



SOUTHERN NEVADA
WATER AUTHORITY

Integrated Water Planning Advisory Committee

RECOMMENDATIONS REPORT

September 26, 2005

Background	3
I. Advisory Committee	4
a. Purpose	4
b. Members	4
c. Process	4
II. Discussion Topics	5
III. Recommendations	7
a. Conservation.....	8
b. Resource Development	9
c. Resource Management	13
d. Funding.....	14
Appendix A – Membership	16
a. IWPAC Membership.....	17
b. IWPAC Financial Subcommittee Membership.....	18
Appendix B – Meeting Synopsis	19
a. Committee Meetings	20
b. Financial Subcommittee Meetings	21
c. Committee Tours/Workshops	22
Appendix C – IWP Resource Options	23
Appendix D – IWP Planning Scenarios.....	40
Appendix E – Evaluation Criteria	53
Appendix F – Member Perspectives	55

Integrated Water Planning Advisory Committee Recommendations Report

Background

From its inception, the Southern Nevada Water Authority (SNWA) has emphasized long-term planning in its water resource development and management. The SNWA Water Resource Plan, first produced in 1996, discusses the supply-and-demand conditions, resources, projects and other issues that guide this long-term planning. The SNWA regularly evaluates these issues and updates the plan accordingly. This continual review and adjustment allows the SNWA to implement additional water supplies and associated infrastructure for Southern Nevada only as they are needed, without building more facilities than is necessary or incurring unnecessary costs.

Over the past five years, the record-breaking drought conditions in the Colorado River Basin have reduced the projected availability of near-term water resources such as Interim Surplus Colorado River water. The drought also has underscored the need for Southern Nevada to begin accessing undeveloped, non-Colorado River water supplies within the SNWA water resource portfolio. In response, the SNWA took steps in 2003-04 to accelerate the scheduled development of three separate in-state water projects: the Three Lakes Valley Groundwater Development Project; Virgin and Muddy Rivers Surface Water Development Project; and Clark, Lincoln and White Pine Counties Groundwater Development Project.

Accelerating the schedules for three different in-state water projects involves a number of steps for each project, including the processing of right-of-way applications, assessment of environmental impacts, permitting of water rights (where applicable), and coordination of various management, operational and financing issues. To address these issues in a comprehensive way, the SNWA initiated an integrated water planning (IWP) process in early 2004. As part of its IWP process, the SNWA convened a 29-member stakeholder group to provide input on how to integrate in-state water resources into the current planning and management activities of the SNWA.

This stakeholder group, known as the Integrated Water Planning Advisory Committee (IWPAC), met 13 times between August 2004 and September 2005. The committee process consisted of three phases – education, evaluation of resource options and formulation of recommendations. Committee meetings were broadcast to seven remote locations in Nye, Lincoln, White Pine and northern Clark counties, where comments were taken from rural residents and forwarded to committee members. To further assist in deliberations, committee members attended two workshops in White Pine County. In addition, nine members of the full committee volunteered to participate on a subcommittee that reviewed and discussed issues related to the financing of in-state water projects.

This report summarizes the activities and results of the IWPAC process. Section I is an overview of the committee process. Section II reviews committee discussion topics. Section III provides the committee's 22 recommendations in the areas of water conservation, resources development, resource management and funding. Appendices A through F provide a list of committee members, synopses of each meeting, fact sheets on each resource option, summaries of key resource scenarios, committee evaluation criteria, and individual member perspectives, respectively.

I. **Advisory Committee**

Purpose

The IWPAC was convened in August 2004 by the SNWA Board of Directors to develop recommendations on how best to integrate in-state resources into the planning and management activities of Southern Nevada. To consider the monetary aspects of in-state resource development activities, a financial subcommittee was formed to develop recommendations on how to finance resource options discussed by the full committee.

Members

The IWPAC consisted of twenty-nine (29) members, representing diverse stakeholder groups with an interest in the SNWA's water planning efforts. The SNWA Board selected 21 members to represent interests in Southern Nevada. Eight other representatives were appointed to represent Lincoln, White Pine and Nye counties; Virgin Valley and Moapa Valley water districts; the Colorado River Commission; the State Legislative Committee on Public Lands; and the Office of the Governor, respectively

The Financial Subcommittee included nine (9) IWPAC members, representing Southern Nevada interests. A list of IWPAC and financial subcommittee members is provided in Appendix A.

Process

To coordinate and manage committee and subcommittee meetings, the SNWA retained an independent, neutral facilitator from out-of-state (Lewis Michaelson, Katz & Associates, San Diego, California). Mr. Michaelson was responsible for soliciting dialogue and interaction among committee members, ensuring all perspectives had an opportunity to be heard and considered, and suggesting appropriate process tools to assist the committee members in problem-solving and other aspects of their deliberations.

“Consensus” served as the basis for formulation of the IWPAC's recommendations. Members did not vote on specific items, but worked together to identify positions that were generally acceptable to the committee as a whole. In instances where consensus was not possible (that is, where members had strong conflicting positions or perspectives on an issue), the minority views have been preserved in this final report.

To encourage public involvement and provide an opportunity for interested parties outside of the Las Vegas Valley to follow the committee's deliberations, IWPAC meetings were broadcast live to seven remote locations in Nevada, including Baker, Ely, Lund, Alamo, Logandale, Panaca and Pahrump. SNWA staff was assigned to each location and distributed copies of presentation materials, meeting summaries and other information being discussed by the committee. Those attending the remote broadcasts were encouraged to share their thoughts through the use of comment cards. Comments submitted by the public were provided to IWPAC members and included in the record of each meeting. SNWA staff provided written responses to each of the comments received.

An overview of each IWPAC and IWPAC Financial Subcommittee meeting is included in Appendix B. A complete summary for each meeting is available by contacting the SNWA.

II. Discussion Topics

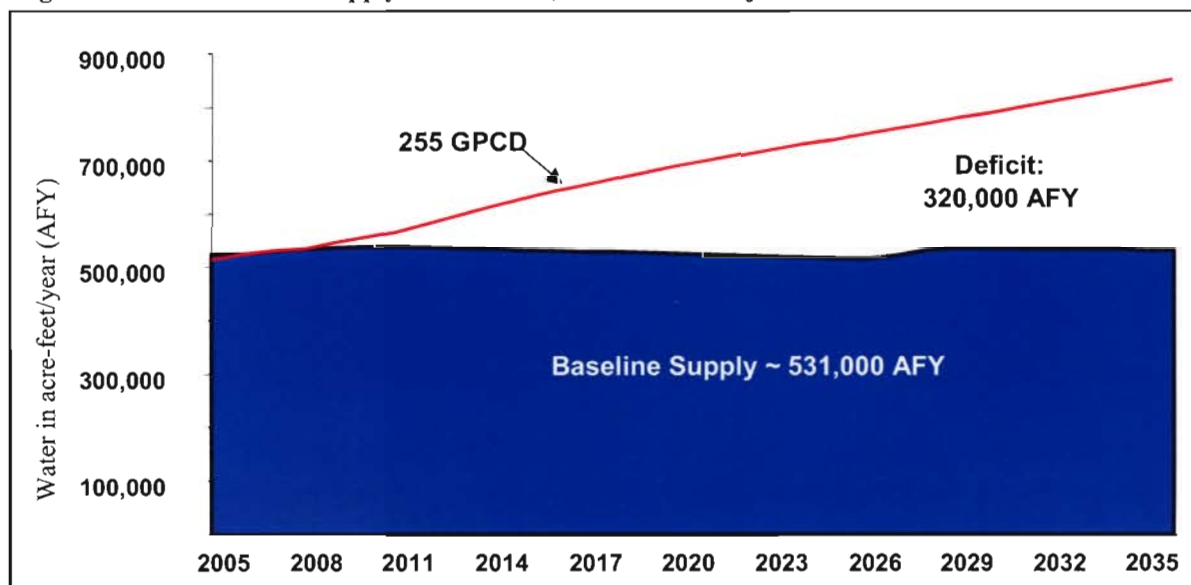
As part of its orientation, the IWPAC received briefings on current drought conditions, Southern Nevada’s drought response, SNWA facilities, current and future water resources, water demand forecasting, water conservation, Nevada water law, federal environmental laws and regulations (including the National Environmental Policy Act), SNWA in-state water resource projects, and wastewater issues.

During the educational portion of the IWPAC process and subsequent deliberations, the committee considered a number of key concepts and issues, including:

- The importance of ensuring adequate protection against current and future drought(s)
- The challenge of maintaining Southern Nevada’s drought response and conservation water savings while further maximizing the efficient use of existing water supplies
- The level of difficulty and approvals associated with each resource option
- The highly variable factors associated with predicting the timing and magnitude of future growth patterns
- The safeguards in place (and that should be in place) to protect the environment and communities located in areas from which in-state resources may be drawn

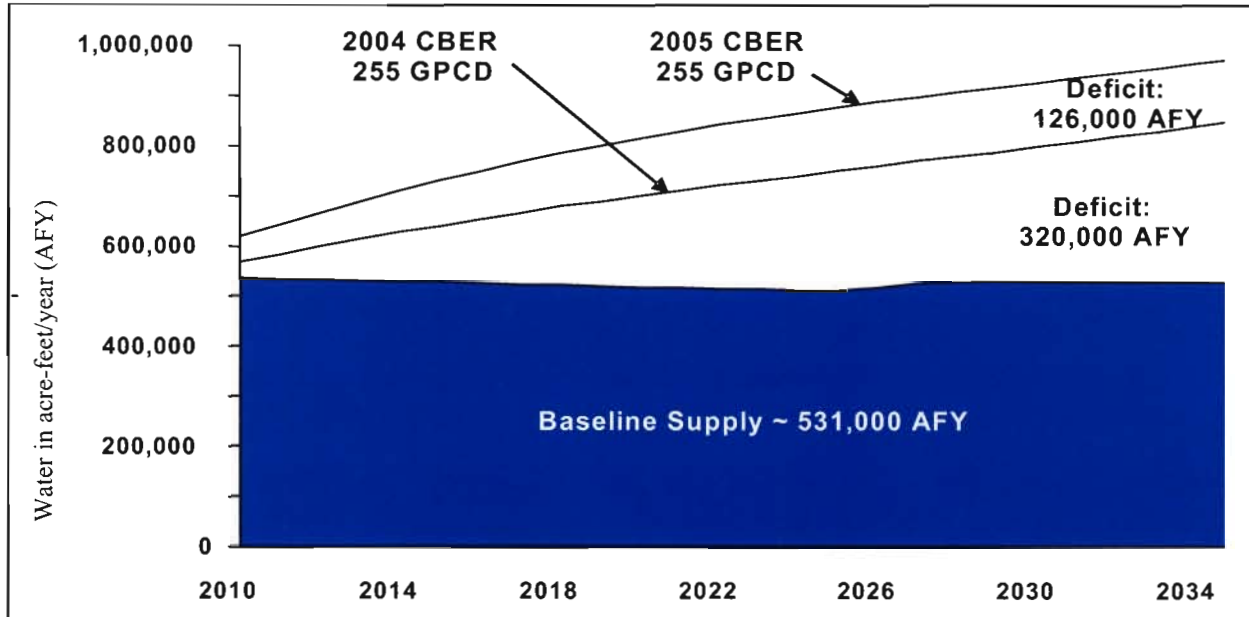
A critical step in the IWPAC process was to achieve consensus on a “problem statement” – that is, a baseline projection of future water demands and estimated supply deficits throughout the planning horizon (to 2035). As shown in Figure 1 below, SNWA staff suggested using projected water demands based on 2004 population projections from the Center for Business and Economic Research (CBER) and reduced water use for anticipated conservation achievements (from 272 gallons per capita per day (GPCD) in 2004 to 255 GPCD in 2010).

Figure 1 – Baseline Water Supply and Demand, 2004 CBER Projection



The committee agreed with this initial approach, but reserved the right to review these assumptions as the process progressed. In August 2005, updated population projections from the CBER were available and reviewed by the committee. As shown in Figure 2, the 2005 projection suggested an increase of about 450,000 new residents during the planning horizon, which translated into an additional demand of approximately 126,000 acre-feet per year, assuming a conservation achievement of 255 GPCD by 2010. This increase results in a total projected deficit of 446,000 afy in 2035. This new information revealed that additional conservation – beyond 255 GPCD – would be required in order to meet near- and long-term demands.

Figure 2 – Baseline Water Supply and Demand, 2005 CBER Projection



The committee reviewed future resource options that could potentially be utilized to meet the projected deficit through 2035. SNWA staff provided information on each resource option, including the estimated water supply yield and cost, as well as timing and implementation issues. Resource options discussed by the committee are listed below. A more detailed summary for each is included in Appendix C.

- **Colorado River Resources**
 - Interim Surplus
 - Surplus
 - Arizona Water Bank
 - California Water Bank
 - Transfers and Exchanges, including Seawater Desalination

- **Las Vegas Hydrographic Basin Resources**
 - Southern Nevada Water Bank
 - Las Vegas Valley Shallow Aquifer

- **In-State Water Resources**
 - Surface Water:
 - Virgin/Muddy River Pre-Compact Water Rights
 - Virgin River Water Rights

- Lake Conveyance
 - Surface Diversion
 - Radial Well Diversion
- Groundwater:
 - Three Lakes and Tikaboo South Valleys Groundwater
 - Coyote Spring Valley Groundwater
 - Clark, Lincoln & White Pine Counties Groundwater
 - 5-Basin Approach (Coyote Spring, Delamar, Dry Lake, Cave, and Spring Valleys)
 - 6-Basin Approach (Coyote Spring, Delamar, Dry Lake, Cave, Spring and Snake Valleys)
- **Augmentation Credits and Reuse Resources**
 - Augmentation Credits
 - Wastewater Reuse
- **Additional Conservation**

The committee's evaluation of these resource options led to a general consensus regarding which resource options to analyze in planning scenarios. A majority of the committee members agreed that all planning scenarios should include existing supplies in addition to a combination of the following resources: Arizona Water Bank; Augmentation Credits; Virgin/Muddy River Pre-Compact Water Rights; Virgin River Water Rights (Surface Diversion); Three Lakes and Tikaboo South Valleys Groundwater; Coyote Spring Valley Groundwater; groundwater from Clark, Lincoln & White Pine Counties (5-Basin and 6-Basin Approaches); and additional conservation.

