SOUTHERN NEVADA
WATER AUTHORITY

Drought Plan

April 2007

This document is a supplement to the SNWA Water Resource Plan.

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Preface to the January 2005 Drought Plan Revision

The Southern Nevada Water Authority (SNWA) Drought Plan was developed in 2002 and adopted by the SNWA Board of Directors on February 20, 2003 in response to severe drought conditions affecting the Colorado River Basin. The plan identifies drought response measures that can be taken by the community to reduce water demands during times of drought. These measures are intended to spread the burden of drought response as much as possible across all sectors of the community, while targeting those water uses with the greatest potential for water savings.

Following adoption of the plan, drought response measures were implemented by SNWA member agencies and Clark County. Since that time, the SNWA and its member agencies have regularly reviewed the plan's concepts and tactics, working with the public to enhance them where appropriate. As part of this process, the Drought Plan was first amended in February 2004 to reflect changes to Drought Alert restrictions, as well as general changes resulting from the 2004 revision of the SNWA Water Resource Plan.

The January 2005 revision is intended to clarify the overall process for declaring drought stages and to resolve potential conflicts between the original sequence of drought stages and the emergency authorities of local or state government, while maintaining sufficient flexibility for the SNWA and its member agencies to address worsening drought conditions, if they occur. To accomplish this, direct linkage of drought stage declarations to Lake Mead water levels has been eliminated and the Drought Emergency stage is being replaced with a Drought Critical stage. To determine whether or not to declare a particular drought stage, including Drought Critical, the SNWA Board will still consider the Bureau of Reclamation's Lake Mead water level projections, but in conjunction with the community's conservation achievements, projected water demands and other related factors.

This revision specifies golf course water budgets and surcharges during Drought Alert, as well as increased penalties for water waste during Drought Alert for all customers. It also reflects changes to fountain restrictions. The plan has also been revised to reflect the latest information on conservation, drought conditions and water supply conditions.

As Southern Nevada addresses the many challenges posed by drought in the Colorado River Basin, the SNWA will continue to review its Drought Plan regularly to ensure the plan reflects current conditions and levels of action required. Reducing Southern Nevada's vulnerability to drought requires a concerted, sustained effort by the entire community. This plan and its associated measures remain one part of that effort.

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Introduction

The Southern Nevada Water Authority (SNWA) was formed in 1991 by a cooperative agreement among seven water and wastewater agencies in Southern Nevada:

- Big Bend Water District
- City of Boulder City
- City of Henderson
- City of Las Vegas
- City of North Las Vegas
- Clark County Water Reclamation District
- Las Vegas Valley Water District

Collectively, these agencies provide water and wastewater services to Las Vegas, North Las Vegas, Henderson, Boulder City, Laughlin and portions of unincorporated Clark County. The SNWA is the wholesale water provider to the municipal water agencies in Southern Nevada. In addition to its wholesale treatment and delivery responsibilities, the SNWA acquires and manages long-term water resources for Southern Nevada. From its inception, the SNWA mission has been to seek new water resources for Southern Nevada, manage existing and future water resources, construct and manage regional water facilities, and promote responsible conservation. To support this work, the SNWA maintains several key planning documents, including a water resource plan that is reviewed annually and updated as needed.

The SNWA Water Resource Plan provides a comprehensive overview of water resources and demands in Southern Nevada, including a discussion of the critical role conservation plays in SNWA demand forecasts and in efforts to meet future water demands. As noted in the plan, groundwater and Colorado River water are two basic resources used to meet water demands, but conservation is a third resource that is critical to managing and extending those resources over time. Because conservation effectively provides an additional resource by freeing up water that was previously consumed inefficiently or wasted, the SNWA Water Resource Plan incorporates assumptions about water conservation as one element in its portfolio of resource options intended to meet Southern Nevada's water needs in the future.

To sustain and promote conservation goals in Southern Nevada, the SNWA and its member agencies launched a conservation strategic-planning process in 2001. This process brought together decision makers within the community to coordinate strategies, brainstorm ideas and identify future opportunities to involve stakeholders in crafting and implementing additional sustainable conservation for the Las Vegas Valley. However, as drought conditions in the Colorado River Basin became more severe, the SNWA member agencies recognized that a more immediate and actionable community response was necessary. As a result, the conservation strategic planning effort evolved in 2002 to address drought conditions specifically. This effort ultimately provided the framework for development of the SNWA Drought Plan.

While historically the SNWA has relied on conservation to help meet the water needs of Southern Nevada, additional demand reduction became necessary when confronted with the drought conditions currently affecting the Colorado River Basin. To this end, the SNWA developed the Drought Plan as a supplement to the SNWA Water Resource Plan. Although the SNWA continues to develop a portfolio of resource options to meet future demands, the additional conservation measures outlined in this plan are integral to mitigating the impacts of drought on current water supplies.

In 2002, the SNWA anticipated that supplies above and beyond Nevada's 300,000 acre-feet per year apportionment of Colorado River water would be provided by interim surplus water through 2016. Interim Surplus Guidelines were forged in 2001 as part of a 15-year plan to allow California to gradually reduce its Colorado River consumption (about 5.3 million acre-feet per year as recently as 2002 with a 4.4 million acre-feet per year apportionment). The guidelines allow Arizona, California and Nevada to take additional water from the Colorado River for domestic uses through 2016, provided there is adequate storage in Lake Mead for the Secretary of the Interior to make surplus designations.

Under the Interim Surplus Guidelines, the Secretary may declare a full surplus, partial surplus or "normal" operating condition depending upon Lake Mead reservoir levels. Under a full surplus declaration (lake level above 1,145 feet sea level), Nevada can take as much water as needed to meet municipal and industrial uses. Under a partial surplus declaration (lake level between 1,125 and 1,145 feet sea level), Nevada can take just half of the water needed in excess of Nevada's standing apportionment. Under a "normal" operating condition (lake level 1,125 feet sea level, or less), Nevada can only take its basic 300,000 acre-feet consumptive apportionment.

