990. Since that time, the Division of Water Planning has undertaken a number of efforts. For example, the Division has produced over 50 publications including the *State Water Plan*, continues to provide

assistance to local planning efforts, compiles and distributes needed information, and administers a drinking water system grant program and a floodplain management program.

## ***Regional Conclusions and Recommendations of the 1974 State Water Plan***

### **Walker River Basin**

**1974 Recommendations.** “There is not sufficient water in the Walker River system to satisfy present and projected requirements upstream and yet maintain Walker Lake as a viable fishery as it presently exists. Water levels will continue to decline and salinity will continue to increase.

Water rights confirmed both by Decree from the Federal District Court and in appropriations through State procedures must be recognized in administering water supplies of the system.

It has been suggested that extensive studies such as State-Federal Task Forces be created to further evaluate water uses and practices within the Walker River Basin. Many of the findings of the Pyramid Lake Task Force can be applied, at least in concept, to the Walker River system. It is doubtful that another Task Force effort would yield significant new data or information.

Means of maintaining the Walker Lake fishery by introducing new species that can adjust to increased salinity should be explored. Also, replacement of fishery pressures to upstream reservoirs should be considered.

The only apparent means of maintaining the existing level of Walker Lake would be to acquire existing water rights upstream for transfer to Walker Lake. No recommendation is made for a legislative determination in this matter.

It is recommended that the allocation of water set forth in the California-Nevada Interstate Water Compact be recognized and preserved.”

**Current Status.** Since the completion of the 1974 State Water Plan, Walker Lake water levels have continued to decline and salinity has increased.

Walker River Decree rights and state appropriative rights continue to be recognized in administering the water supplies.

The University of Nevada Reno and the Desert Research Institute have been studying the feasibility of a water bank as a mechanism for the voluntary leasing or transferring of water rights from one user to another. The Walker River Basin Advisory Committee is studying strategies for improving water conservation in the basin. Both of these studies are funded primarily with federal monies. The U.S. Army Corps of Engineers is now planning to develop various ecosystem restoration studies and projects in the basin, and is seeking local sponsorship. The Division of Water Planning created the Walker River Basin Technical Network to increase coordination among the various groups studying the basin, and improve information sharing and distribution. Using federal funds, the Division hired

a part-time watershed planner to oversee the Network and begin development of a watershed plan.

A number of efforts addressing the Walker Lake situation have been undertaken in recent years. For instance, the Division of Wildlife is now acclimating hatchery fish to high salinity water prior to their release into Walker Lake. This has greatly decreased fish mortality following planting. Over 20 studies by 10 separate agencies are currently underway or pending.

In 1983, the Division of Wildlife perfected a water right (certificate was issued) for the Walker River flood waters flowing into Walker Lake. This right is one of the most junior on the system with a priority date of September 17, 1970. A number of studies are underway which examine feasible water augmentation solutions for Walker Lake.

The California-Nevada Interstate Compact remains unratified by U.S. Congress. The Truckee-Carson-Pyramid Lake Water Rights Settlement Act of 1990 (Public Law 101-618) addressed interstate allocations of the Truckee and Carson rivers, and Lake Tahoe, but not interstate allocations of the Walker River.

### **Carson-Truckee River Basins**

**1974 Recommendations.** "...The State should continue to pursue and support Congressional approval of the California-Nevada Interstate Compact concerning waters of Lake Tahoe and the Truckee, Carson and Walker River Basins as ratified by the State of Nevada and California. Pending Congressional approval, the allocations of water and other provisions should be recognized and followed as State policy.

The Pyramid Lake Task Force Recommendations (both the so-called 'Government' recommendations and 'Sierra Club' recommendations) should be pressed for implementation in the areas found practical and feasible.