Interim Surplus, surplus, transfers and exchanges, including seawater desalination and water from the Las Vegas Valley shallow aquifer were excluded from planning scenarios because the amount and/or timing of the resource option's availability could not be determined or even estimated. However, these options remain part of the SNWA water resource portfolio.

Based on this direction, SNWA staff developed four planning scenarios (Appendix D). Review and discussion of these planning scenarios led to the development of the committee's final recommendations.

III. Recommendations

Initially, the committee was charged with identifying various alternative scenarios that would meet the projected deficit in 2035. After considerable discussion, however, the IWPAC acknowledged that many factors outside of SNWA's control or prediction could affect the exact timing and quantity of resources available in the future. With this in mind, members concluded that the SNWA should pursue planning for all in-state resource options unless and until it appears that more options are available than needed to meet the deficit. As more detailed information associated with water rights, environmental permitting and interstate discussions becomes available, the IWPAC believes that this approach will need to be revisited and resources prioritized accordingly. The committee developed a series of evaluation criteria (Appendix E) for consideration when prioritizing resources for future development.

Conservation

As a whole, the committee strongly supported additional conservation; opinions varied only on the extent to which conservation should be used as a substitute for the completion of in-state water resource projects. The Lincoln and White Pine County representatives maintained that Southern Nevada should pursue conservation to the level that in-state water projects are not required, or use water savings in conjunction with other non-groundwater supplies, such as ocean desalination. These members also maintained that growth should be slowed or stopped in Southern Nevada in order to permanently delay the Clark, Lincoln and White Pine Counties Groundwater Development Project.

The Colorado River Commission representative warned that acquiring additional Colorado River supplies (such as desalination or other types of transfers/exchanges) is increasingly dependent on Nevada's ability to demonstrate to the other Colorado River Basin states that Nevada has fully explored opportunities for development of its own in-state resources. Other members discouraged artificial growth controls, noting that the consequences of doing so would have serious ramifications for the economy of the state, including rural Nevada.

The following recommendations represent the committee's general conclusions in terms of water conservation in the Las Vegas Valley.

1: Pursue more aggressive promotion of water conservation and regulation of water use through methods such as the reduction of turf.

The committee agreed that aggressive water conservation should be a top priority for the Las Vegas Valley and recommended that additional conservation be pursued in conjunction with the development of in-state resources. Members specifically focused on the need to reduce turf in all customer classes, including residential, commercial, parks, government facilities, etc., since turf was the source of the greatest water waste in the Valley. Members felt strongly that government entities (such as public parks, schools and government facilities) need to actively support conservation and set a positive example for the public. The committee agreed that these activities should include refraining from installing new turf and eliminating existing unusable turf.

2: Decrease total water demand from 272 GPCD to 250 GPCD by 2010 and to 245 GPCD by 2035.

- a. Permanently implement major Drought Alert demand reduction tools identified in the SNWA Drought Plan, including landscape watering restrictions, landscape development codes, golf course water budgets and increased water waste fines and enforcement.
- b. Sustain current pricing signals by ensuring water rates keep pace with inflation.
- c. Maintain or exceed the 2004 participation levels in the SNWA Water Smart Landscapes Rebate Program.

Members agreed that opportunities for additional conservation exist in the Las Vegas Valley. A majority of the committee felt that even further reductions are possible and should be pursued in conjunction with development of in-state water resources.

3: Assess conservation achievement annually, investigate the potential for further GPCD reductions and revise conservation goals accordingly.

Members encouraged the SNWA to further analyze the community’s future conservation potential. As part of this process, the committee agreed that the SNWA should:

- Revisit achievements and goals on a regular basis
- Make adjustments to conservation goals as needed
- Assess and implement the best methods for achieving additional conservation.

Resource Development

4. Pursue development of all the resource options considered in the IWPAC planning scenarios.

- Arizona Water Bank
- Coyote Spring Valley Groundwater Rights
- Three Lakes Valley Groundwater Rights
- Pre-Compact Water Rights (Virgin and Muddy Rivers)
- Virgin River Water Rights
- Clark, Lincoln and White Pine Counties Groundwater Applications
- Augmentation Credits
- Additional Conservation

Given that water rights permitting and environmental compliance processes are not yet complete for several of the resource options, members generally agreed that the SNWA should continue to pursue planning for development of all in-state resource options considered in the planning scenarios. Specific priorities for implementing the development of in-state resources should be determined when more definitive information is available. Recommendations for some of the other resource options discussed by the committee (such as surpluses and ocean desalination) are detailed in the latter portion of this section.

The representatives of White Pine County and Lincoln county disagreed with this recommendation, expressing opposition to the development of groundwater supplies in Lincoln and White Pine Counties. These individuals said that insufficient data were available to justify including these resources in SNWA planning activities and that other options – such as a reallocation of the Colorado River, ocean desalination or a “conservation only” approach – were more viable.

5. Provide additional safeguards for communities and the environment in areas where in-state groundwater resources are developed.

- a. Implement a committee with SNWA and White Pine County representatives to develop annual pumping strategies for Spring and/or Snake Valleys.
- b. Comprehensively monitor and manage any in-state groundwater pumping to assess hydrological effects, sustain the resource and protect the surrounding environment.
- c. Review groundwater situation in Spring and/or Snake Valleys in 75 years, including White Pine County supply needs, basin hydrology and overall pumping data, and revise SNWA permits if conditions warrant it.

The White Pine County representative also recommended that an independent contractor establish a baseline of all waters in target basins as SNWA proceeds with its water rights and environmental activities (a copy of the original recommendation is included in its entirety in Appendix F). The committee agreed that a baseline of water resources was important. Staff noted that a baseline effectively exists in historical data and will be expanded through ongoing processes such as NEPA and state water rights processes. The committee recommended that the SNWA consider options to ensure a baseline was developed either through existing processes or additional work, as appropriate. The committee agreed that these activities should not be a precondition of commencing the remainder of the work and that the results should be available to the public.

The committee acknowledged the extensive protections already provided under Nevada water law and the water-rights approval process of the Nevada State Engineer, which includes the consideration of whether the applicant has justified the need to import the water from another basin; a conservation plan has been adopted and is being effectively carried out; the proposed action is environmentally sound as it relates to the basin from which the water is exported; the proposed action is an appropriate long-term use that will not unduly limit the future growth and development in the basin from which the water is exported, as well as other factors the State Engineer determines to be relevant, including the possibility of aquifer tests to acquire additional information and mitigation or cessation of pumping if impacts occur. In addition, the State Engineer is working with Utah to address issues related to water resources in Snake Valley, a shared groundwater basin. The committee also acknowledged the important role of federal environmental processes in providing protections before any water is moved. Beyond these regulatory processes, the committee learned of various protections, including arrangements for water sharing that currently are in place through existing agreements between the SNWA and Moapa Valley Water District, and the SNWA and Lincoln County.

The committee agreed that – to the extent in-state groundwater resources are developed in the future – it was critical that appropriate safeguards exist to protect the environment and surrounding communities. Toward this end and in response to the concerns expressed by the White Pine County representative, the committee endorsed several additional steps referenced during the meeting discussions. These include the formation of a committee between SNWA and White Pine County to develop an annual pumping strategy, as well as a review of SNWA's water use in 75 years. The committee agreed that any development of groundwater under the 5- or 6-Basin Approach should involve comprehensive monitoring and management, both to obtain more information about the nature of the water supplies in these areas, as well as to refine the operational strategies needed to ensure the sustainability of these resources over time, if or when they are developed. Members were also in support of continued communication and collaboration between Nevada and Utah concerning development activities in Snake Valley, a groundwater basin that is jointly located in the states of Nevada and Utah.

Members concurred that the intent of these safeguards, in addition to other state and federal protections noted above, is to ensure that water right holders and the environment are not adversely impacted.

6: Work with the Colorado River Basin States and the Bureau of Reclamation to implement augmentation credits for in-state, non-Colorado River resources.

The committee strongly supported efforts to implement augmentation credits for in-state resources, recognizing that augmentation credits for in-state, non-Colorado River resources would maximize the utilization of Nevada's in-state resources, significantly increase available supplies and reduce the degree to which new or additional resources would be required to meet future demands.

7: Pursue delivery of pre-compact Muddy and Virgin River water rights through Lake Mead and the existing Southern Nevada Water System ("lake conveyance").

The committee concluded that lake conveyance for pre-compact Muddy and Virgin River water rights is the most economical implementation approach for this resource, given that construction of additional facilities would not be required. However, members recognized that the implementation of lake conveyance would require discussions and approvals from the other Colorado River Basin states. Toward this end, members encouraged the SNWA to begin these discussions in order to further evaluate the feasibility of this option.

8: Pursue "lake conveyance" for the development and use of post-compact Virgin River water rights.

As with the preceding recommendation, the committee recognized that lake conveyance for existing post-compact Virgin River water rights is the most economical development option for this resource. However, members acknowledged that necessary approvals might be more difficult to obtain, given that the prevailing interpretation of the law of the river among the majority of the Colorado River Basin states prohibits lake conveyance of water rights granted following the execution of the 1922 Colorado River Compact.

Toward this end, the committee agreed that if lake conveyance of the SNWA's existing post-compact Virgin River water rights is not possible or unlikely to be available when this resource is needed, the SNWA should construct surface diversion and treatment facilities ("overland conveyance") to utilize this resource.

9: Pursue an interstate agreement with Utah and Arizona concerning use of the Virgin River.

The committee discussed the potential for, and the possible impacts of, upstream Virgin River development by the states of Utah and Arizona. The members agreed that the SNWA should pursue an agreement with these states to safeguard its existing Virgin River water rights and any future investments in capital facilities required to use those rights.

10: Pursue flexible use of Colorado River resources over the long term.

The committee acknowledged that Colorado River water is and will continue to be the primary water resource for the Las Vegas Valley. Toward this end, the committee agreed that Southern Nevada should pursue flexibility of Colorado River resources, both in terms of use and acquisition. The committee encouraged SNWA to continue to work with the other Colorado River Basin States to identify and implement opportunities that will benefit the region over the

long term. Members acknowledged that flexibility of Colorado River resources in the future is dependent on continued conservation gains and Nevada's progress in developing its own in-state resources.

The committee also discussed the uncertainty of a permanent increase to Nevada's annual 300,000 acre-foot Colorado River allocation. While members encouraged flexible use of Colorado River resources over the long-term, most recognized that protecting Southern Nevada against future droughts requires that other non-Colorado River resources be developed.

11: Utilize the Southern Nevada Water Bank and California Water Bank as “bridge resources” to help meet any supply deficits.

The committee agreed that the Southern Nevada and California water banks provide valuable resource supplies, but recognized that the nature of these resources is such that they cannot be depended upon as long-term permanent supplies. Furthermore, one member of the committee expressed concern that withdrawing the full amount of water that had been banked in the Las Vegas Valley could result in subsidence or other unintended impacts; in other words there were practical limitations to the use of these banked resources, even for bridging purposes. The committee concluded that, to the extent practical, these banked resources should be used as a bridge to offset any supply deficits until other more permanent resources are available, recognizing that State Engineer approval is required for annual withdrawals. The committee also supported continued banking of any unused Colorado River allocations to the maximum extent possible.

12: Utilize surplus and interim surplus Colorado River water, if and when they are available.

The committee agreed that surplus and interim surplus Colorado River water supplies should be used when they are available, but recognized that issues associated with timing and yield make this resource too uncertain to quantify or plan for in any given year. To the extent possible, the committee agreed that demands on other available supply sources should be reduced when surplus or interim surplus water is available.

13: Continue to pursue ocean desalination as a long-term resource.

The committee discussed the technical and economical feasibility of ocean desalination at length. A majority of the members recognized desalination as an important future resource, but ultimately agreed that it is not likely to be available in the near-term planning horizon, given projections of future water demand in Southern California and regulatory issues affecting the siting of large-scale desalination facilities in California. Other members maintained that because ocean desalination would occur for Southern Nevada in the form of a transfer of Colorado River water from California to Nevada, this option – to the degree that it replaces other resource options – increases the state's dependency on Colorado River supplies.

The representatives of Lincoln and White Pine counties contended that more emphasis should be placed on ocean desalination, describing it as a potentially “unlimited” resource. While these individuals agreed with the committee's recommendation to pursue ocean desalination, they maintained that this resource is more viable than other options being pursued – specifically groundwater resources in Lincoln and White Pine counties.

14: Pursue additional wastewater reuse to maximize supply availability if augmentation credits cannot be implemented.

The baseline demand projection adopted by the IWPAC includes additional direct reuse of up to a total of 44,000 AFY by 2035. This projection includes consideration of current reuse potential and future demands. The committee agreed that if augmentation credits cannot be implemented for some or all in-state water resources, the SNWA should identify and develop additional reuse opportunities – beyond those included in the baseline demand projection – in order to maximize the use of non-Colorado River supplies.

Given that reuse demands from large-turf irrigation facilities have declined considerably with increasing land costs and since the onset of the drought (for example, existing golf courses are using less water and few new courses are planned), an expansion of current reuse programs into the business and residential sectors of the community may be required.

Resource Management

15: Restrict or eliminate the use of salt-using water softeners at residential and commercial facilities to reduce total dissolved solids (“salts”) in wastewater discharge and to improve reuse and raw water quality.

The committee discussed reuse and raw water quality during the early stages of the IWPAC process. Members observed that salt-using water softeners contribute to higher levels of total dissolved solids (salts) in wastewater discharge, which may constrain direct reuse of wastewater and increase the amount of salts discharged to the Colorado River. As such, the committee recommended that salt-using water softeners be restricted or eliminated in order to improve the quality of reclaimed water for reuse or return to the Colorado River.

16: Utilize the Integrated Water Planning Advisory Committee’s evaluation criteria when assessing priorities for the development of in-state water resources.

Early in the committee process, members identified a set of criteria that they felt were important when considering in-state resource development options and activities. The criteria generally fell into eight major categories, including cost, general feasibility, potential for drought protection, potential for environmental protection, potential for economic benefits, potential for increases system reliability, scheduling and development flexibility, and water quality. Furthermore, during and after meetings with residents of Ely and Baker, Nevada, members strongly indicated that they did not want to see in-state resources developed in a way that adversely impacted existing rural lifestyles.

The committee agreed that the SNWA should utilize these criteria when considering the priority for and the development of in-state water resources in the future – that is, when more information on each of the resource options being pursued is available. A full list of the criteria is provided in Appendix E.

17: Utilize and maintain water supplies in a sustainable manner.