The inability of California water agencies to approve various quantification agreements by the end of 2002 precluded implementation of the Interim Surplus Guidelines for much of 2003. The guidelines were eventually reinstated when California approved the agreements in October 2003. However, by that time, the ongoing drought in the Colorado River Basin had reduced the probabilities that interim surplus water would be available to Arizona, California and Nevada under the guidelines. In response, the SNWA continued to emphasize the drought response and conservation measures outlined in the Drought Plan, and took steps to accelerate the development of additional in-state, non-Colorado River resources within the SNWA resource portfolio.

By the end of 2004, the sustained drought had resulted in Lake Mead falling low enough for the Bureau of Reclamation to recommend the declaration of a "normal" operating condition as part of its Annual Operating Plan for 2005; as a result, Nevada will be required to operate within its basic apportionment. If water levels in Lake Mead fall low enough in the future, shortages are also a possibility. In a shortage situation, the Lower Basin states will be required to take less than their basic apportionments. In either case, Southern Nevada will have to make up any shortfalls in its previously anticipated (for example, interim surplus) Colorado River supply with increased levels of conservation

and drought response, SNWA banked water reserves and in-state resources, when available.

In developing drought response measures, the SNWA adhered to the following basic principles:

1. Avoid restricting non-consumptive uses unnecessarily; that is, any process that returns water to the sanitary sewer for treatment and reuse or return-flow credit.

2. Avoid tactics that are likely to have substantial impacts on the community's economic interests (that is, preserve jobs).

3. Focus on reducing consumptive use (the net amount of water we use each year and cannot get back through return-flow credit to use again).

4. Focus on reducing non-essential uses and waste.

5. Provide reasonable opportunities for large consumptive water users to determine their own operational strategies within a water budget.

6. Consider the positive public perception of limiting highly visible uses of water even if they produce nominal efficiency gains.

7. Consider the impact of perceived equity among various sectors' contributions to conservation.

8. Provide special emphasis on the need for extraordinary, visible leadership from government-sector water users.

9. Acknowledge the need for further participation in the development of this plan from sectors that will be significantly impacted.

The Drought Plan is intended to assist residents, businesses and SNWA member agencies in meeting the challenges associated with the drought. To that end, Chapter 4 describes specific measures to reduce water demands and promote smart water use. The measures, which include stronger water waste enforcement, more comprehensive water use restrictions, and the use of water budgeting or similar techniques, are also outlined in a matrix at the end of this document. These measures apply to all qualities of water such as recycled, reclaimed, raw or potable water.

Chapter 1 – Water Demands and Conservation Goals

For much of the past decade, Southern Nevada has been one of the fastest growing areas in the United States. Since 1991, the population served by purveyor members of the SNWA has almost doubled to over 1.6 million people. Because of this rapid and consistent growth, the SNWA Water Resource Plan is reviewed each year and amended as needed. As part of this annual review process, the UNLV Center for Business and Economic Research (CBER) generates a county population forecast for SNWA each year. The CBER population forecasts are integrated into an annual review of the water demands of SNWA purveyor members and the water resources available to meet projected demands.

Because conservation effectively provides an additional resource by freeing up water that was previously consumed inefficiently or wasted, the SNWA established a conservation program in the early 1990s to begin educating residents on water use and to reduce water demands in the community. More importantly, local purveyors implemented tiered pricing structures for water, which encourage conservation by charging higher rates as water use increases. Since that time, SNWA resource planning efforts have incorporated assumptions about water conservation as one element in the portfolio of resource options identified to meet Southern Nevada's water needs in the future.

In 1993, the estimate of conservation achieved through conservation programs, water related regulations and pricing was about 5%. In 1994, as part of a lengthy SNWA-sponsored public involvement process on integrated resource planning, a citizens advisory committee recommended that the SNWA establish a conservation goal of 10-15% by 2000. By 1996 – only two years later – this goal had been reached, with the community achieving an estimated 12% conservation. The rapid success of this achievement is attributed to changes in plumbing efficiencies, conservation programs and tiered water rates. Beginning in 1997, the SNWA Water Resource Plan incorporated a water use forecast that included the achievement of 25% conservation by the year 2010, using 1990 as a baseline. Since then, all SNWA long-term water demand forecasts have reflected this basic assumption as the basis for water resource planning.

Previous SNWA Water Resource Plans projected that 2002 would be the first year Southern Nevada fully utilized its 300,000 acre-foot Colorado River allocation to meet water demands by local purveyors. The 2002 consumptive use was projected to be approximately 310,000 acre-feet; however, this projection reflected conservation gains necessary to reach 25% conservation by 2010 – gains that were no longer occurring. The upward conservation trend of the 1990s had not continued, peaking in 1999 at about 17% and declining to a four-year low of 13.5% in 2001, as shown in Figure 1.

Given the higher demands and the fact that conservation results were lower than the levels expected, steps were taken in 2001 to improve demand management and to renew the community's commitment to conservation and smart water use.