(Note: A summary of the main recommendations presented by these groups include:

- strict enforcement of existing decrees
- continue following suggested rules and regulations for operation of the Truckee and Carson rivers, including Lahontan Reservoir
- a variety of improvements to Truckee-Carson Irrigation District facilities to improve efficiencies while wildlife, waterfowl and recreation areas are kept viable
- initiate a cooperative pilot program to demonstrate the effects of a sprinkler system
- expedite design and construction of Marble Bluff Dam and Fishway)

The State should provide necessary funding for advancing and defending the State's position in litigation.

A firm decision should be made regarding development of water supplies within the 'Marlette-Hobart' system and intended uses of these supplies.

A reevaluation of Watasheamu Dam and Reservoir for possible recreation use and Municipal and

Industrial use in Carson Valley and Carson City should be requested of the Bureau of Reclamation.

Several alternatives for additional water supplies to serve Carson City have been identified and presented. Local interests should be encouraged to proceed with necessary legal, engineering and funding proposals for augmentation. The alternative will be a limitation on future growth and development.”

**Current Status.** The California-Nevada Interstate Compact remains unratified by U.S. Congress. The Truckee-Carson-Pyramid Lake Water Rights Settlement Act of 1990 (Public Law 101-618) addressed interstate allocations of the Truckee and Carson rivers, and Lake Tahoe, but not interstate allocations of the Walker River.

Many of the recommendations of the Pyramid Lake Task Force were addressed in Public Law 101-618 including efficiency studies, and the purchase of water rights for wildlife. Other recommendations were addressed in OCAP (Operating Criteria and Procedures) such as storage levels, operational improvements, etc. Also, the Pyramid Lake Paiute Tribe has secured a right to the unappropriated water in the Truckee River in accordance with Nevada water law.

For about 25 years, the Department of Conservation and Natural Resources has had a fund for financing litigation in the Truckee, Carson and Walker rivers.

Since 1974, the State acquired the Marlette-Hobart system and operates it today to serve Silver City, Gold Hill, Virginia City and Carson City.

With California designating the East Fork of the Carson River as a wild and scenic river, the Watasheamu Dam and Reservoir project (which would inundate a portion of the river in California) was prohibited. Subsequent to this action, the Carson Water Subconservancy District funded a study examining the feasibility of a smaller dam and reservoir (Bodie Dam) which would not inundate lands in California. Bodie Dam was not found to be cost effective. The Subconservancy continues to examine alternative supply and management options.

Since 1974, Carson City has proceeded with the necessary steps for supply augmentation and has secured adequate water supplies for their planning horizon.

## **Humboldt River Basin**

**1974 Recommendations.** “Occasionally, there are surplus waters in the Humboldt river system...Portions of this water could be salvaged for beneficial conservation and recreation uses upstream. Additionally, there is need for stabilizing flows, reducing flood damages and providing sediment detention by providing upstream storage.

The proposed Humboldt River Storage Project includes...[a number of storage reservoirs]. The 1973 Legislature passed a Resolution supporting the Humboldt Project, contingent upon a favorable environmental and fish and wildlife impact assessment and other beneficial aspects. A sum was also appropriated for an analysis of the impacts. The results will be furnished in separate reports, and

specific recommendations will depend upon these results.

However, it can be recommended that in any event, existing water rights be protected and in no way jeopardized.

Also, water rights for the Humboldt-Toulon Wildlife area are being considered and will be considered further.”

**Current Status.** In 1974, an environmental investigation of proposed Humboldt River Storage Project plus the proposed Rock Creek dam was completed. Of the proposed projects, only the South Fork Dam and Reservoir has been constructed at a smaller scale than originally envisioned. South Fork Reservoir is operated solely for recreation purposes.

Existing water rights continue to be protected.

Water rights have been acquired for the Humboldt-Toulon Wildlife area.

## **Central Region**

**1974 Recommendations.** “This area encompasses the large portion of Central Nevada where there are no large stream systems or surface water sources...[Local people] were concerned about being ‘lumped’ in such a large area. Some Pahrump Valley residents felt that population projections were low.