The committee agreed that sustainability was critical to the development of in-state resources. Toward this end, members agreed that any resource option ultimately developed should be utilized and maintained in a sustainable manner, both to ensure its viability as a long-term community resource, and to protect the environment and other water users in the development areas. Monitoring and management is one strategy discussed by the committee as a way to ensure resources are maintained in a sustainable manner over time.

Funding

18: Continue to support the use of diverse funding sources.

- Commodity Charges (water rates)
- Connection Charges
- Sales Tax
- Southern Nevada Public Land Management Act (SNPLMA) Funding
- Other state and federal funding as available

The committee concluded that the cost of new water infrastructure appears to be affordable under most scenarios using existing funding sources. Toward this end, the committee recommended that SNWA continue to support the use of these diverse funding sources, including connection and commodity charges, sales tax, revenues generated from the Southern Nevada Public Land Management Act (SNPLMA) and other state and federal funding sources as available. The committee also recognized that commodity charges (water rates) would be the primary lever to encourage conservation, not connection charges.

19: Revisit the current funding formula for fairness and affordability when a specific project/funding scenario is determined.

The committee agreed that the current SNWA funding formula appeared reasonable for now, but recommended that this formula be revisited when more detailed project cost information is available.

20: Pursue an extension of the ¼ cent sales tax to help pay for future water infrastructure.

The current ¼ cent sales tax is capped at \$2.3 billion or 2025, whichever comes first, and is fully committed to paying for the regional improvements implemented by SNWA over the past ten years. Staff estimated that, at current collection rates, the cap will be reached by 2021. The committee agreed that an extension of the ¼ cent sales tax would create a more diverse, stable funding plan as well as provide substantial funding for future water resource projects. Toward this end, the committee agreed that, when the timing is appropriate, the SNWA should pursue an extension of the ¼ cent sales tax to help fund future/additional water infrastructure.

21: Support the continued allocation of 10% of the funds received from the SNPLMA to the SNWA.

The SNWA currently receives 10 percent of revenues generated from the sale of federal land in the Las Vegas Valley under the SNPLMA. Revenues can be used for regional water facilities and

programs that generate additional water resources, such as conservation. The committee recommended the SNWA support continued receipt of its 10 percent SNPLMA allocation, recognizing that this revenue source is contingent on the sale of available land in the Las Vegas Valley.

22: Increase conservation education, including the financial ramifications that could occur if additional conservation is not achieved.

The committee strongly supported conservation education and recommended increased outreach within the Las Vegas Valley. As part of these activities, members felt that the public should be informed of the financial ramifications – that is, the costs to develop other resources – that could occur if additional conservation is not achieved.

During the IWPAC process and development of recommendations, several committee members shared written materials that expressed their personal views on specific issues (Appendix F). To the extent possible, these views have been captured in the narrative of this report.

APPENDIX A

IWPAC Membership



APPENDIX A

IWPAC Membership

Stakeholder Category

Nevada Taxpayers Association
Gaming
Homebuilders
Master Planner
Large Developer
Industrial/Commercial
Unions
Unions
Environmental
Environmental
Senior Citizens
Senior Citizens
Financial Community
Resident – City of Las Vegas
Resident – City of North Las Vegas
Resident – City of Henderson
Resident – City of Boulder City
Resident – Unincorporated Clark County
Small Business
Paiute Tribe
Small Business
Lincoln County
White Pine County
Nye County
Moapa Valley Water District
Virgin Valley Water District
Colorado River Commission, Chair
State Legislative Committee on Public Lands, Chair
Office of the Governor

Appointee

Bob Campbell
Mark Russell
Joel Laub
John Ritter
Jim Widner
Frank Martin
Danny Thompson
Bob Nard
Peggy Maze Johnson
John Hiatt
Ken Rengert
Earl Burris
Bill Martin
Allen Kaercher
Terry Murphy
Dan Stewart
Bryan Nix
Somer Hollingsworth
Adrian Mendoza
Alfreda Mitre
Clifton Marshall
Glenn Zelch
Dean Baker
Walt Kuver
Glen Hardy
Brent Hardy
Richard Bunker
Dean Rhoads
Michael Hillerby

IWPAC Financial Subcommittee Membership

Stakeholder Category

Member

Master Planner	John Ritter
Industrial/Commercial	Frank Martin
Environmental	Peggy Maze Johnson
Environmental	John Hiatt
Financial Community	Bill Martin
Resident – City of North Las Vegas	Terry Murphy
Resident – City of Henderson	Dan Stewart
Resident – City of Boulder City	Bryan Nix
Colorado River Commission, Chair	Richard Bunker

APPENDIX B

IWPAC Meeting Synopsis



APPENDIX B

IWPAC Meeting Synopsis

The following provides a brief synopsis of discussion topics for each IWPAC meeting. A summary was developed for each meeting and is available by contacting the SNWA.

Meeting 1 – August 30, 2004: Introduction of committee members, facilitator and key SNWA staff. Review IWPAC purpose and process, including meeting schedule, work products, decision-making and guidelines for participation.

Meeting 2 – September 27, 2004: Overview and discussion of current resources, existing facilities and potential impacts of continued drought on SNWA intakes at Lake Mead.

Meeting 3 – October 25, 2004: Overview and discussion of future resources, water demand forecasting and water conservation, including current water use by sector, conservation planning and programs, and current goals and strategies.

Meeting 4 – November 22, 2004: Overview and discussion of Nevada water law, federal environmental laws and regulations, status of SNWA in-state water resource projects and the Lincoln County Conservation, Reclamation and Development Act (H.R. 4593).

Meeting 5 – January 24, 2005: Overview and discussion of wastewater management, water quality issues, reuse and the Clean Water Coalition's Systems Conveyance and Operations Program. Brainstorming exercise on criteria for evaluating resource options and scenarios.

Meeting 6 – February 28, 2005: Overview and discussion of proposed baseline water demand forecast, projected supply deficit and future resource options. Continued discussion of evaluation criteria.

Meeting 7 – March 14, 2005: Continued presentation and committee discussion of IWP resource options: in-state water resources (surface and groundwater) and water demand management (i.e., additional conservation).

Meeting 8 – March 28, 2005: Overview and discussion of process for approval of augmentation credits; population projections for Lincoln, Nye, and White Pine counties; SNWA Drought Plan measures; desalination cost comparison; and IWP resource option cost comparison. Selection of resource options for inclusion in IWP planning scenarios.

Meeting 9 – April 25, 2005: Discussion of IWPAC workshops in Ely and Baker, Nevada. Overview and discussion of two example scenarios. Members favored pursuing continued planning for all resource options, given that many factors outside the Authority's control or prediction could affect the exact timing and quantity of resources in the future.

Meeting 10 – May 23, 2005: Overview and discussion of two additional IWP resource scenarios and Southern Nevada's future conservation potential. Presentation on "Impacts of a Growth Interruption in Southern Nevada" report.

Meeting 11 – June 27, 2005: Presentation on “Hydrogeology of Eastern Nevada,” discussion of IWP resource options with additional conservation, discussion on current and future costs. Review and discussion of preliminary draft recommendations.

Meeting 12 – August 22, 2005: Presentation on updated CBER population projections and review and discussion of draft recommendations.

Meeting 13 – September 26, 2005: Finalize draft recommendations and recommendations report.

IWPAC Financial Subcommittee Meeting Synopsis

The following provides a brief synopsis of discussion topics for each IWPAC Financial Subcommittee meeting. A summary was developed for each meeting and is available by contacting the SNWA.

Meeting 1 – May 23, 2005: Introduction of committee members, facilitator and key SNWA staff. Review subcommittee purpose and process, including meeting schedule and work products. Overview and discussion of finance options and strategies, SNWA financial model and scenario financing options.

Meeting 2 – June 27, 2005: Overview and discussion of current and future resource/scenario costs. Discussion of scenario variables, resources and potential funding sources followed by a comparison of funding scenarios. Discussion of preliminary draft recommendations.

Meeting 3 – August 22, 2005: Overview and discussion of connection charge comparison. Finalize draft recommendations.

IWPAC Tour/Workshop Synopsis

The following provides a brief synopsis of discussion topics for tours and workshops conducted by the IWPAC.

Tour – October 16, 2004: Las Vegas Wash and SNWA/SNWS facilities tour. Discussion topics include Las Vegas Wash flow components, water quality issues, return-flow credits, watershed planning, perchlorate remediation, bank stabilization and enhancements, biological monitoring, Endangered Species Act compliance, drought impacts on lake levels, capital improvement planning and regional facilities.

Tour/Workshop – April 1, 2005: Clark, Lincoln and White Pine Counties Groundwater Development Project tour and workshop. Residents of rural communities discuss their perspectives on the IWPAC process and in-state resource development activities with committee members. Informational displays cover topics such as IWPAC process, Nevada water law, environmental laws and regulations (including the National Environmental Policy Act), in-state resource projects and water conservation.

Tour/Workshop – April 2, 2005: Clark, Lincoln and White Pine Counties Groundwater Development Project tour and workshop. Residents of rural communities discuss their perspectives on the IWPAC process and in-state resource development activities with committee members. Informational displays cover topics such as IWPAC process, Nevada water law, environmental laws and regulations (including the National Environmental Policy Act), in-state resource projects and water conservation.

APPENDIX C

IWP Resource Options

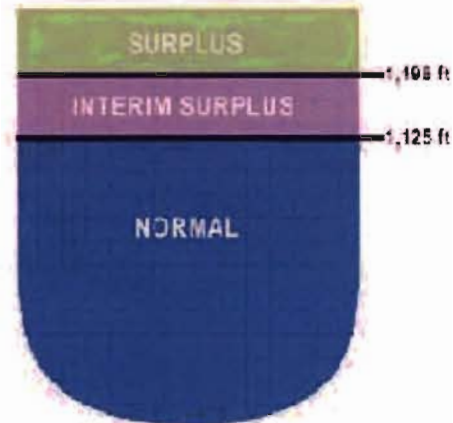


Interim Surplus



Option Overview

- Through 2016, guidelines allow California, Arizona, and Nevada to take more than their respective basic apportionments when Lake Mead level is above 1,125 feet
- Lake levels are projected each year in the "Annual Operating Plan for the Colorado River Reservoirs"
- SNWA obtains return-flow credits for this resource
- SNWA plans to fully utilize this resource when available to reduce its use of other resources



LAKE MEAD

Estimated Yield

- Unknown, dependent on lake level

Implementation Issues

- Interim Surplus Guidelines are only in effect through 2016
- Because of the extended drought in the Colorado River Basin, interim surplus is not expected to be available in the near future

Estimated Cost

- O&M Cost ~ \$150 / AFY when available
- Unit Cost ~ \$150 / AFY when available

Arizona Water Bank (Transfers/Exchanges)



Option Overview

- Nevada pays Arizona to store water in Arizona's water bank
- When Nevada requests water, Arizona will use stored water from its bank and leave a like amount of its Colorado River water in Lake Mead for Nevada
- Nevada will divert this Colorado River water from existing facilities at Lake Mead
- SNWA Agreement guarantees 1.25 million AF (2.125 million AF with return-flow credits)



Estimated Yield w/ Return-flow credits

- Up to 34,000 AFY in 2007-2008
- Up to 51,000 AFY in 2009-2010
- Up to 68,000 AFY in 2011 and thereafter, not to exceed 2.125 million AF

Implementation Issues

- Water available starting in 2007
- Agreement expires in 2060 or when all banked water is recovered
- Agreement approved by all parties
- Environmental compliance complete
- Regulations in place for full delivery of supply

Estimated Cost

- Project Cost ~ \$280 million
 - O&M Cost ~ \$180 / AFY*
 - Unit Cost ~ \$467 / AFY
- * Includes recovery charge of ~ \$50 / AF*

Seawater Desalination (Transfers/Exchanges)



Option Overview

- Nevada pays California all costs to desalt seawater and distribute supply to California customers
- California would leave a like amount of its Colorado River water in Lake Mead for Nevada
- Nevada would divert this Colorado River water from existing facilities at Lake Mead
- SNWA would obtain return-flow credits for this resource



Implementation Issues

- Timeframe for development is unknown
 - no large-scale plants in advance planning or design stages in California
- California's growing needs for additional urban water supply
- Limited suitable sites - co-locating with existing/planned power generation or industrial facilities is key
- Largest facility currently operating in U.S. is only 25 MGD
- Public opposition in coastal communities
- Environmental compliance and permitting - very difficult for developed sites and thought almost impossible for undeveloped sites
- Interstate agreement and federal regulations required

Estimated Yield

- Unknown
- California projects desalination supply of only 187,000 AFY by 2030

Estimated Cost

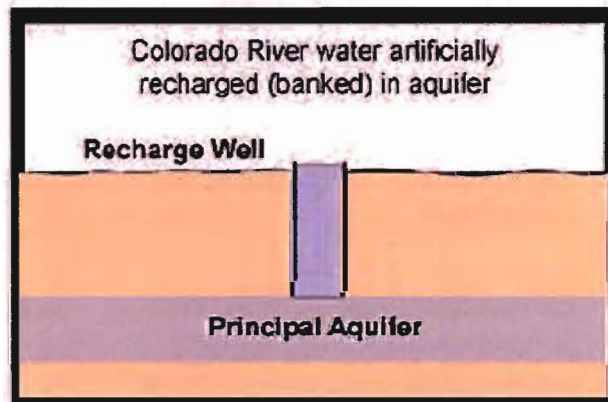
- California costs ~ \$800 - \$2,000 / AFY based on co-location with existing power plants and minimal distribution facilities
- Cost of water to SNWA unknown

Southern Nevada Water Bank



Option Overview

- Unused and/or surplus Colorado River water is treated and recharged into the groundwater aquifer in the Las Vegas Valley
- Developed for use in emergencies or as a bridge to future resources
- May be used to meet obligation to supply Mohave Generating Station
- SNWA obtains return-flow credits for this resource



Estimated Yield

- Up to 30,000 AFY, not to exceed amount in storage (51,000 AFY with return-flow credits)
- 290,000 AF currently in storage (493,000 AF with return-flow credits)

Implementation Issues

- All permits are in place
- Water is stored and available, but requires annual approval by State Engineer to withdraw
- Limited quantity that may be withdrawn annually up to total amount stored
- Additional water can be stored when available