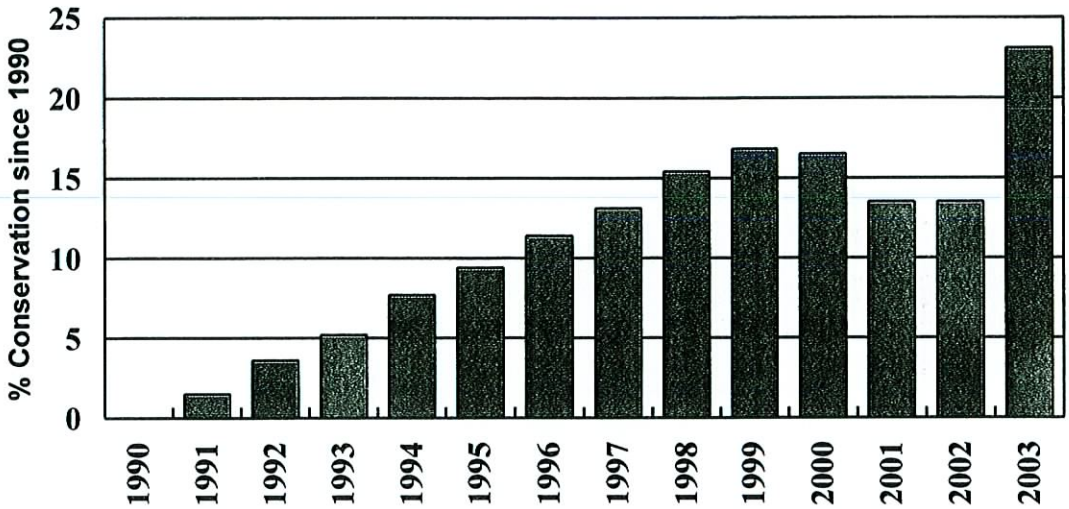


Figure 1. Conservation Achieved to Date

At that time, the SNWA and its member agencies committed to an ongoing conservation strategic planning process that would help ensure realization of the 25% conservation goal for 2010. The strategy and goals would focus on reductions in consumptive use of Colorado River water – the net amount of water we use each year and cannot get back through return-flow credits to use again to extend our water resources. This was a more aggressive conservation approach than existed previously, but was necessary to bring conservation back in line. To achieve these goals, the SNWA and its purveyor members focused on changing the outdoor water use habits of residents, since outdoor use accounts for the greatest consumption of water and the community will not receive significant resource benefits from reduced indoor use (which merely reduces deliveries from, and returns to, the Colorado River).

As the drought became more severe in late 2002, the strategic planning efforts of 2001 and early 2002 became the framework for drought response planning by SNWA and its member agencies, resulting in the SNWA Drought Plan. Following implementation of the Drought Plan and rate changes in 2003, a significant conservation gain was realized, effectively reversing the downward trend of 2000 to 2002. As Figure 1 shows, Southern Nevada achieved 23.1% conservation in 2003 and is now expected to surpass the 2010 goal of 25% conservation as early as 2004.

In addition to this emphasis on renewed conservation and drought response, the SNWA began taking steps to accelerate the development of in-state water resources. As part of this effort, the SNWA launched an integrated water planning process in 2004, one element of which is an Integrated Water Planning Advisory Committee (IWPAC). The IWPAC will be considering new conservation goals for Southern Nevada as it develops

recommendations on how best to integrate in-state water resources into the ongoing water planning and management activities of the SNWA. This integrated water planning effort is expected to continue well into 2005.

Chapter 2 – Water Supply

To meet demands in the future, the SNWA will rely on access to local water resources, more aggressive conservation and drought response as described in Chapters 1 and 4, and the resource options identified in the SNWA Water Resource Plan, including accelerated development of in-state water resources. The timing and extent to which particular options may be used will depend on Southern Nevada's conservation, the continued achievement of needed conservation in the future, drought response and any surplus declarations by the Secretary of the Interior. Development and use of a particular resource can require a variety of state and federal regulatory approvals, permits or other forms of compliance with environmental laws and regulations, as well as financing and constructing of major infrastructure.

Under Interim Surplus Guidelines, there are several conditions that allow the Bureau of Reclamation to make surplus water available to meet domestic demands over a state's basic apportionment. Domestic demands are direct customer uses and exclude the storage of Colorado River water for future use (that is, banking). The surplus conditions and corresponding Lake Mead water levels are identified in Table 2, along with the availability of surplus Colorado River water for Nevada under each condition.

Table 2. Interim Surplus Guidelines

Operating Condition	Lake Mead Level*	Availability of Interim Surplus Colorado River Water for Nevada **
Flood Control	Over 1,204'	• All beneficial uses in Nevada, including banking
Quantified	~1,204' to ~1,198'	• Divided among Arizona, Nevada and California • Priorities of use are (1) domestic, (2) off-stream banking and (3) agriculture
Full Domestic Surplus	~1,198' to ~1,145'	• All Nevada domestic demands over 300,000 acre-feet
Partial Domestic Surplus	1,145' to 1,125'	• Half of Nevada domestic demands over 300,000 acre-feet
"Normal"	Below 1,125'	• Nevada use is limited to 300,000 acre-feet, our basic Colorado River water annual apportionment

* Given in terms of sea level elevation.
** Surplus water is also available to Arizona and California under Interim Surplus Guidelines.

There is one situation lower than a "normal" operating condition, which is not covered by the Interim Surplus Guidelines. Should the drought worsen and reservoir levels along the Colorado River decline low enough, Lower Basin states such as Nevada could see their

basic apportionments curtailed in some years. This would be considered a "shortage" condition, the worst-case scenario on the river.

The Bureau of Reclamation has completed its annual consultation and the Secretary of the Interior approved the 2005 Annual Operating Plan for the Colorado River. The Operating Plan includes a declaration of a "normal" operating condition on the river during 2005 based on Colorado River conditions. A "normal" operating condition, means Nevada and other Lower Basin states would be limited to their basic apportionments. The Operating Plan also calls for a Secretary of the Interior review of actual Colorado River conditions in April 2005. This review may influence 2005 Colorado River operations. The SNWA will continue to monitor Colorado River conditions and demands in assessing future drought declarations. The SNWA will also continue to develop banked water supplies and accelerate its development of additional water resources within the state of Nevada, including groundwater in Clark, Lincoln and White Pine counties, and surface water from the Muddy and Virgin rivers.