Consideration should be given to a Compact concerning water of the Pahrump Valley Ground Water Basin between Nevada and California.

It is recommended that growth trends be carefully monitored to assess the potential water requirements.

This region also holds potential for the area development concept, but this should not be imposed on the local people without their opportunity to be heard.”

**Current Status.** No action has been taken on a compact between Nevada and California regarding Pahrump Valley groundwater. In 1991, NRS 532.175 was added to the statutes thereby authorizing the State Engineer to enter into agreements with neighboring states concerning the cooperative management of shared groundwater basins. Currently, no such agreement exists for Pahrump Valley.

Some of the counties within the Central Region are developing water plans that examine growth trends and assess their future water needs.

## **Colorado River Basin**

**1974 Recommendations.** “Presently available sources of water for the Las Vegas Valley including groundwater, Colorado River supplies, and return flows from use of these sources are projected to

be adequate until sometime between 1990 and 2000. There may be a period of time before 1980 (prior to implementation of the second stage of the Southern Nevada Water Supply Project) when shortages could be expected. These times and dates will depend on growth of the area and resulting increases in water requirements.

Recommendations for this area are: The second stage of the Southern Nevada Water Supply Project should be expedited and completed at the earliest possible time.

Local water service entities should continue and, in fact, increase their efforts to maximize use of the Colorado River supplies and thus reduce withdrawals from the ground water basin.

Population growth and resulting increases in water requirements should be monitored closely.

The alternatives presented in the special Water Planning Report, 'Water Supply for the Future in Southern Nevada' [1971] should be considered in establishing goals and procedures for possible means of meeting future water requirements. This responsibility should be assumed by Clark County with necessary assistance provided by the State.

(Note: The basic alternatives presented in the above-referenced report included:

- water from sources within Nevada - Pahrump Valley, Amargosa Desert, Railroad Valley, Pahrangat Valley, Virgin River Valley
- water from sources outside Nevada - Snake River basin, Columbia River basin, desalination of Pacific Ocean water in exchange for additional Colorado River water
- conservation to reduce demands
- population redistribution - providing economic incentives to future growth to occur outside of the Las Vegas metropolitan in other areas of excess water
- limiting population growth)

Return flow should be carefully administered and managed for optimum use.

The State and local roles in matters such as Colorado River salinity and water quality controls should continue to be vigorously pursued.

The State representation should continue active participation in efforts such as the Committee of '14' and the Colorado River Salinity Forum to assure that Nevada's interests in the Colorado River are protected.

Discussions should be initiated with representatives of Utah and Arizona directed to formulating a Compact to allocate the waters of the Virgin River."

**Current Status.** Construction of the second stage of the Southern Nevada Water Supply Project started in 1977 and was completed by 1983. Rapid growth has continued in the Las Vegas Valley and in 1993 the first phase of a multiyear capital improvement plan to supply the needed water was initiated. Phase I was completed in 1997 and Phase II will be completed in 1999.

In 1991, the Southern Nevada Water Authority (SNWA) was created through a cooperative agreement among the seven regional water and wastewater agencies in Clark County. The purposes of SNWA are to seek new water resources for Southern Nevada, to manage existing and future water resources, to construct and manage regional water facilities, and to promote responsible conservation. In 1994, SNWA began an integrated resource planning process to aid in the selection of appropriate combinations of resources, facilities and conservation program to meet future demands in Southern Nevada. The SNWA Water Resource Plan was completed January 1996 and amended February 1997. SNWA continues to monitor population and water use growth, and examine alternatives which optimize all supplies, including the Colorado River, other surface water, groundwater, and reclaimed water.