Estimated Cost

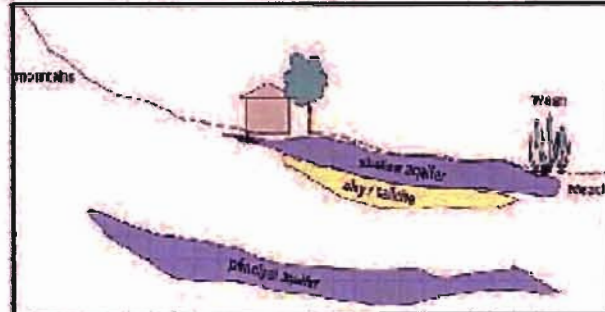
- Unit Cost ~ \$150 / AFY

Las Vegas Valley Shallow Aquifer



Option Overview

- Develop poor quality groundwater resulting from over-irrigation of landscaping
- Extraction through shallow wells located primarily in central and southeastern areas of Las Vegas Valley
- Reverse osmosis treatment with brine disposal
- SNWA would obtain return-flow credits for this resource



Estimated Yield

- ~ 20,000 AFY with return-flow credits

Implementation Issues

- Yield uncertain
- Facilities would need to be relocated frequently as resource is depleted
- Supply could diminish over time with reduced over-irrigation of landscaping
- Availability and high cost of land for facilities and brine disposal
- State Engineer permits for wells and water rights
- Method for obtaining return-flow credit would need to be established

Estimated Cost

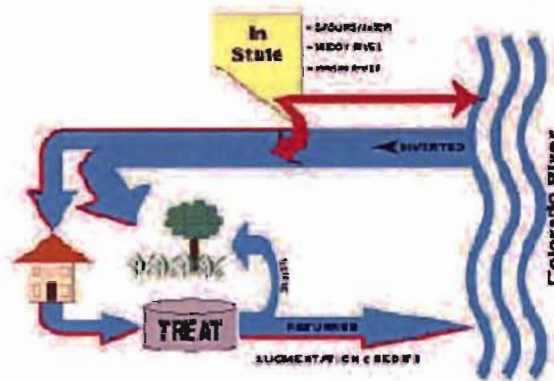
- ~ \$2,000 / AFY with relocation of facilities every 10 years
- ~ \$2,900 / AFY with relocation of facilities every 5 years



Augmentation Credits

Option Overview

- Obtain credits for augmenting the Colorado River with non-Colorado River resources
- Augmentation credits would allow additional diversions from Lake Mead through existing facilities
- Augmentation credits would increase yield of non-Colorado River resources by ~ 70% with full consumptive use
- Significantly reduces the unit cost of developing non-Colorado River resources



Estimated Yield

- Variable:
For each acre-foot of water supply from non-Colorado River resources, SNWA would be able to divert approximately 70% additional supply from Lake Mead

Implementation Issues

- Approval of augmentation credits
- Concurrence of other Colorado River basin states
- If augmentation credits are not available, Southern Nevada will need to pursue additional wastewater reuse at higher cost

Estimated Cost

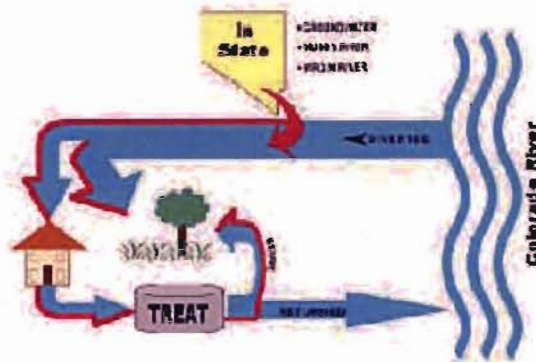
- O&M Cost ~ \$150 / AFY
- Unit Cost - \$150 / AFY



Wastewater Reuse

Option Overview

- Use of treated wastewater for uses that do not require potable quality supplies. For example:
 - Irrigation of landscaped areas (for example, golf courses, parks, common areas)
 - Cooling water for industrial processes or in power generation
- Distribution from existing central wastewater treatment facilities or from new "satellite" facilities



Implementation Issues

- USBR accounting procedures must be revised so that all wastewater reuse demand can be met by non-Colorado River supplies
- If augmentation credits are not available, projected wastewater reuse may not be enough to fully utilize all wastewater
- Additional reuse will require more extensive wastewater distribution facilities to serve smaller users and will be more costly
- Management of salinity (salt) levels of treated wastewater caused primarily by water softeners

Estimated Yield

- Increase from ~ 22,000 AFY at present to ~ 44,000 AFY in 2035

Estimated Cost

- Unit Cost ~ \$1,500 / AFY
- Based on capital and O&M costs of existing satellite facilities



Pre-Compact Water Rights

Option Overview

- Virgin and Muddy Rivers pre-Compact water rights are those that were in use prior to the 1922 Colorado River Compact
- Conveyance of Virgin and Muddy Rivers pre-Compact water rights through Lake Mead
- Diversion at existing facilities at Lake Mead
- About 35,000 acre-feet available



Implementation Issues

- Availability of additional pre-Compact water rights for acquisition
- Cost to acquire water rights
- Approval of augmentation credits
- Viewed by some as not consistent with existing law

Estimated Yield

- Without Augmentation ~ 20,000 AFY
- With Augmentation ~ 34,000 AFY

Estimated Cost

- Project Cost ~ \$40 million
- O&M Cost ~ \$150 / AFY
- Unit Cost
 - ~ \$288 / AFY without Augmentation
 - ~ \$231 / AFY with Augmentation

Virgin River - Lake Conveyance



Option Overview

- Conveyance of 1994 SNWA Virgin River water rights through Lake Mead
- Diversion at existing facilities at Lake Mead

Implementation Issues

- Approval of river/lake conveyance at federal and interstate levels
- Viewed by many as not consistent with existing law
- Amendment of state water right to change point of diversion as allowed by State law
- Upstream water development could reduce available yield; interstate compact needed to assure supply
- Variable yield based on historical river hydrology, 40,000 AFY to 190,000 AFY



Estimated Yield

- Without Augmentation 40,000 AFY to 190,000 AFY (variable flows)
- With Augmentation 68,000 AFY to 323,000 AFY

Estimated Cost

- Project Cost - Unknown
- O&M Cost ~\$150 / AFY
- Unit Cost - Unknown

Virgin River - Surface Diversion



Option Overview

- Divert ~ 71,000 AFY of 1994 SNWA Virgin River water rights to develop ~ 60,000 AFY after losses and brine disposal
- In-channel diversion dam (~ 10 feet high)
- Off-channel reservoir at Halfway Wash (~ 1,100 acres)
- Off-channel earthen dam (~ 200 feet high)
- Delivery of treated water (year-round) to northeast Las Vegas via 63 mile pipeline
- Reverse osmosis treatment w/ brine disposal ponds



Implementation Issues

- Earliest development 2012
- Site geology at Halfway Wash
- Treatment and brine disposal (disposal pond footprint ~ 1,200 acres)
- Environmental compliance
- Current reverse osmosis treatment technology may be insufficient
- Approval of augmentation credits

Estimated Yield

- Without Augmentation ~ 60,000 AFY
- With Augmentation ~ 102,000 AFY

Estimated Cost

- Project Cost ~ \$1.13 billion
- O&M Cost ~ \$743 / AFY
- Unit Cost
 - ~ \$2,039 / AFY without Augmentation
 - ~ \$1,261 / AFY with Augmentation

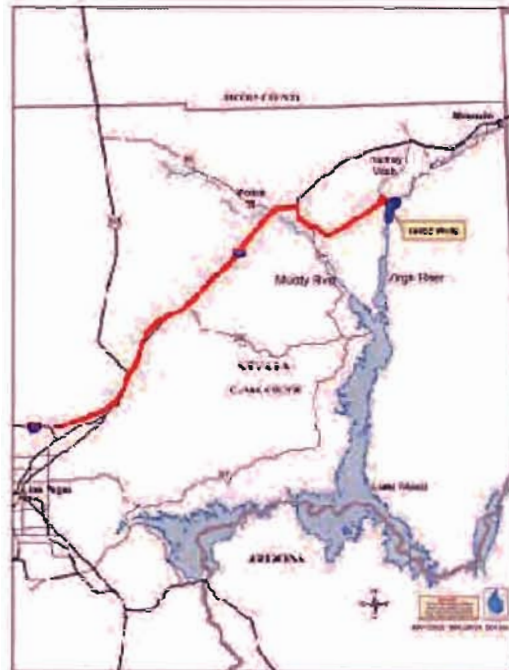
- Upper Basin concerns

Virgin River - Radial Well Diversion



Option Overview

- Divert ~ 30,000 AFY of 1994 SNWA Virgin River water rights to develop ~ 28,000 AFY after losses and brine disposal
- Diversion at Halfway Wash through radial wells
- Wells located in floodplain near Halfway Wash
- 63 miles of pipeline, 4 pumping stations
- Reverse osmosis treatment w/ brine disposal ponds
- Delivery of treated water (Oct. - May) to northeast Las Vegas



Implementation Issues

- Earliest development 2012
- Actual yield of radial wells
- Treatment and brine disposal (disposal pond footprint ~ 500 acres)
- Environmental compliance
- Current reverse osmosis treatment technology may be insufficient
- Approval of augmentation credits

Estimated Yield

- Without Augmentation ~ 28,000 AFY
- With Augmentation ~ 47,600 AFY

Estimated Cost

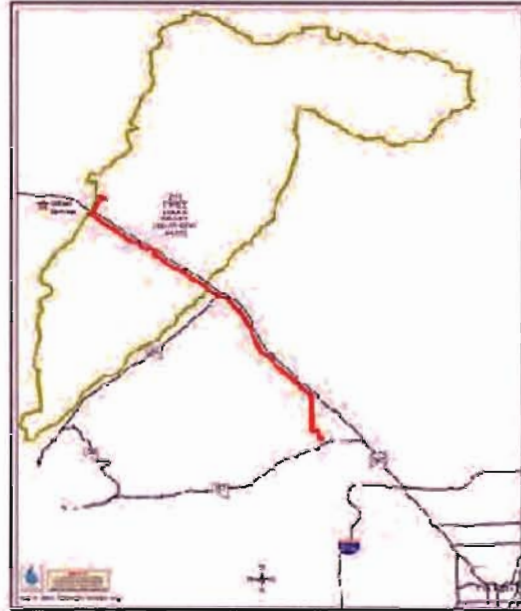
- Project Cost ~ \$ 613 million
- O&M Cost ~ \$ 698 / AFY
- Unit Cost
 - ~ \$ 2,203 / AFY w/out Augmentation
 - ~ \$ 1,358 / AFY with Augmentation

IN-STATE WATER RESOURCES - GROUNDWATER OPTIONS
Three Lakes & Tikaboo South Valleys - Existing Rights



Option Overview

- Groundwater pumped from 9 wells
- Disinfection treatment facility
- Approximately 25 miles of pipeline to northwest Las Vegas



Implementation Issues

- Earliest development 2008
- Approval of water rights change applications
- Environmental compliance
- Approval for augmentation credits

Estimated Yield

- Without Augmentation ~ 8,000 AFY
- With Augmentation ~ 13,600 AFY

Estimated Cost

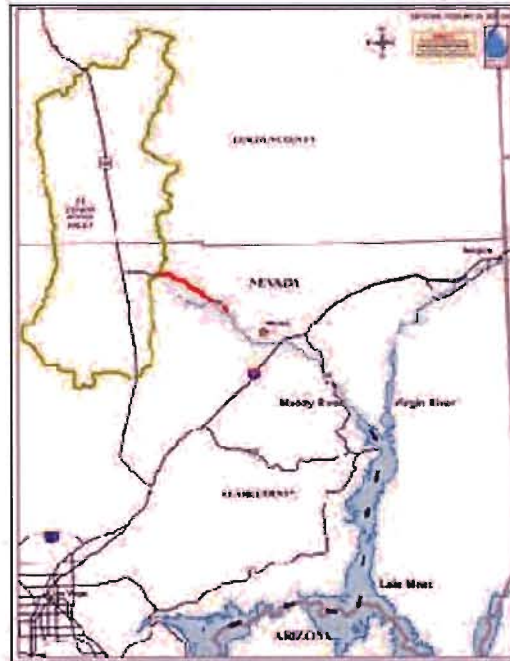
- Project Cost ~ \$55 million
- O&M Cost ~ \$80 / AFY
- Unit Cost
 - ~ \$550 / AFY w/out Augmentation
 - ~ \$385 / AFY w/ Augmentation

Coyote Springs Valley - Existing Rights



Option Overview

- 9,000 AFY of existing rights
- Approximately 16 miles of pipeline from Well MX 5 to Muddy River
- River conveyance to Lake Mead
- Diversion through existing facilities at Lake Mead



Implementation Issues

- Design and environmental compliance near completion
- NPDES discharge permit required
- Arsenic treatment required for Moapa Valley Water District potable use
- Approval for augmentation credits

Estimated Yield

- Without Augmentation ~ 9,000 AFY
- With Augmentation ~ 15,300 AFY

Estimated Cost

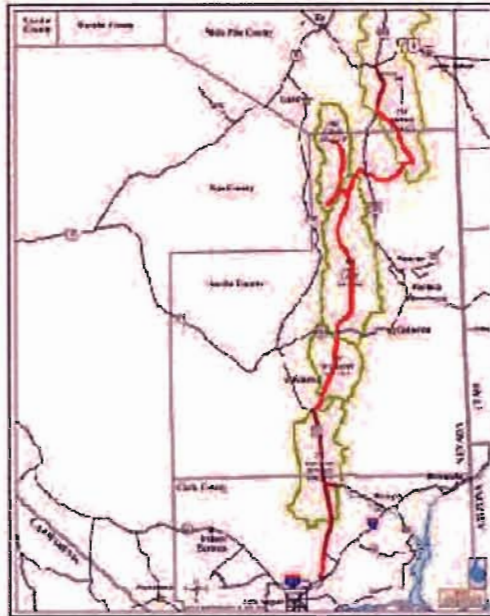
- Project Cost ~ \$35 million
- O&M Cost ~ \$214 / AFY
- Unit Cost
 - ~ \$481 / AFY w/out Augmentation
 - ~ \$345 / AFY w/Augmentation



Five Basin Approach

Option Overview

- Groundwater pumped from 5 basins
- Approximately 375 miles of pipeline with 3 pumping stations
- Delivery to northeast Las Vegas
- ~ 200 miles of power line
- Disinfection treatment only - no arsenic treatment anticipated because of blending



Implementation Issues

- Earliest development 2015
- Approval of water rights
- Community of origin concerns
- Environmental compliance
- Approval of augmentation credits