As these supply efforts move forward, the SNWA Drought Plan is designed to generate additional water savings to address the current and potential challenges posed by the drought. A more detailed discussion on SNWA's water resource portfolio is contained in the SNWA Water Resource Plan.

Chapter 3 – Drought

Droughts are a fact of life in virtually any climate and it is important to develop plans to reduce their impacts. Defining a drought can be difficult, since it is not a distinct event such as a flood, fire or hurricane. Instead, many complex factors act and interact with the environment to create a situation where water supplies are not replenished normally. Drought affects Southern Nevada through consecutive years of below average snow pack in the Colorado Rocky Mountains. During years of drought, this below average snow pack results in below average runoff to the Colorado River, the source of approximately 90 percent of the water delivered by SNWA and its purveyor members in Southern Nevada.

The estimated natural flow of the Colorado River is already highly variable, as seen in Figure 3. The blue bars show that the natural inflow of the Colorado River has ranged from about 5 million to nearly 24 million acre-feet annually, and that consecutive low-flow and high-flow years occur. Figure 3 also shows that the average flow of the Colorado River during the period of 2000 to 2004 has been the lowest five-year average flow since record-keeping began in 1906.

Figure 4 shows the relationship between runoff in the Colorado River and the water levels of Lake Mead (given in terms of sea-level elevation). This figure demonstrates that above average runoff in the Colorado River generally leads to rising Lake Mead elevations, while below normal runoff generally leads to falling Lake Mead elevations. As a result, Lake Mead's surface elevation has declined significantly (approximately 90 feet) in response to the past five years of below normal flow on the Colorado River.

Figures 3 and 4 underscore the most challenging aspect of drought conditions: no one can tell when they will occur or how long they will last. Projections indicate that it will take several years of above average snow pack in the Colorado Rockies to abate the current drought facing Southern Nevada. Even if the drought ends, several years of significantly above normal runoff will be needed for Lake Mead water levels to recover.

The ultimate goal of the Drought Plan is to define appropriate steps to meet these drought challenges in a coordinated, regional fashion, while ensuring the preservation of local control and oversight by each affected community. For the purposes of drought management in Southern Nevada, the SNWA will use four water supply conditions: (1) **No Drought**, (2) **Drought Watch**, (3) **Drought Alert** and (4) **Drought Critical**.

Declaration of a drought condition by the SNWA will not be tied to any single factor, but will take into consideration such relevant information as Lake Mead water levels, the community's conservation response, projected water demands, and other pertinent issues. Recommendations regarding drought level declarations will be formulated in partnership with the SNWA member agencies. The SNWA Board of Directors will then assess all of

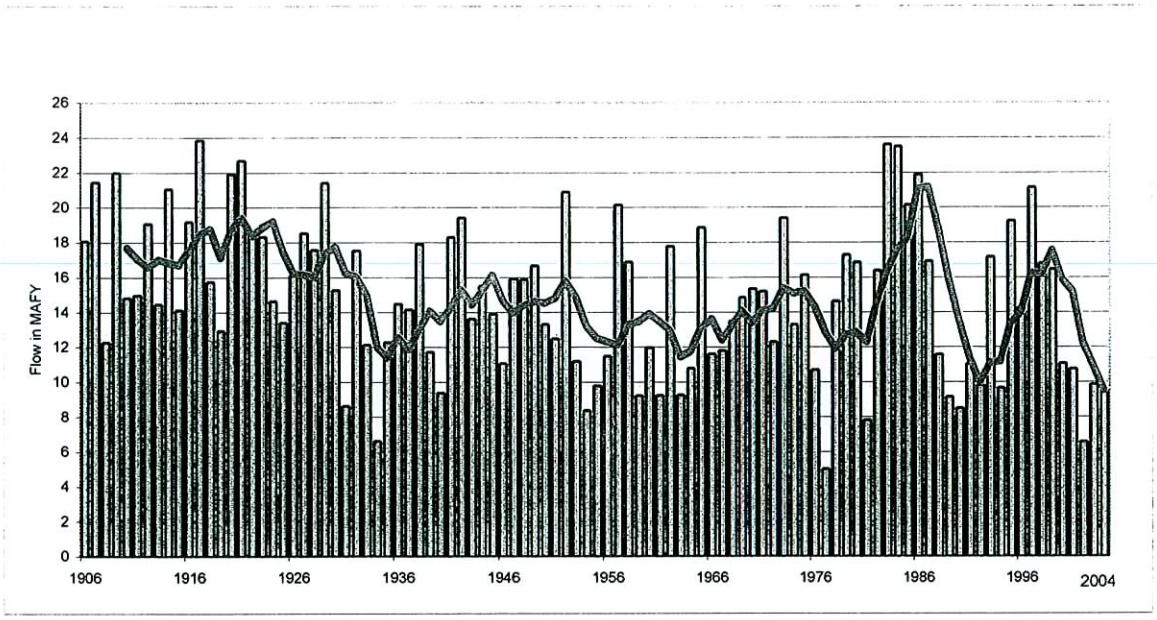
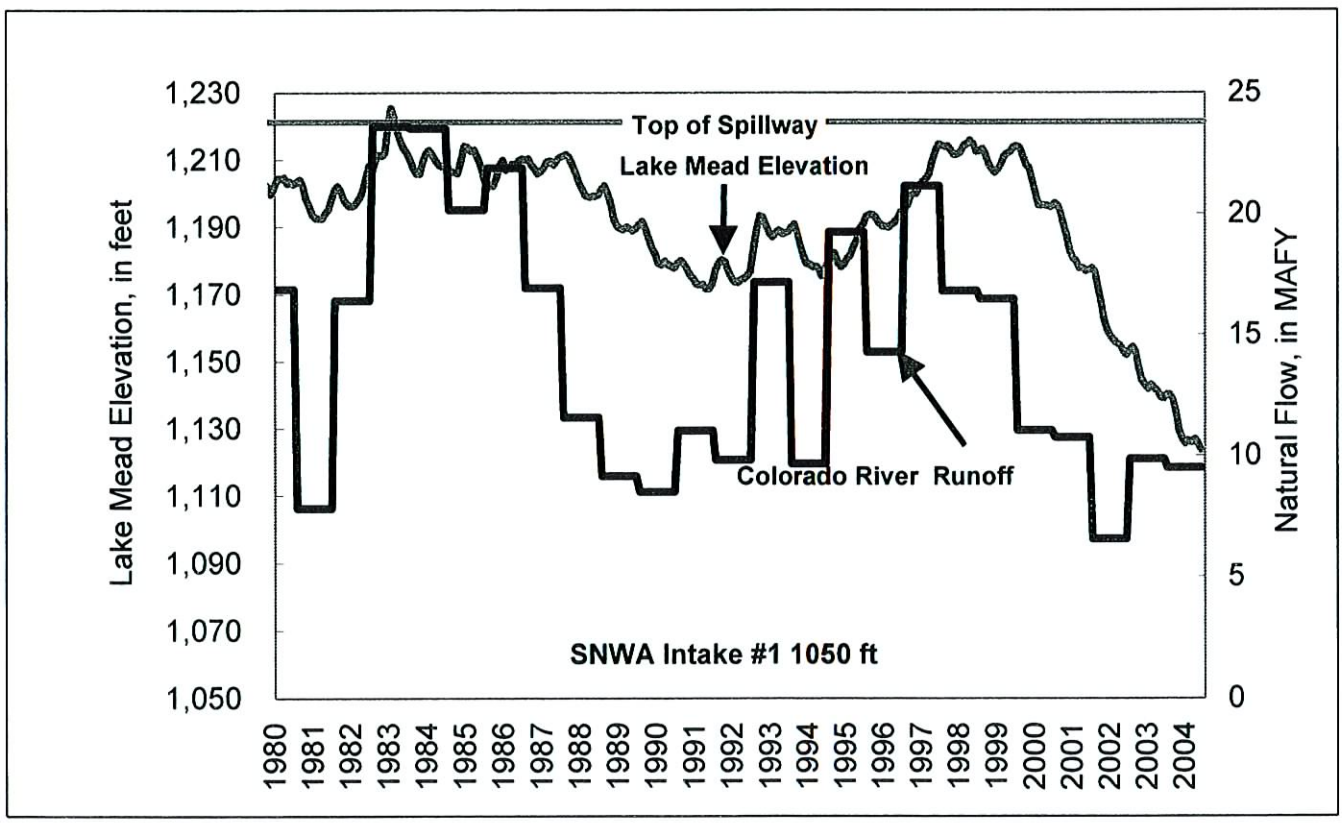