Some of the alternatives presented in “Water Supply for the Future in Southern Nevada” are being implemented, fully or partially, or are still being considered as potential future solutions:

- Conservation measures are successfully reducing water demands in the Las Vegas Valley. The implementation of additional conservation measures is an integral part of SNWA’s Water Resource Plan for the future.
- The SNWA Water Resource Plan includes the Cooperative Water Project (CWP) as a potential future water supply alternative to meet demands beyond the year 2025. The CWP involves the collection and transmission of groundwater from sixteen hydrologic basins in Clark, Lincoln, Nye and White Pine counties.

Return flows to the Colorado River from Las Vegas Valley are calculated by a methodology developed by the U.S. Bureau of Reclamation in consultation with the Colorado River Commission, and was approved by the lower Colorado River basin states in 1984.

The Nevada Division of Environmental Protection established the Lake Mead Water Quality Coordination Forum with the objective to protect public health and preserve the water quality of the Las Vegas Valley Wash and Bay and Lake Mead. The Forum coordinates the many efforts of the interested parties and stakeholders regarding the water quality concerns.

The State continues to be active in the Colorado River Basin Salinity Control Forum and support those projects beneficial to Nevada.

The State Engineer has initiated discussions with Utah and Arizona representatives regarding the allocation of Virgin River water. Also, the State Engineer has issued a water right permit to Southern Nevada Water Authority for an average of 190,000 acre-feet per year from the Virgin River.

### **Snake River Basin**

**1974 Recommendations.** “The Nevada Legislature previously ratified a Columbia River Compact which includes the water supplies within this region. The Compact was not ratified by some other participating states and is therefore not effective. There has been a renewed interest throughout the Northwestern states in pursuing Compact negotiations.

It is recommended that Nevada representatives actively participate in such negotiations to protect our share of this resource.

The State is currently a party in a suit involving development and use of groundwater in Nevada and the possible effects on surface streams in Nevada which flow into Idaho. It is recommended that the State's position in this suit be aggressively pursued and defended."

**Current Status.** The Columbia River Compact remains unratified by some states, however the Compact Commission is still in existence. The suit referred to the 1974 Recommendations (Bellbrand) has been settled. The surface waters in the Salmon Falls Creek and Goose Creek areas were adjudicated. The remainder of the tributaries are presently being adjudicated.

## ***1974 State Water Plan Conclusions and Recommendations on Projected Water Requirements***

### **Municipal and Industrial**

**1974 Recommendations.** "In most communities and cities throughout the State, there will be sufficient water available in the immediate area to meet projected municipal and industrial requirements, through the planning period or until 2020. In some cases, water quality problems may develop and treatment will be necessary. Also, in many instances, it may be necessary to acquire existing water rights and change the manner of use.

It is recommended that water service entities in the various cities and communities assess their water supply and treatment needs and immediately initiate programs to assure a sufficient water supply for their anticipated needs. Necessary data and assistance is available from State Water Planning information."

**Current Status.** The larger municipal water suppliers have been actively planning for future water supply and treatment needs, and developing capital improvement programs. The Division of Water Planning continues to provide data and assistance to water service entities and others. Through the AB 198 grant program, the Division of Water Planning has provided funding assistance to the smaller communities for infrastructure improvements.

### **Electric Energy Generation**

**1974 Recommendations.** "More electric energy facilities will be required in the future to supply Nevada's demand, and possibly to supply a portion of demand in the remaining ten Western States.

Private, state, and federal studies should continue for conventional fossil fueled plants, as well as nuclear plants, geothermal plants, and pumped storage facilities. New dams and reservoirs should be analyzed to see if electric power generation would be feasible. Utilities should consider purchasing

existing water rights to provide the additional necessary water supplies required for steam-electric generation of electric energy.

Caution should be exercised not to overcommit water supplies for generation of power to be exported. If export is necessary for a period of time, a ‘recapture’ condition should be imposed to assure that demands and requirements within Nevada can be met.”

**Current Status.** In 1981, NRS 533.372 was added to the statutes authorizing the State Engineer to approve or disapprove any water right application for the purpose of generating energy to be exported out of Nevada.