Estimated Yield

- Without Augmentation ~ 100,000 AFY
- With Augmentation ~ 170,000 AFY
- Withdrawal quantity being evaluated in NEPA process for Clark, Lincoln & White Pine Counties Groundwater Development Project ~ 180,000 AFY

Estimated Cost

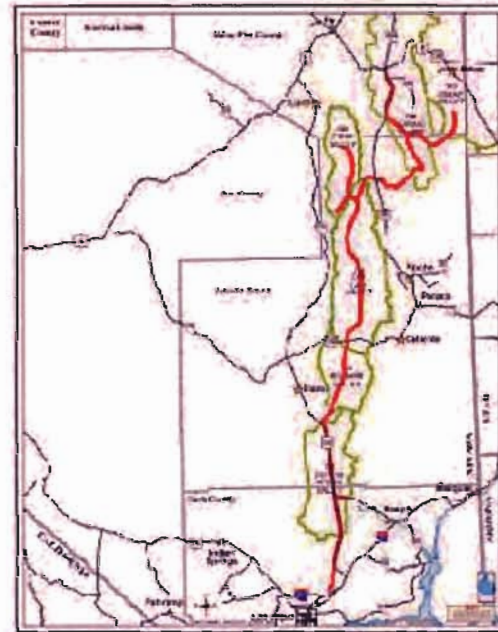
- Project Cost ~ \$1.787 billion
- O&M Cost ~ \$91 / AFY
- Unit Cost
 - ~ \$1,320 / AFY without Augmentation
 - ~ \$838 / AFY with Augmentation



Six Basin Approach

Option Overview

- Groundwater pumped from 6 basins
- Approximately 420 miles of pipeline with 4 pumping stations
- Delivery to northeast Las Vegas
- ~ 200 miles of power line
- Disinfection treatment only - no arsenic treatment anticipated because of blending



Implementation Issues

- Earliest development 2015
- Approval of water rights
- Community of origin concerns
- Environmental compliance
- Approval of augmentation credits

Estimated Yield

- Without Augmentation ~ 125,000 AFY
- With Augmentation ~ 212,500 AFY
- Withdrawal quantity being evaluated in NEPA process for Clark, Lincoln & White Pine Counties Groundwater Development Project ~ 180,000 AFY

Estimated Cost

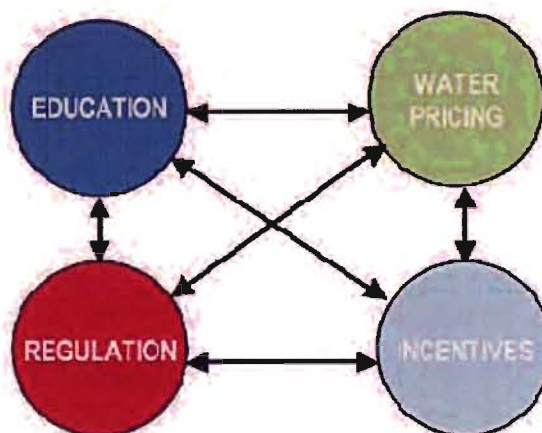
- Project Cost ~ \$1.952 billion
- O&M Cost ~ \$89 / AFY
- Unit Cost
 - ~ \$1,163 / AFY without Augmentation
 - ~ \$746 / AFY with Augmentation

Additional Water Conservation



Option Overview

- Additional reductions in per capita water demand beyond 255 GPCD in 2010
- Emphasis on continued reduction in consumptive water demand (for example, landscape irrigation)
- Would require continuation of current policies and programs plus additional measures, such as:
 - More aggressive conservation pricing?
 - Greater incentives?
 - Additional regulation and enforcement?
- Additional reductions may also occur "passively" from new technology, increasing urban density, etc..



Implementation Issues

- Timing and amounts are unpredictable
- Risk of over-estimating conservation
 - Demand could exceed available supply:
 - Resources unavailable
 - Infrastructure inadequate
- Demand hardening:
 - Over time reduces ability to manage demand
 - Increases risk of shortage in future droughts

Estimated Yield

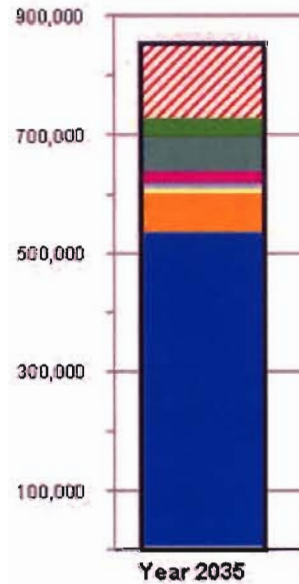
- Unknown
- Based on projected population in 2035, a 1.0 GPCD decrease in water use reduces the needed water supply by approximately 4,000 AFY

Estimated Cost

- Unknown

SCENARIO OPTION 1
SCENARIO OVERVIEW

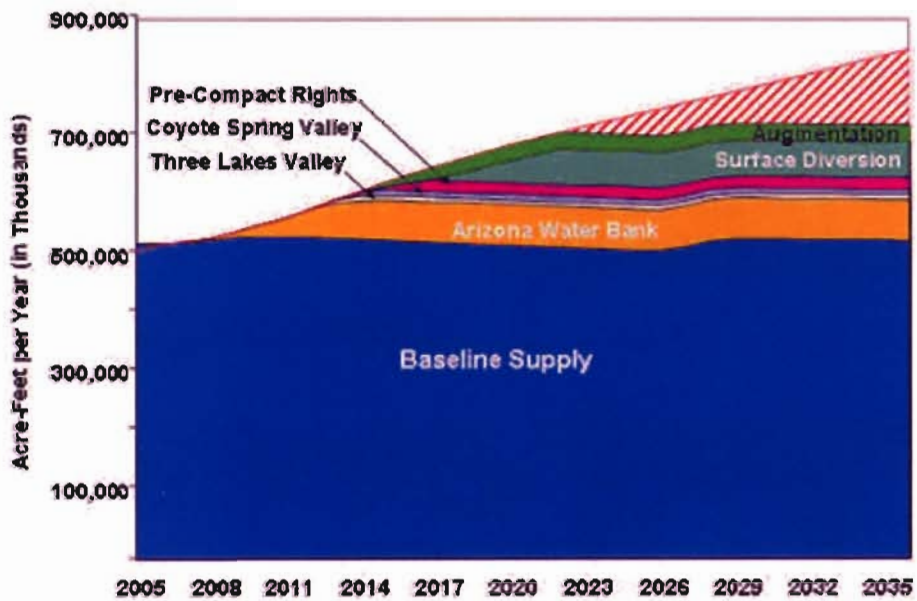
Resource Option	Yield (AFY)
Arizona Water Bank	68,000
Three Lakes Valley GW	8,000
Coyote Spring Valley GW	9,000
Pre-Compact Rights	20,000
Virgin – Surface Diversion	60,000
5 Basin Approach	N/A
6 Basin Approach	N/A
Augmentation Credits (partial*)	26,000
Additional Conservation	N/A
Total	191,000



129,000 AFY Deficit in 2035

* Augmentation credits not applied to Virgin River surface diversion (1994 water rights)

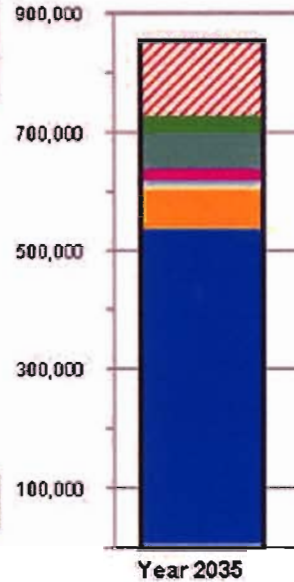
SCENARIO OPTION 1
SCENARIO TIMELINE



SCENARIO OPTION 1

SCENARIO ESTIMATED COST

Resource Option	Capital Cost (\$ million)	Annualized Cost (\$/AF)		
		Capital	O&M	Total
Arizona Water Bank	\$ 280	\$ 282	\$180	
Three Lakes Valley Existing	55	471	80	
Coyote Spring Valley Existing	35	267	214	
Pre-Compact Rights	40	138	150	
Virgin River – Surface Diversion	1,130	1,296	743	
Augmentation Credits		0	150	
Total	1,539	549	345	
Total w/ Contingency	\$1,832	\$654	\$345	\$999

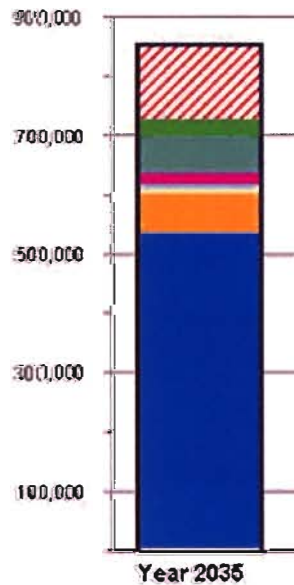


Total O&M cost, including existing supply = \$213/AF

SCENARIO OPTION 1

SCENARIO IMPLEMENTATION ISSUES

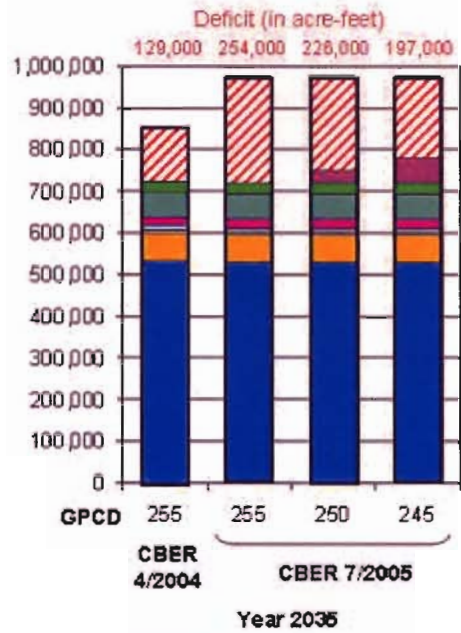
- Availability of additional pre-Compact water rights for acquisition
- Cost to acquire pre-Compact water rights
- **Treatment** and brine disposal for **Virgin River** - Surface Diversion
- **Earliest development** for Virgin River – Surface Diversion is 2012
- Environmental compliance
- Approval of augmentation credits



SCENARIO OPTION 1

2005 POPULATION PROJECTION

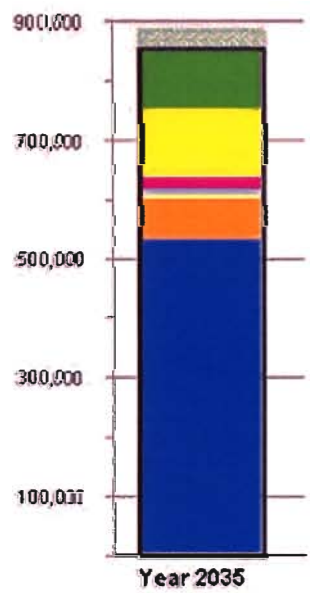
Resource Option	Yield (AFY)
Arizona Water Bank	68,000
Three Lakes Valley GW	8,000
Coyote Spring Valley GW	9,000
Pre-Compact Rights	20,000
Virgin – Surface Diversion	60,000
5 Basin Approach	N/A
6 Basin Approach	N/A
Augmentation Credits (partial*)	26,000
Additional Conservation	Varies
Total	191,000



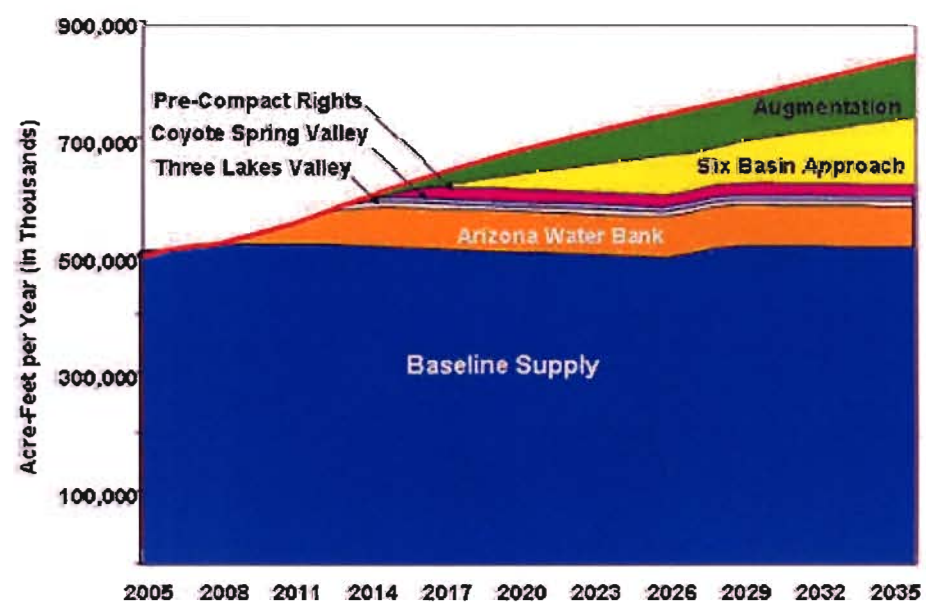
* Augmentation credits not applied to Virgin River surface diversion (1994 water rights)

SCENARIO OPTION 2
SCENARIO OVERVIEW

Resource Option	Yield (AFY)
Arizona Water Bank	68,000
Three Lakes Valley GW	8,000
Coyote Spring Valley GVV	9,000
Pre-Compact Rights	20,000
Virgin – Surface Diversion	N/A
5 Basin Approach	N/A
6 Basin Approach	125,000
Augmentation Credits (full)	113,000
Additional Conservation	N/A
Total	343,000



SCENARIO OPTION 2
SCENARIO TIMELINE

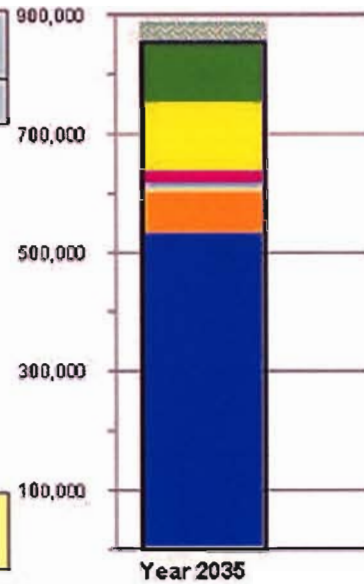


SCENARIO OPTION 2

2

SCENARIO ESTIMATED COST

Resource Option	Capital Cost (\$ million)	Annualized Cost (\$/AF)		
		Capital	O&M	Total
Arizona Water Bank	\$ 280	\$ 282	\$ 180	
Three Lakes Valley Existing	55	471	80	
Coyote Spring Valley Existing	35	267	214	
Pre-Compact Rights	40	138	150	
6 Basin Approach	1,952	1,074	89	
Augmentation Credits		0	150	
Total	2,361	493	133	
Total w/ Contingency	\$2,851	\$595	\$133	\$728