Figure 3. Natural flows at Lee's Ferry, Actual and Five -Year Running Average

Figure 4. Historical Lake Mead Elevations



these factors prior to declaring a drought condition or when determining whether to elevate or lower a drought condition.

To assess water supply conditions, the SNWA will monitor the Bureau of Reclamation "Annual Operating Plan for Colorado River System Reservoirs" and forecasts of Lake Mead's surface elevation to examine the likelihood of reductions in Colorado River water available for use in Nevada and to identify other factors that may influence the availability of Colorado River water in the next two years. The Bureau's updated forecast is available at *www.usbr.gov/lc/region/g4000/24mo.pdf.*

The declaration of a drought stage by the SNWA Board requires the member agencies to address immediate drought response needs. Because droughts differ in length and intensity, the SNWA Board will make periodic assessments and work with its member agencies in determining declarations. If drought conditions worsen, more restrictive measures may be required. The goal of the SNWA and its member agencies is to balance measures to preserve a limited water supply while utilizing the limited supply for the greatest benefit of the community.

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Chapter 4 – Drought Response Measures

This chapter lays out a comprehensive plan for how the SNWA and its member agencies will work together to implement proactive drought response measures to ensure appropriate demand reductions occur during periods of drought. Experience has shown that the most effective approach to accomplish these goals is to coordinate mitigation response actions between the SNWA Board, local purveyors and the community in a timely manner.

This plan anticipates what can be done in the early stages of drought and moves through increasingly more complex drought levels and possible actions. Some drought response measures require minimal customer effort. Measures become more stringent as drought progresses. All drought measures apply to all qualities of water, whether recycled, reclaimed, raw or potable.

In the event any measure in this plan conflicts with a use of water reasonably required to comply with an existing law, that use shall be considered exempt.

The following subsections describe tools and techniques that can assist the community in modifying water demands to meet available supplies. Because the result from a particular measure may vary depending on specific conditions, additional measures may be required to achieve needed effects. For this reason, the chapter is not meant to be exhaustive, but is intended as a framework to help purveyors and the community better coordinate efforts to achieve the levels of conservation response necessary during times of drought.

4.1 Landscape Watering Restrictions – Mandatory Seasonal Scheduling

General Provisions. Each purveyor is responsible for developing watering restrictions that apply to their respective jurisdiction. Prior to the implementation of this plan, each jurisdiction developed time of day watering restrictions that apply to their respective jurisdictions. These restrictions prohibit sprinkler watering from 11 a.m. to 7 p.m. from May 1 to Sept. 30. For the purposes of the Drought Plan all current time of day restrictions apply. In addition, day of the week watering restrictions have been created and implemented. These restrictions are described in Table 4. If drought conditions warrant, landscape watering restrictions beyond those outlined in the matrix may be imposed by the jurisdictions.