## **Mining**

**1974 Recommendations.** “Mining has been an industry in Nevada for over 100 years and is expected to continue to be economically vital. Many of the mining processes require large amounts of water, some of which result in a degradation of water quality.

Discharge water should be adequately treated before returning to the stream or river system or to a ground water basin.

In water-short areas, or where the projected mining water demands exceed the available supply, plans to augment present supplies should be initiated. These might include interbasin transfers, purchasing existing water rights, and possibly reusing discharge waters.”

**Current Status.** Mining water use has changed significantly since the release of the 1974 State Water Plan. Since that time, withdrawals have increased over 10 times due primarily to increased pit dewatering activities. Of the estimated 274,000 acre-feet withdrawn in 1995 at mines, only about 32 percent was consumptively used by mine operations. The remaining volume was reinjected, infiltrated, evaporated, discharged to surface water bodies, or reused for irrigation purposes. Disposal of these excess waters has been regulated by the Division of Environmental Protection to ensure that the waters are adequately treated prior to discharge. While some mines are utilizing excess pit water, other mines have had to rely on interbasin transfers or the purchase of water rights for their needed supplies.

## **Recreation**

**1974 Recommendations.** “There is a general need for more water-based recreation in Nevada... In construction of new reservoirs, consideration should be given to minimum flows and maintenance of minimum pools. Diversions should be screened and fish ladders built at new and existing dams. As the demand increases for water-based recreation, new areas should be developed and new facilities should be established at existing lakes and reservoirs.

Requirements for minimum pools and minimum flows should not be imposed on existing facilities or

projects unless water rights are acquired for these purposes, either through new appropriation or acquisition of existing rights.”

**Current Status.** NRS 535.020 requires that new dams or the alteration of existing dams have fishways installed over or around dams, and for the protection and preservation of fish in streams obstructed by dams. In 1986, the South Fork Reservoir near Elko was constructed solely for recreational purposes. The operation of this reservoir provides for minimum downstream flows. There are numerous examples of water rights being acquired for recreation, environmental and wildlife purposes as presented in the “Environmental Considerations” discussion in this section of the *State Water Plan*. For additional information, refer to the discussion on “Maintaining Recreational Values” in Part 3 of the *State Water Plan*.

## **Agriculture**

**1974 Recommendations.** “Potential agricultural development is severely limited in many areas of the State because of inadequate water supplies. It has been necessary to deny issuance of permits to appropriate water for agricultural use in some areas. Existing agriculture is inhibited also in some cases by variations of flows, sedimentation, salinity, floods, and outmoded structures and facilities.

Consideration should be given by ranchers, farmers, irrigation districts and water companies to improved efficiencies, regulatory storage facilities, management and operation practices and to other conservation measures.

The state should continue to enforce water right conditions for maximum utilization of the limited supplies.”

**Current Status.** Nevada’s agricultural community has been implementing a variety of conservation measures throughout the State, particularly in the Walker and Carson River basins and the Lovelock area (Humboldt River basin). For more information, refer to the discussion on “Water Conservation” in Part 3 of the *State Water Plan*.

## **Fish and Wildlife**

**1974 Recommendations.** “As the development and use of water in the State has increased, in some cases, natural sources of water have been restricted or become completely inaccessible to wildlife. Other factors affecting wildlife watering include the continued physical presence of domestic livestock or human activity at or near water sources.

One possible solution would be for the Fish and Game Department to acquire water rights for wildlife purposes at the various natural water sources. This procedure would be time consuming and expensive.

An alternative would be legislation to provide that in new appropriations of water, that the applicant allow a sufficient quantity of water to remain at the source for wildlife needs. This requirement should not be imposed on existing facilities and should not impair or adversely affect existing water rights.

**Current Status.** A number of actions have been taken to provide water supplies for fish and wildlife. For more information, refer to the discussions on “Environmental Considerations” and “Recreation” presented earlier in this section of the *State Water Plan*.