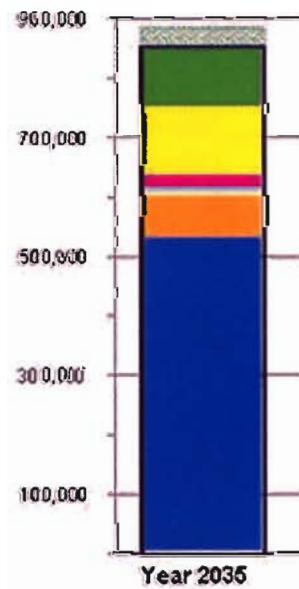
Total O&M cost, including existing supply = \$153/AF

SCENARIO OPTION 2

2

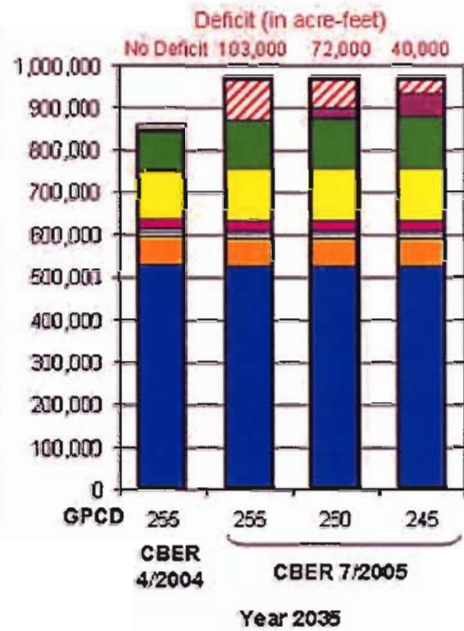
SCENARIO IMPLEMENTATION ISSUES

- Availability of additional pre-Compact water rights for acquisition
- Cost to acquire pre-Compact water rights
- Approval of water rights
- Earliest development for 6 Basin Approach is 2015
- Community of origin concerns
- Environmental compliance
- Approval of augmentation credits



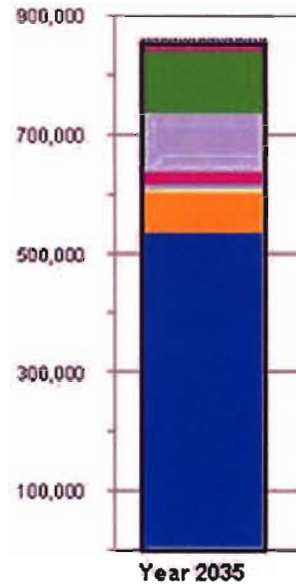
INTEGRATED WATER PLANNING
2005 POPULATION PROJECTION

Resource Option	Yield (AFY)
Arizona Water Bank	68,000
Three Lakes Valley GW	8,000
Coyote Spring Valley GW	9,000
Pre-Compact Rights	20,000
Virgin – Surface Diversion	N/A
5 Basin Approach	N/A
6 Basin Approach	125,000
Augmentation Credits (full)	113,000
Additional Conservation	Varies
Total	343,000



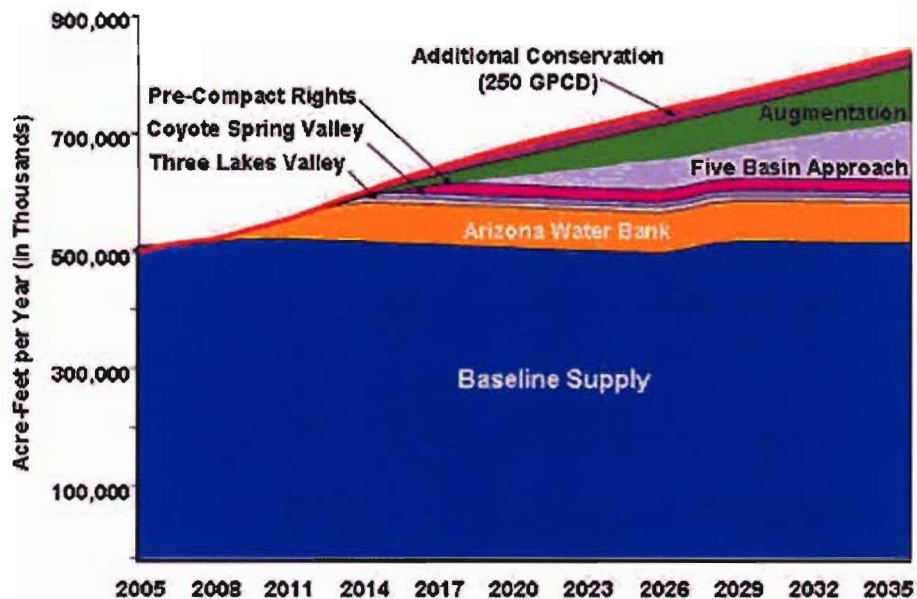
SCENARIO OVERVIEW

Resource Option	Yield (AFY)
Arizona Water Bank	68,000
Three Lakes Valley GW	8,000
Coyote Spring Valley GW	9,000
Pre-Compact Rights	20,000
Virgin – Surface Diversion	N/A
5 Basin Approach	100,000
6 Basin Approach	N/A
Augmentation Credits (full)	96,000
Additional Conservation*	20,000
Total	321,000



* 250 GPCD by 2020

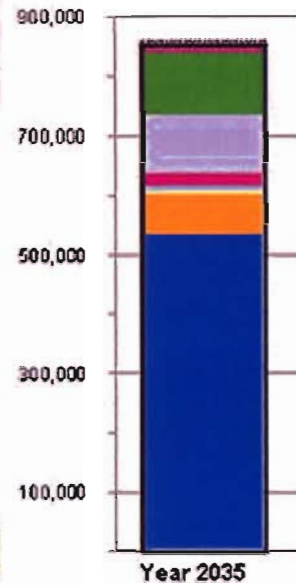
SCENARIO TIMELINE



SCENARIO OPTION 3

SCENARIO ESTIMATED COST

Resource Option	Capital Cost (\$ million)	Annualized Cost (\$/AF)		
		Capital	O&M	Total
Arizona Water Bank	\$ 280	\$ 282	\$ 180	
Three Lakes Valley Existing	55	471	80	
Coyote Spring Valley Existing	35	267	214	
Pre-Compact Rights	40	138	150	
5 Basin Approach	1,787	1,230	91	
Augmentation Credits		0	150	
Additional Conservation		?	?	
Total	2,196	496	133	
Total w/ Contingency	\$2,647	\$598	\$133	\$731

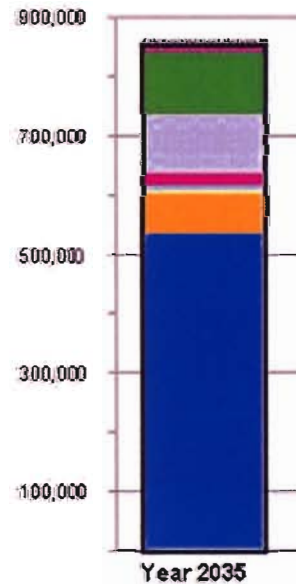


Total O&M cost, including existing supply = \$144/AF
(Does not include costs for additional conservation.)

SCENARIO OPTION 3

SCENARIO IMPLEMENTATION ISSUES

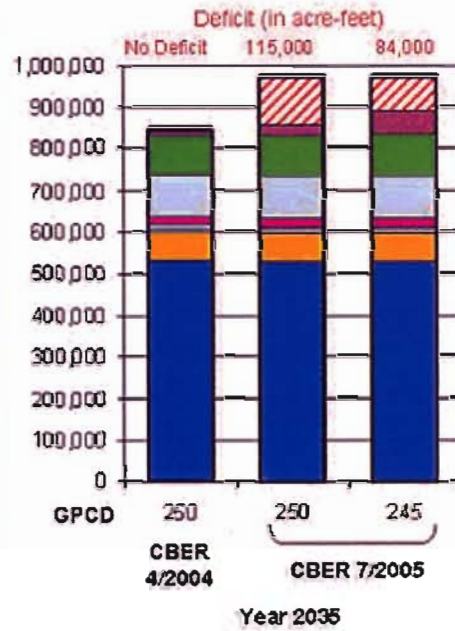
- Availability of additional pre-Compact water rights for acquisition
- Cost to acquire pre-Compact water rights
- Approval of water rights
- Earliest development for 5 Basin Approach is 2015
- Community of origin concerns
- Environmental compliance
- Approval of augmentation credits
- Uncertainty regarding the yield and cost of additional conservation



INTEGRATED WATER PLANNING

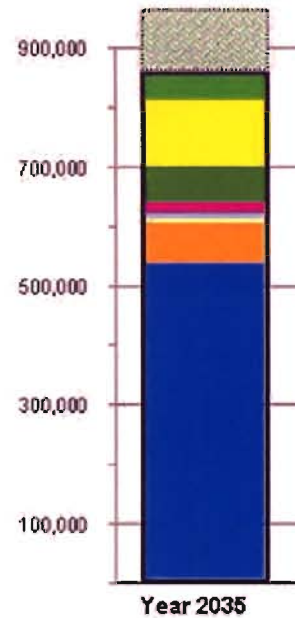
2005 POPULATION PROJECTION

Resource Option	Yield (AFY)
Arizona Water Bank	68,000
Three Lakes Valley GW	8,000
Coyote Spring Valley GW	9,000
Pre-Compact Rights	20,000
Virgin – Surface Diversion	N/A
5 Basin Approach	100,000
6 Basin Approach	N/A
Augmentation Credits (full)	96,000
Additional Conservation	Varies
Total	321,000



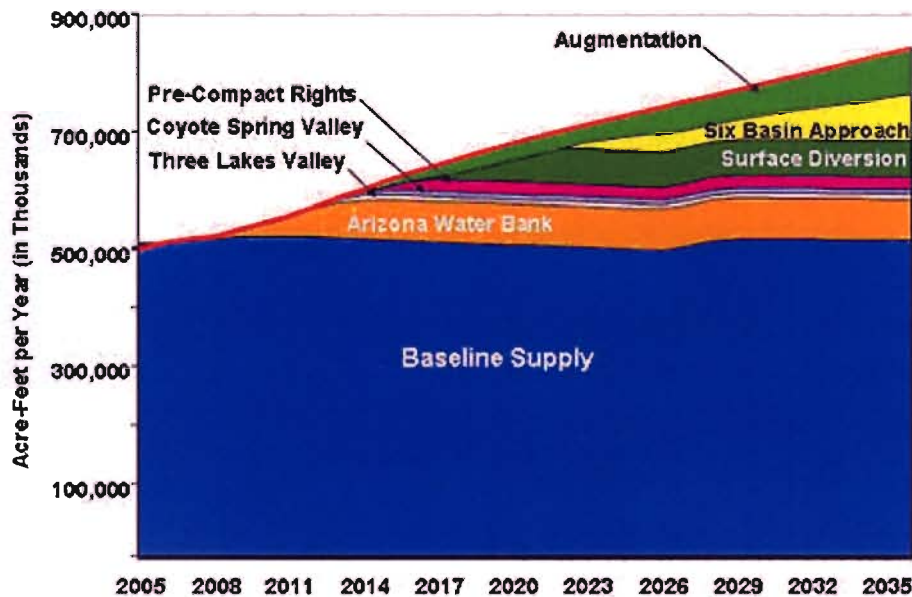
SCENARIO OPTION 4
SCENARIO OVERVIEW

Resource Option	Yield (AFY)
Arizona Water Bank	68,000
Three Lakes Valley GW	8,000
Coyote Spring Valley GW	9,000
Pre-Compact Rights	20,000
Virgin – Surface Diversion	60,000
5 Basin Approach	N/A
6 Basin Approach	125,000
Augmentation Credits (partial*)	113,000
Additional Conservation	N/A
Total	403,000



* Augmentation credits not applied to Virgin River surface diversion (1994 water rights)

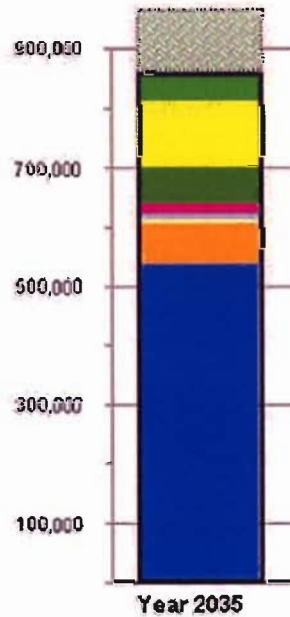
SCENARIO OPTION 4
SCENARIO TIMELINE



SCENARIO OPTION 4

SCENARIO ESTIMATED COST

Resource Option	Capital Cost (\$ million)	Annualized Cost (\$/AF)		
		Capital	O&M	Total
Arizona Water Bank	\$ 280	\$ 282	\$ 180	
Three Lakes Valley Existing	55	471	80	
Coyote Spring Valley Existing	35	267	214	
Pre-compact Rights	40	138	150	
Surface Diversion	1130	1296	743	
6 Basin Approach	1,952	1,074	89	
Augmentation Credits		0	150	
Total	3491	657	232	
Total w/ Contingency	\$4,252	\$800	\$232	\$1,032