During Drought Watch, all current watering restriction exemptions apply. These include hand watering at any time on any day, watering a new landscape or new plantings for 30 days from the date of planting or installation and irrigation by commercial gardens or plant nurseries licensed in Clark County. In addition, member agencies may provide a three-year watering schedule exemption for commercial and residential properties that utilize smart controllers. These customers would be exempt from the mandatory

watering schedule (day of week and number of days per week). Time of day restrictions would still apply. Permanent implementation of this exemption will be evaluated during a three-year study.

Table 4. Day of the Week Watering Restrictions

	Drought Watch	Drought Alert
Winter (November – February)	One Assigned Day per Week	One Assigned Day per Week
Spring (March – April)	3 Assigned Days per Week + Sunday optional	3 Assigned Days per Week
Summer (May – August)	Any Day	Any Day
Fall (September– October)	3 Assigned Days per Week + Sunday optional	3 Assigned Days per Week

Community Use Recreational Turf Areas. Public and private community use recreational turf areas (for example, athletic parks) are permitted to water turf areas twice per week during the months of November through February.

Golf Courses. Golf courses are required to comply with water budgeting policies in lieu of specific watering schedules.

4.2 Other Outdoor Water Use Restrictions

Surface, Building and Equipment Washing (excluding motor vehicles). During Drought Watch and Drought Alert, all surface, building and equipment washing is prohibited unless the water is discharged to a sanitary sewer through approved methods or contained on site.

Vehicle Washing. During Drought Watch and Drought Alert, washing of personal vehicles on residential properties is limited to not more than once per week per vehicle and requires a positive shut-off nozzle. There is no limitation on washing frequency if using the guidelines for commercial vehicles or with high-pressure, low volume sprayers using less than 10 gallons per vehicle. Commercial vehicles may only be washed at a commercial facility where water is discharged to the sanitary sewer through approved

methods or with the use of a high-pressure, low volume sprayer using less than 10 gallons per vehicle.

4.3 Landscape Development Codes

Landscape development shall be limited during drought. In the case of permits issued prior to the adoption of these restrictions, the development rules at the time of permitting shall apply. The following landscape development codes apply during Drought Watch:

Residential Restrictions. New installations of ornamental turf shall be prohibited in common areas of residential neighborhoods. This restriction shall not apply to public or private community parks.

Non-Residential Restrictions. No new turf installations in non-residential developments, except by issuance of a permit from the governing jurisdiction. No permit will allow for over 50 percent of the turf allowed under non-drought conditions.

Each planning jurisdiction will take steps to notify the public of the potential landscape development impacts of a change in drought condition prior to a drought stage declaration. This notification is intended to alert communities of any impending changes well in advance to any change in drought stage.

The following landscape development restrictions apply during Drought Alert:

Residential Restrictions.

- New turf installations are prohibited in residential front yards (except where jurisdictions provide provisions allowing the substitution of turf that would otherwise be allowed in back yards). This turf shall not exceed 50% of the landscapeable area.
- New turf installation in residential back yards shall not exceed 50% of the landscapeable area.
- Multi-family residences allowed new turf up to 50% of the turf limitations under non-drought conditions.
- During the months of September through April, a 30-day exemption on watering day restrictions will be made for new landscape installations.

Non-Residential Properties. The restrictions defined in Drought Watch shall continue to apply.

4.4 Mist Systems for Human Comfort

Residential mist systems are not restricted under Drought Watch and Drought Alert. Commercial use is allowed in Drought Watch and Drought Alert only during the months of May, June, July and August, and only between noon and midnight.

4.5 Conservation Provisions for Golf Course Irrigation

In lieu of assigned watering days or regulations on watering time, golf courses will be subject to water budgets, with appropriate surcharges applied to any water used over the budgeted amounts. For Drought Watch, the annual water budget is 6.5 acre-feet of water per acre. For Drought Alert, the annual water budget is 6.3 acre-feet of water per acre. Courses that exceed their water budget will have significant financial penalties assessed to the water use in excess of budgeted amounts (see Table 4). The surcharges will be assessed on an annual basis and will be in addition to the price paid for water.

For the purpose of applying this policy, golf courses are water budgeted based upon acre-feet of water (including potable, raw, reuse and recycled water) for each acre currently being irrigated. The irrigated acreage includes lakes and ponds existing within a golf course, and lakes and ponds serving in total or in part as a golf course irrigation reservoir. Once measured, the irrigated acreage shall remain fixed, thus creating an incentive for golf courses to convert unneeded turf to other styles of water efficient landscaping. However, if a golf course expands its course by increasing the number of playing holes, a new irrigated acreage will be determined.

Table 4. Water Budget Financial Penalties for Golf Courses

Drought Watch			
Percentage of budget	**101 to 120 percent**	**121 to 140 percent**	**Over 140 percent**
Surcharge to apply to water use in excess of budget	2.0 times the highest rate paid for water within budget	4.0 times the highest rate paid for water within budget	8.0 times the highest rate paid for water within budget
Drought Alert			
Percentage of budget	**101 to 120 percent**	**121 to 140 percent**	**Over 140 percent**
Surcharge to apply to water use in excess of budget	2.0 times the highest rate paid for water within budget	5.0 times the highest rate paid for water within budget	9.0 times the highest rate paid for water within budget

In the event a golf course uses multiple sources of water provided at different rates, the water budgeting surcharge rate will be calculated proportionately. Each water purveyor will develop and implement its own process for billing and collection of water budget penalties. In addition, all golf courses are required to develop and implement a plan to maximize outdoor water use efficiency.

4.6 Conservation Provisions for Schools, Parks and Government Facilities

Conservation provisions outlined in this plan also apply to schools, parks and governmental facilities. Under both Drought Watch and Drought Alert, these facilities are subject to tiered pricing structures and are required to comply with mandatory landscape watering restrictions. In addition, if these facilities have more than five acres of turf, they must conduct a self-assessment of water conservation potential and implement a plan to maximize outdoor water use efficiency.

Member agencies may provide a three-year watering schedule exemption for properties that utilize smart controllers (expires April 2010). These customers would be exempt from the mandatory watering schedule (day of week and number of days per week). Time of day restrictions would still apply. Permanent implementation of this exemption will be evaluated during a three-year study.

4.7 Man-Made Lakes

All man-made lakes with over one acre of surface area, where all or part of the water used is water delivered by an SNWA member agency, is subject to these provisions. Under Drought Watch and Drought Alert, lakes that serve, in whole or part, as a functional reservoir for a golf course are included in the calculation of a golf course water budget. All other man-made lakes shall pay drought surcharges on <u>all</u> fill water during Drought Watch and Drought Alert.

4.8 Restrictions on Operation of Ornamental Fountains and Water Features

All fountains and water features owned or operated by any person holding an account with an SNWA member agency are subject to drought restrictions (these are listed in the matrix following this chapter). This includes the use of SNWA agency water that has been recycled or reprocessed by the customer or agency.

As a general rule, the following uses are exempt:

- Fountains and water features supplied by privately-owned water rights, unless restricted by the code of the applicable jurisdiction.
- Fountains and water features of less than 200 square feet surface area at single family residences during Drought Watch.
- Fountains and water features of less than 25 square feet surface area at single family residences during Drought Alert.
- Fountains or water features that are necessary and functional components serving other allowable uses (for example, storage ponds on a golf course or aeration devices).

- Indoor water features, or features with the majority of the total water volume contained indoors or underground. If practical alternatives exist for separating indoor and outdoor components, they shall be separated and managed accordingly.
- Recreational water parks, both public and private.
- Fountains and water features at resorts as defined by the governing jurisdiction.
- Fountains or water features necessary to sustain aquatic animals, provided that such animals are of significant value and have been actively managed within the water feature prior to declaration of drought.

Residential and commercial fountains or water features that have adequately completed (to the standards of the appropriate governing jurisdiction) turf removal activities, paid an appropriate fee, or some combination of both, may also be granted an exemption. The specific conversion standards and/or fees will be defined by the respective SNWA purveyor member or applicable jurisdiction. However, at a minimum, any turf removed prior to the adoption of the Drought Plan and declaration of drought status cannot receive credit for a conversion in order to maintain a fountain or water feature. In addition, any turf that was removed after the adoption of the Drought Plan and declaration of drought status, and that received a rebate through the SNWA Water Smart Landscapes rebate program, cannot receive credit for a conversion in order to maintain a fountain or water feature. Any fees collected will be utilized by the jurisdictions to fund future turf conversions or other conservation related activities.

4.9 Drought Surcharges and Rate Incentives

Drought surcharges are temporary pricing measures intended to encourage reduction in water consumption during drought conditions. Drought surcharges are a pricing strategy based on the economic law of demand that states as the price of a resource increases, the demand for the resource decreases.

Drought surcharges apply to all customer classes in conjunction with the purveyor's existing rate structure; however, purveyors may also structure surcharges based upon type of use. SNWA member agencies work together to ensure that rates accomplish the goal of balancing resources with customer demands.

The water purveyors have developed drought surcharges in their respective jurisdictions to achieve the regional water use reduction goals. Given the possible alternatives, the SNWA and member agencies work together to ensure reasonable equity among all jurisdictions in the development of rates and surcharges. The intent is to continue to provide affordable water to meet basic needs while creating incentives for reducing waste and overuse.

Drought surcharges may be modified as needed based upon the community's performance in meeting water demand reduction goals.

4.10 Water Waste Enforcement

Water waste is governed by city and county ordinances and water purveyor policy. All jurisdictions have regulations for water waste penalties. These penalties are the same for all jurisdictions and are shown below in Table 5 and Table 6.

Table 5. Water Waste Fees for No Drought and Drought Watch					
Meter Size	**1st Violation**	**2nd Violation**	**3rd Violation**	**4th Violation**	**5th Violation**
1" and less	$20	$40	$80	$160	$320
Over 1" but less than 3"	$40	$80	$160	$320	$640
3" and greater	$80	$160	$320	$640	$1,280

Table 6. Water Waste Fees for Drought Alert					
Meter Size	**1st Violation**	**2nd Violation**	**3rd Violation**	**4th Violation**	**5th Violation**
1" and less	$40	$80	$160	$320	$640
Over 1" but less than 3"	$80	$160	$320	$640	$1,280
3" and greater	$160	$320	$640	$1,280	$2,560

4.11 Incentive Programs

To help achieve further water efficiency gains during drought conditions, SNWA offers a number of incentive programs to promote outdoor conservation, including the Water Smart Landscapes program and the Irrigation Clock rebate program. The Water Smart Landscapes program provides incentives for residents and businesses to replace ornamental turf with water efficient landscaping.

The SNWA will continue to work with its member agencies to identify projects or activities to further promote conservation and water efficiency.

4.12 Public Involvement and Awareness

The SNWA has created a public awareness program to solicit public support and cooperation for the effective and prudent use of water during drought conditions. Public education efforts include development and implementation of a coordinated outreach campaign targeting the entire community, including specialized outreach to government organizations, businesses, youth and the Hispanic community. This outreach is achieved with newsletters, media coverage, bill inserts, local displays, advertising and the creation

of partnership programs with businesses and industries. These techniques promote communication with residents, organizations and the people that they serve.

4.13 Drought Critical

Drought Critical is the most serious stage of drought. Restrictions for this stage will depend on resource needs and will be developed to achieve the greatest level of water savings. The restrictions will be specifically defined and incorporated into this Drought Plan prior to any declaration of Drought Critical.