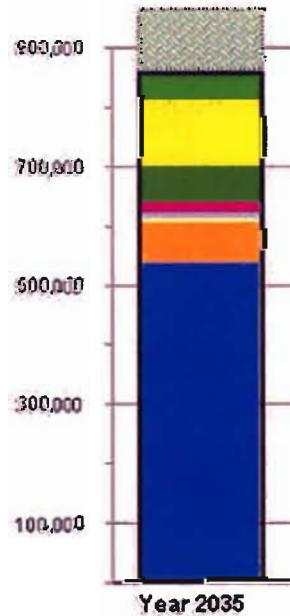


Total O&M cost, including existing supply = \$183/AF

SCENARIO OPTION 4

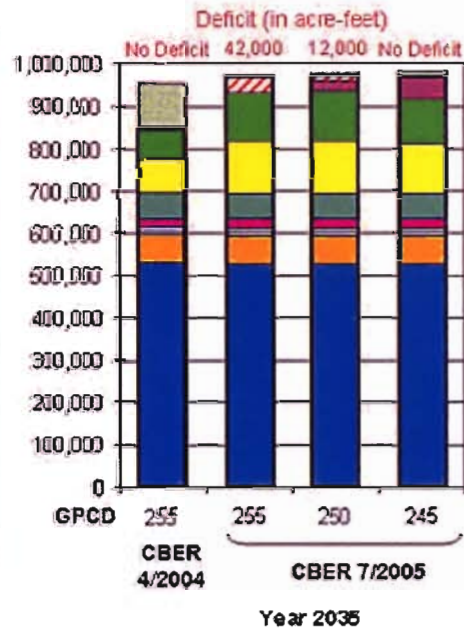
SCENARIO IMPLEMENTATION ISSUES

- Availability of additional pre-Compact water rights for acquisition
- Cost to acquire pre-Compact rights
- Treatment and brine disposal for Virgin River – Surface Diversion
- Earliest development for 6 Basin Approach is 2015
- Earliest development for Virgin River – Surface Diversion is 2012
- Approval of water rights
- Community of origin concerns
- Environmental compliance
- Approval of augmentation credits



INTEGRATED WATER PLANNING
2005 POPULATION PROJECTION

Resource Option	Yield (AFY)
Arizona Water Bank	68,000
Three Lakes Valley GW'	8,000
Coyote Spring Valley GW	9,000
Pre-Compact Rights	20,000
Virgin – Surface Diversion	60,000
5 Basin Approach	N/A
6 Basin Approach	125,000
Augmentation Credits (partial*)	113,000
Additional Conservation	Varies
Total	403,000



* Augmentation credits not applied to Virgin River surface diversion (1994 water rights)

APPENDIX E

Evaluation Criteria



Early in the IWPAC process, members were asked to identify concepts or “evaluation criteria” that could be used to help guide the development of in-state resources. The following reflects the opinions of individual members rather than the committee as a whole.

- **Cost Per Acre-Foot**
- **General Feasibility**
 - Legal
 - Regulatory
 - Political
- **Potential for Drought Protection**
 - Southern Nevada
 - County of origin
- **Potential for Environmental Protection**
 - Resource sustainability
 - Minimize local source impacts
 - Minimize impacts on aquatic/endangered species locally and down gradient
 - Make efficient use of water
 - Maximize return-flow or augmentation credits
- **Potential for Economic Benefits**
 - Provide sufficient water to meet projected future demand in Southern Nevada
 - Ensure sufficient water to meet future demand in county of origin
 - Minimize adverse economic impacts to Southern Nevada
 - Minimize adverse economic impacts to county of origin
 - Minimize adverse economic impacts to State of Nevada
 - Minimize energy needs/costs
 - Maximize use of local workforce
 - Minimize rural/urban lifestyle impacts
- **Potential for Increased System Reliability**
 - Southern Nevada
 - County of origin
- **Scheduling & Development Flexibility**
 - Ability to bring on-line in a timely fashion
 - Ability to phase and not over-commit
 - Ability to learn and adapt based on new data
- **Water Quality**
 - Minimize need for additional water treatment
- **Other**
 - Credibility of projections
 - Feasibility of financing plan

APPENDIX F

Member Perspectives

During the IW PAC process and development of recommendations, several committee members shared written materials that expressed their personal views on specific issues. The following reflects the opinions of individual members rather than the committee as a whole. To the extent possible, these views have been captured in the narrative of this report.



TO: IWPAC

From: Dean Baker, Member

Date: July 25, 2005

RE: Recommendation to SNWA IWPAC Committee to insert the following into The IWPAC Recommendations Report, Resource Development, #1- Pursue development of all resource options...

If SNWA decides to pursue the Basin 5 & 6 Options, SNWA pays for an independent contractor (Independent of SNWA, and administered by an oversight committee) to manage a group whose objective is to:

Inventory all waters in target basins in WPC and Western UT Snake Valley before proceeding with any tasks in their groundwater pipeline project. This should include all recorded water rights, all vested water rights, all historical and current water uses, all springs and seeps whether on private property or government lands, all phreatophyte areas, all wet meadows, and include a groundwater monitoring system.

This would contribute to SNWA's statement, "...to serve rural communities and existing water rights holders (and) maintain the hydrologic needs of the environment..." and not adversely affect existing rights and uses for rural people and the natural environment: Before proceeding, there should be adequate hydrological studies conducted before test pumping to see that adverse effects are avoided and all rights protected.

The stakeholders' oversight committee would include: representatives from WPC, NV, Millard County UT, Federal and State agencies including NV and UT BLM, NV and UT USGS, and a chief hydrologist from SNWA. A management committee of 3 or more is comprised of an SNWA representative and stakeholder representatives of this group.

The Campbell Company

Public Affairs Consulting

Robert E. Campbell

August 18, 2005

Integrated Water Planning Advisory Committee
Southern Nevada Water Authority
1001 So. Valley View Blvd.
Las Vegas, NV 89153

Dear committee members,

As the Integrated Water Planning Advisory Committee process nears a close and the committee finalizes its recommendations, I wanted to share some final thoughts, particularly after reviewing the letter from Mr. Baker that was sent to the committee late last week.

As I've said before, I agree that many of the concerns expressed by rural Nevada are valid and I believe they are honest in raising them -- but the issue at hand is whether these concerns can be adequately addressed and a "win / win" situation can be created for both the urban and the rural areas of Nevada. I believe that it is possible, and I believe it is clearly the intent and commitment of this committee. We've made several recommendations to help ensure this happens -- we've agreed that conservation needs to be a priority for southern Nevada; we've said we need to continue to pursue options on the Colorado River; we've made a recommendation to maximize all available supplies through reuse options such as augmentation credits; and, we've established evaluation criteria that include protections for the environment, existing water right users and the economy of rural Nevada.

I am confident that the members of this committee will agree that we have listened closely to rural Nevada, that their concerns have been met with sensitivity and understanding. The institutions that exist today provide the balance necessary to ensure the appropriate protections are in place. The State Engineer is required to be diligent in this respect and will ensure that science and fact guide his decisions -- his office serves as a "check and balance" for interests on both sides of the issue. If Mr. Baker is correct and there are not sufficient water resources available, then he has nothing to worry about. However, if the opposite is true, rural Nevada can at least be assured that their concerns were considered, that facts and science were relied on, and that the approved applications were granted in accordance with law.

With this in mind, I think we must move forward with equal momentum on all of the resources considered by this committee. The water rights permitting and environmental compliance processes should continue as planned. As Mike Strobel with the U.S. Geological Survey noted in an Ely Times article, "Multiple well pumping tests are the best means for gathering hydraulic information about an aquifer." I think this work should begin soon so that all parties can put speculation to rest.

(continued)

330 E. Warm Springs Road • Las Vegas, Nevada 89119
(702) 215-4834 • Fax (702) 215-4838

As we work to finalize our recommendations, I encourage the committee to be mindful of its purpose – to develop recommendations for how to integrate in-state resources into the planning and management activities of southern Nevada. I think all of us recognize that some level of development is necessary to guard southern Nevada against drought and to provide for its future. But even as we recommend this approach, I am confident that our other messages are as equally clear – these activities must be done responsibly and in a way that protects northern Nevada.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert E. Campbell", is written over a horizontal line. The signature is somewhat scribbled and overlaps the line.

Robert E. Campbell, Member
Integrated Water Planning Advisory Committee

Cathay
Consulting Group

Las Vegas
Hong Kong

22 August 2005

IWPAC Committee

Dear Committee Members,

Following are some observations and recommendations regarding our Committee's assignment.

Deja Vu

June 22, 1993 a Senate Committee on Natural Resources was held. As Vice Chairman of SNWA I attended and testified at this meeting.

The primary agenda item was the modification of the Colorado River Commission. SNWA had just been formed. The lengthy transcript contains detailed discussions of water in Nevada... and future water needs.

Historical perspective should be useful as we make our final recommendations. There is not much "new" in our current deliberations. Primarily we see that projections of needs were grossly underestimated. Also there was a sense of urgency and much talk about a "Window of Opportunity". The short fall in projection accuracy has only exacerbated the urgency.

Two solutions were discussed... "In-State" and "Out of State". The committee suggested that a third solution existed. Reduce demand by conservation.

Accusations of a "Water Grab" by SNWA was a point of discussion.

Other interesting and insightful items were discussed at length.

Recommendations

Utilization of Colorado River Water

Assure that Nevada is receiving every drop of water that we are entitled to under existing Compact Law and agreements.

Participate aggressively in negotiations and discussions regarding allocation and use of surpluses on the River.

Obtain full credit for return flow, including run-off water.

Insure that the concept of Augmentation is put into law and that Nevada is given full credit for any water that falls in this category.

Take whatever action is necessary to change the existing law of the river so that Lake Conveyance is permitted.

Maintain good working relations with the other states in the Colorado River Compact.

Additional Allotment From Colorado River

I oppose this being included as a resource component for the solution of our current needs.

First, given the information provided on the In-State resources, and the possibilities of a significant reduction in demand by fine tuning our conservation efforts I believe that we can solve our problems in-state.

Second, additional allotment requires complicated, politically charged, changes in fundamental laws. This could require decades of legal wrangling with an unsure outcome. It is unlikely that such changes, if successful, can be made in a time frame that would contribute to our immediate needs.

Conservation

This is the most easily identified "good faith effort" when it comes to obtaining cooperation from others... whether it be individual citizens, other states, or the federal government.

Pursue aggressive efforts to reduce our daily use of water. The many suggested methods are comprehensive.

Establish a MGD goal.

Engage the public in this goal. Make them aware of the goal. Provide feedback to them on a regular basis, ie, "This month we used "X" MGD. Good job!" Or, "This month we used "Y" MGD... too bad. Let's do better next month".

As we have seen in our recent conservation success the people are great... they will respond when included in the process and given proper information. Trust the people.

Publicly reward those who "do good".

Investigate use of existing satellite technology to identify serious over watering.

Development of In-State Resources

The "window of opportunity" I talked about in the 1993 Senate hears is not as large as it was then. The time of discussions must end.

Pursue the aggressively:

Pre-Compact Water Rights

Virgin River (Selection of option made by technical informaton)

 Lake Conveyance

 Surface Diversion

 Radial Well Diversion

Three Lakes & Tikaboo

Coyote Springs

Five Basin

Six Basin

Comments on Five & Six basin

I restate a conclusion that has been reached a number of times in our meetings.

Without water from at least one of the basins we cannot meet the projected water needs.

Comments in the 1993 hearing about a "water grab" have only been intensified in the ensuing years.

Unfortunately in many such cases there is often more heat than light in the discussions.

As others of the committee have ably suggested the only way we will know is to move forward with the test wells to see if there is or is not water available in these basins.

If there is not it would certainly be imprudent for SNWA to build billions of dollars in infrastructure to pump from an unsustainable resource.

Perhaps SNWA should fund an independent watchdog office to assure that those in the basins are properly protected.

Move forward immediately, with appropriate safeguards, to determine the viability of this resource.

Desalination

This should not be taken off the "big picture" table. However its viability depends on availability in the River and the environmental hurdles in California. I do not feel that it is dependable component for the projected planning period.

TIME TO ACT

We have had enough meetings. Lets move on!

Sincerely,

W. Brent Hardy
Integrated Water Planning Advisory Committee

PUBLIC NOTICE

MOAPA VALLEY WATER DISTRICT SAFEGUARDING COMMUNITY'S WATER SUPPLY

Recent editorials in the Progress have raised many questions about the future of the valley's water supply. Fortunately, as longtime members of this community, the Moapa Valley Water District (MVWD) board and management team have spent the past 15 years actively preparing for future needs and opposes any exportation of water from our valley.

When the Southern Nevada Water Authority (SNWA) came to us in the mid-1990s to announce its intention to purchase stock in the Muddy Valley Irrigation Company (MVIC), we were concerned about how such an acquisition would affect our community's long-term water resource prospects. But rather than immediately oppose the effort—a move that would have been unfair to the people who own MVIC shares and have the prerogative and legitimate right to sell them—we sat down with the SNWA and expressed our concerns.

SNWA's management team was open to our ideas and wanted to work collaboratively. In February 1996, we reached an agreement that limited the amount of water the SNWA could transfer out of Lower Moapa Valley to 5,000 acre-feet per year unless otherwise agreed upon by MVWD. The SNWA also agreed to assist us in securing additional groundwater supplies; proving true to their word, they assigned us 50 percent of their Coyote Spring Valley groundwater applications. As part of our agreements with SNWA, we now have first priority rights to the first 3,750 acre-feet of water rights that may be additionally granted in the Coyote Spring Valley. These potential rights could eventually total 13,500 acre-feet per year, a substantial increase over the approximately 3,500 acre-feet of water this community currently consumes each year. One acre-foot of water is 325,851 gallons, the amount needed to service a single-family residence for one year.

Before permitting this water, the Nevada State Engineer in 2002 required a multi-year pump test to ensure the endangered Moapa dace would not be affected. Our community will be the interim beneficiary of the thousands of acre-feet drawn for the pump test and, through the pipeline being used to convey it, will have long-term access to water infrastructure that could prove critical to our community.

For its part, the MVIC secured an agreement from the SNWA that ensures MVIC's diversions will not be affected by SNWA's potential transfer of water, thereby protecting other Muddy River water rights holders. In 2000, the MVIC and MVWD cooperatively re-negotiated a 1972 agreement that resulted in a more secure source of 2,172 acre-feet per year of water for this community, and an additional stable source of income for MVIC. MVIC and MVWD are currently working together to establish a surface water

treatment plant along the banks of the Bowman reservoir to facilitate the treatment of surface water in the future for our community. The MVWD in past years has purchased as well as bartered with developers for shares of stock in the MVIC. MVWD currently holds approximately 1,074 acre-feet of MVIC stock.