Matrix

The following matrix summarizes drought response measures under the various drought stages. The SNWA will continue to advise its member agencies on drought conditions and responses, and makes decisions based on the best possible data available. Each member agency is committed to taking all actions within its authority to implement these drought measures within its geographic area or jurisdiction as provided in this Drought Plan. Drought Critical is absent from the matrix; as noted above, restrictions for this stage will be developed and incorporated into the Drought Plan at a later date.

Component	Drought Watch	Drought Alert
Landscape Watering Restrictions *(See pp.17)*	Mandatory seasonal watering schedules for sprinklers: • 3 assigned days per week + Sunday optional (Mar-Apr and Sept-Oct) • 1 assigned days per week winter (Nov-Feb) Increased enforcement of existing time of day restrictions.	Mandatory seasonal watering schedules for sprinklers: • 3 assigned days per week (Mar-Apr and Sept-Oct) • 1 assigned day per week winter (Nov-Feb) Increased enforcement of existing time of day restrictions. Member agencies may provide a three year exemption to customers that use smart controllers (expires April 2010).
Surface, building and equipment washing *(See pp.18)*	Prohibited unless water is discharged to sanitary sewer through approved methods or contained on site.	Prohibited unless water is discharged to sanitary sewer through approved methods or contained on site.
Vehicle washing *(See pp.18)*	Positive shut-off nozzle required for residential use. Commercial vehicle washing prohibited except: 1) where water is captured to sanitary sewer through approved methods, or 2) commercial, high-pressure processes using less than 10 gallons per vehicle.	Positive shut-off nozzle required for residential use. Commercial vehicle washing prohibited except: 1) where water is captured to sanitary sewer through approved methods, or 2) commercial, high-pressure processes using less than 10 gallons per vehicle.

Component	Drought Watch	Drought Alert
Landscape development codes* (*See pp.19)* * *Applies to all new building permits issued during a drought declaration*	Each jurisdiction will notify the public of the potential impacts under Drought Alert condition. Turf prohibited in new commercial and non-residential properties except under permit. Under no circumstances may the permit allow for over 50% of the turf allowed under non-drought conditions.	New turf installations are prohibited in residential front yards (except where jurisdictions provide provisions allowing the substitution of turf that would otherwise be allowed in bark yards). New turf installation allowed in residential back yards up to a maximum of 50% of the landscapeable area. Multi-family residences allowed new turf up to 50% of the turf limitations under non-drought conditions. During the months of September through April, a 30-day exemption on watering day restrictions will be made for new turf installation.
Mist systems for human comfort (*See pp.19)*	Commercial use allowed only under the following conditions: • Months of May, June, July and August only; and • Between noon and midnight only.	Commercial use allowed only under the following conditions: • Months of May, June, July and August only; and • Between noon and midnight only.

Component	Drought Watch	Drought Alert
Water budgeting for golf courses. Includes reclaimed water. *(See pp.20 for table outlining water budgets)*	Subject to water budget of 6.5 acre-feet of water per acre. Budgets shall be calculated based upon the current irrigated acreage. Overuse surcharges shall apply. Required to develop and implement a plan to maximize outdoor water use efficiency.	Subject to water budget of 6.3 acre-feet of water per acre. Budgets shall be calculated based upon the current irrigated acreage. Increased overuse surcharges shall apply. Required to develop and implement a plan to maximize outdoor water use efficiency.
Public parks, schools and governmental facilities *(See pp.21)*	Required to abide by mandatory landscape watering restrictions. If more than five acres of turf, must conduct a self-assessment of water conservation potential and implement a plan to maximize outdoor water use efficiency.	Required to abide by mandatory landscape watering restrictions. Member agencies may provide a three year exemption to customers that use smart controllers (expires April 2010). If more than five acres of turf, must conduct a self-assessment of water conservation potential and implement a plan to maximize outdoor water use efficiency.
Man-made lakes *(See pp.21)* (All man-made lakes with over one acre of surface area, where all or part of the water used is water delivered by an SNWA agency, will be subject to these provisions)	Lakes which serve in total or part as a functional reservoir for a golf course shall be included in the calculation of a golf course water budget. All other man-made lakes shall pay drought surcharges on <u>all</u> fill water.	Lakes which serve in total or part as a functional reservoir for a golf course shall be included in the calculation of a golf course water budget. All other man-made lakes shall pay drought surcharges on <u>all</u> fill water.
Fountains and Ornamental water features (less than one acre surface area) *(See pp.21)*	Use prohibited. Exemptions provided as allowed by jurisdictional governmental bodies. (See section 4.8)	Use prohibited. Exemptions provided as allowed by jurisdictional governmental bodies. (See section 4.8)

Component	Drought Watch	Drought Alert
Water rates and surcharges *(See pp.22)*	All SNWA water purveyors shall assess surcharges predicted to reduce demand in a quantity deemed necessary to meet the expendable supply of water. Surcharges may be adjusted as deemed appropriate based upon community conservation performance.	All SNWA water purveyors shall assess surcharges predicted to reduce demand in a quantity deemed necessary to meet the expendable supply of water. Surcharges may be adjusted as deemed appropriate based upon community conservation performance.
Water waste enforcement *(See pp.22)*	Mandatory violation/penalties after first warning. Increase enforcement.	Mandatory violation/penalties after first warning. Increase enforcement. Increase water waste penalties.
Strengthen incentive programs *(See pp.23)*	The SNWA will assess the effectiveness of existing conservation incentives and strengthen them as appropriate, depending on projected water demands and the level of conservation being achieved by the community.	The SNWA will assess the effectiveness of existing conservation incentives and strengthen them as appropriate, depending on projected water demands and the level of conservation being achieved by the community.