The MVWD has been over the past 10 years developing a water resource that has a potential of providing 7,240 acre-foot per year from its Arrow Canyon wells located in the Warm Springs area of Moapa. SNWA has proven helpful in that effort. As a result of hydrologic studies, the MVWD will be drilling at least three exploratory wells in the region over the next several months. MVWD studies have shown that 75 percent of the water consumed by our customers is used for irrigation purposes. Therefore, MVWD will soon be conducting a study that will look at the feasibility of constructing a pressurized secondary water system that would carry non-potable water sources to customers throughout the lower valley. In one effort toward that goal, we have begun working with the Clark County Water Reclamation District with respect to possible future re-use of non-potable treated effluent from their Overton facility.

Since 2003, the MVWD, MVIC, SNWA, as well as the Nevada State Engineer, Coyote Springs Investment Inc., U.S. Fish & Wildlife Service and the Moapa band of Paiutes have been working toward an agreement that could quantify specific water rights on the Muddy River, resolve more than 80 years of conflict and address environmental issues related to the Moapa dace.

It is understandable for people to be concerned about water exportation from the Muddy River. However, MVWD has improved this community's position for the inevitable long-term transition from agricultural to municipal use of MVIC water, in part by recently adopting its water dedication ordinance for new developments as well as having the cooperative efforts and support of MVIC and SNWA. As the agency responsible for providing this community's drinking water supply, the MVWD will continue to work to ensure Moapa Valley's water resources are protected.

TO: IWPAC Members
FROM: John Hiatt
DATE: August 22, 2005
RE: IWPAC Draft Recommendations

The Draft Recommendations needs to be placed into context with a brief explanation of timelines and priorities, and the long-term prospects for the Colorado River. The essentially linear growth rate of approximately 2% per year over the next 30 years presented as a basis for planning by the SNWA is belied by past history, the present growth rate, and the data presented by Guy Hobbs, who predicts rapid growth in the next few years with an eventual slowdown.

This means that timing of bringing resources on-line is critical. The only real options for the time frame between 2005 and 2012 to 2015 are conservation and obtaining more Colorado River Water via purchase, trade, or negotiations. The major projects proposed will take longer to implement.

A key part of the long-term plan for new water resources for Las Vegas must be sustainability. This means that surface water sources must have priority. Everywhere in the world that groundwater is relied upon as a principle municipal water supply for large cities over drafting of the resource is a problem and cities wind up searching elsewhere for water.

Ultimately all groundwater starts as surface water, and long-term pumping of any significant portion of the annual recharge results in the loss of springs, wetlands, and phreatophytic vegetation. If the Water Authority is sincere in its pledge not to cause environmental harm in Lincoln and White Pine counties then the volume of groundwater which can be removed annually will have to be substantially less than what is proposed.

In the long-term all the residents of the Colorado River Basin and those out of Basin users of Colorado River water must face the fact that the river is an over-allocated limited resource. The sooner we as a society start working on resolving the very difficult issues of how to allocate water between agricultural and municipal uses and whether large scale desert agriculture producing low value crops is a good use of water the better off we will be as a society. The concept of developing "in-state resources" to meet the ever expanding demand for water in the Las Vegas Valley, while attractive from a political standpoint, only delays the day of reckoning for all of us who share the waters of the Colorado River. The big picture of how the river's water is allocated needs a hard look in light of today's realities and what we expect demands to be in the coming decades. Las Vegas, as the large municipality most dependent on the Colorado River is best situated to bring this issue to the public's attention and initiate discussions on the future of water resource allocation in the Colorado River Basin.



IWPAC
Southern Nevada Water Authority
1001 S. Valley View Blvd.
Las Vegas, NV 89153

August 22, 2005

Dear IWPAC Members:

As Chairman of the Water Conservation Coalition, I want to express my thanks to the Integrated Water Planning Advisory Committee for its work over the last year. The committee's discussions about how best to integrate in-state water resources into Southern Nevada's water resource future have been admirable. I am especially pleased that conservation has been a focal point of this group.

Long before the drought began, conservation was a priority in this community. Watering schedules and turf conversions were voluntary measures that residents and businesses took to reduce water use. Water waste violations were issued to water wasters and turf limits were implemented to reduce the amount of new grass planted in Southern Nevada. When the drought struck, Southern Nevadans immediately and drastically reduced water use through one of the most aggressive drought plans in the country. The plan balances restrictions and incentives. Restrictions such as assigned watering schedules and golf course water budgets immediately reduced water use. Long-term reductions are achieved with a ban on turf at new commercial properties and in residential front yards. Further reductions are gained in both the long-term and short-term with the Water Smart Landscapes rebate program, the nation's most successful turf removal program.

Overall, Southern Nevada has managed to reduce water use by approximately 20 billion gallons even at a time when the community grew by nearly 170,000 new residents.

As this committee makes its recommendations, I urge the group to continue their focus on conservation and I invite each of you to participate in the Water Conservation Coalition. In addition, I have asked Peggy Maze Johnson, who has served as a vocal proponent for conservation throughout the committee's tenure, to join the Water Conservation Coalition as Vice Chair. Once again, thank you for your time and commitment.

Sincerely,

William Martin
Chair, Water Conservation Coalition



PO BOX 17173 Las Vegas, Nevada 89114 ♦ (702)796-5662 ♦ www.citizenalert.org

September 23, 2005

Integrated Water Planning Advisory Committee
1001 South Valley View Boulevard
Las Vegas, NV 89153

Dear Committee Members,

I am unable to attend the IWPAC meeting on Monday due to a scheduling conflict that requires me to be in Washington D.C. that day. However, I have reviewed the revised committee report and can support the recommendations as drafted.

I am pleased with the work this committee has accomplished over the last year, particularly as it relates to water conservation. The committee's recommendations convey a strong message to the Southern Nevada Water Authority Board that conservation must be a priority for our community.

Until recently, little attention was given to the fact new residents brought with them values and lifestyles that often defy our desert setting. Most obvious among these, is a penchant for lush green lawns that too often serve only a decorative purpose. This has become a major culprit in our region's high water use.

Pursuing more aggressive conservation by working towards the removal of non-functional turf, eliminating water waste and permanently implementing practical water-saving measures is not only our obligation, but a key to preserving southern Nevada's water future. We must be vigilant in maximizing the use of our existing supplies even as we pursue the development of other necessary resources.

I believe that we as a committee have also been clear that the development of additional resources, whether de-salting the ocean or looking at rural Nevada, must be done in a sustainable manner, and in a way that protects existing users and the environment. During our trip to Ely and Baker and talking with the folks in that area we assured them that we would not be a part of depleting their water sources that would threaten their environment and lifestyles. We are all Nevadans and we must work together.

I have enjoyed the opportunity to serve on this committee with each of you.

Sincerely,

Peggy Maze-Johnson
Executive Director



Southern Nevada Building & Construction Trades Council

Affiliated with the Building & Construction Trades Department — AFL-CIO

1701 WHITNEY MESA DR., STE #101 • HENDERSON, NV 89014 • 702-452-8799, Fax 702-452-9537

September 16, 2005

Integrated Water Planning Advisory Committee
Southern Nevada Water Authority
1001 S. Valley View Blvd.
Las Vegas, NV 89153

Dear Committee Members,

The consensus of the Integrated Water Planning Advisory Committee must be to protect the prosperity of the entire state of Nevada, while also protecting the environment. I firmly believe that this committee's recommendations do both.

I understand that residents in rural Nevada want to protect their lifestyle and their families. Residents in southern Nevada want the same. They want good jobs, a home for their children and the ability to provide for their families. There is a way to accomplish all of these things while utilizing the available resources in the state and without harming either group.

It is also important to note that Southern Nevada is doing its part to conserve this precious resource. Families here are removing grass from areas where it isn't needed or used, following their watering schedules and doing what they can to reduce water use. While the committee has committed to even more aggressive conservation, these activities do not and cannot replace the need to develop other water resources within our state.

There are serious implications of not developing these resources, including jeopardizing the economy of Southern Nevada as well as the entire state. I believe that this is not simply a southern Nevada issue — it is an issue for Nevada as a whole.

Sincerely,

A handwritten signature in black ink that reads 'Bob Nard'.

Robert A. Nard
Building and Construction Trades Council
Nevada State AFL-CIO



"Suggested Language for Recommendation Report"

Aggressively pursue increased conservation measures with respect to developments other than tourism and resort related industries and municipal or quasi-municipal uses, to reduce the average gallons per day usage per person by 25 % in new homes and achieve commensurate reductions in non-residential developments.

Initiate and support new or updated ordinances at all municipalities to further mandate design and construction of all new development to be drought tolerant, with turf strictly limited to usable areas, such as ball fields, parks and other recreational areas that are a minimum of 50 feet in width ("Usable Turf").

Additionally, new or updated ordinances should eliminate residential front yard turf and should limit back yard turf and/or pools to no more than 50% of the square footage of the back yard area or 1,000 square feet, whichever is less.

Aggressively pursue the removal of all turf in existing development except Usable Turf.

Conduct research on the use of automatic weather sensing devices to control irrigation systems. If available systems are reliable and effective, mandate their use in all new residential and commercial development.

Expand public education programs promoting proven drought tolerant shrubs and trees and water saving irrigation techniques.



Nevada State AFL-CIO

602 E. John Street • Carson City, Nevada 89706 • Phone 775-882-7490 • Fax 775-882-1701
1701 Whitney Mesa Drive • Suite 102 • Henderson, Nevada 89014 • Phone 702-459-5288 • Fax 702-452-9537

Danny L. Thompson
Executive Secretary-Treasurer

Walt Elliot
President

Richard McCracken
Legal Counsel

Moshe Bialac
Statewide Job Coordinator

August 15, 2005

IWPAC Committee
1001 S. Valley View Blvd.
Las Vegas, NV 89153

Dear Committee Members:

Last week I received a letter with additional recommendations from Dean Baker concerning inventories and oversight related to the in-state resources projects. I wanted to send you my feedback on the recommendations, since I will be unable to make the meeting on August 22nd.

I am particularly concerned with the idea that we need to perform additional inventories in the groundwater basins before any groundwater development or associated activities can occur. This appears to be the same delaying tactic that was suggested at the Nevada Legislature this spring. While I appreciate the idea that we should know the impacts of future groundwater development and the extent of existing groundwater use in these basins, I can't understand the rationale for proposing that inventories be completed before test pumping can occur. In fact, I think we will learn a lot more about basin impacts once we start stressing groundwater basins.

Mr. Baker's recommendations appear to be very similar to the content of two failed bills during the Legislative Session. We heard two days of testimony on April 6-7, 2005 in the Assembly Government Affairs Committee concerning AB 253 and AB 454. Mr. Baker and other proponents made the same arguments that they are making in this request. The committee also heard from several people from all regions of Nevada who thought the concept would be bad for Nevada Water Law. While I am sure the committee appreciated the concerns raised by the bills' proponents, the committee chose not to pass the bills. In fact, the committee never even brought the bills up for a vote. I am familiar with these issues because I attended these hearings.

I would ask the committee to proceed cautiously with these recommendations. I hope the committee can find a way to accommodate Mr. Baker's concerns without adopting recommendations that clearly were not supported by the Nevada Legislature.

I regret not being at the meeting and hope you will share my concerns with the committee at its next meeting.

Sincerely,

Danny L. Thompson
Executive Secretary

**District 1
North Eastern Nevada**
Rob Kufeld -
Operating Engineers #3

**District 2
Northern Nevada**
John Doran - C.W.A. District 9
Dave Jarvis - Reno Airport Fire Fighters #2955
Rich Houts -
N. NV Central Labor Council
Charlie Cox - U.A.W. #2162
Todd Koch -
N. NV Bldg. Trades Council

**District 3
Southern Nevada**
Ed Beaman - Fire Fighters Local #1908
Jim Arnold, Jr. - Culinary #226
Rick Taber - U.S.W.A. #4856
Robert Nard - S. NV Bldg. Trades Council
D. Taylor - Culinary #226
Susan Campbell - S.E.I.U. #1107
Roberta West - S. NV Central Labor Council

**District 4
Statewide**
Cali Milne - SNEA/AFSCME #4041 (at Large)
Mike Magnani - Teamsters #995 (at Large)
Jerry Penn - NALC #2502 (at Large)
Todd Rosenberg -
Las Vegas Police Protective Association





Nevada State AFL-CIO

602 E. John Street • Carson City, Nevada 89706 • Phone 775-882-7490 • Fax 775-882-1701
1701 Whitney Mesa Drive • Suite 102 • Henderson, Nevada 89014 • Phone 702-459-5288 • Fax 702-452-9537

Danny L. Thompson
Executive Secretary-Treasurer

Walt Elliot
President

Richard McCracken
Legal Counsel

Moshe Bialac
Statewide Job Coordinator

September 21, 2005

IWPAC Committee
1001 S. Valley View Blvd.
Las Vegas, NV, 89153

Dear Committee Members:

Today I received the updated draft of the Recommendations Report, which reflects the committee's discussion at its meeting on August 22, 2005, and am pleased to support the resulting document.

Consistent with the concerns I expressed in a letter dated August 15, 2005, I believe the committee has found a way to accommodate Mr. Baker's issues without adopting recommendations that were not supported by the Nevada Legislature. (Namely, to perform additional inventories in the groundwater basins before any groundwater development or associated activities can occur.)

Overall, the recommendations are a fair representation of the committee's discussion. Please accept this letter as my endorsement of the current draft of the IWPAC Recommendations Report.

Thank you,

Danny L. Thompson
Executive Secretary-Treasurer
Nevada State AFL-CIO

2005 SEP 27 AM 11:03
RECEIVED
COMMUNITY DEVELOPMENT
LAS VEGAS, NV

District 1
North Eastern Nevada
Rob Kufeld -
Operating Engineers #3

District 2
Northern Nevada
John Doran - C.W.A. District 9
Dave Jarvis - Reno Airport Fire Fighters #2955
Rich Houts -
N. NV Central Labor Council
Charlie Cox - U.A.W. #2162
Todd Koch -
S. NV Bldg. Trades Council

District 3
Southern Nevada
Ed Bearman - Fire Fighters Local #1908
Jim Arnold, Jr. - Culinary #226
Rick Taber - U.S.W.A. #4856
Robert Nard - S. NV Bldg. Trades Council
D. Taylor - Culinary #2226
Susan Campbell - S.E.I.U. #1107
Robertia West - S. NV Central Labor Council

District 4
Statewide
Cait Milne - SNEA/AFSCME #4041 (w/ Large)
Mike Magnanli - Teamsters #995 (w/ Large)
Jerry Penn - NALC #2502 (w/ Large)
Todd Rosenberg -
Las Vegas Police Protective Association

