

**SOUTHERN NEVADA WATER AUTHORITY  
BOARD OF DIRECTORS  
REGULAR MEETING  
NOVEMBER 15, 2018  
MINUTES**

CALL TO ORDER 9:09 a.m., Board Chambers, Southern Nevada Water Authority,  
100 City Parkway, Seventh Floor, Las Vegas, Nevada

BOARD MEMBERS PRESENT Marilyn Kirkpatrick, Chair  
Bob Coffin, Vice Chair  
Richard Cherchio (Alternate for John Lee)  
Jim Gibson  
Peggy Leavitt  
John Marz  
Steve Sisolak

BOARD MEMBERS ABSENT None

STAFF PRESENT John Entsminger, Julie Wilcox, Dave Johnson, Greg Walch, Kevin Bethel,  
Colby Pellegrino

OTHERS PRESENT William Nelson, Piercy Bowler Taylor & Kern

*Unless otherwise indicated, all members present voted in the affirmative.*

**COMMENTS BY THE GENERAL PUBLIC**

*For complete comments, audio is available online at [snwa.com](http://snwa.com)*

Tom Warden, Howard Hughes Corporation, spoke in support of item 10. Paul Moradkhan, Las Vegas Metro Chamber of Commerce, spoke in support of item 10.

The Board recognized Director Sisolak for his service on the SNWA Board of Directors and to the community.

**Items were taken out of order.**

**ITEM NO.**

1. ***For Possible Action:*** Approve agenda with the inclusion of tabled and/or reconsidered items, emergency items and/or deletion of items, and approve the minutes from the special meeting of September 13, 2018, and the regular meeting of September 20, 2018.

FINAL ACTION: A motion was made by Director Gibson to approve the agenda for this meeting and to approve the minutes from the special meeting of September 13, 2018, and the regular meeting of September 20, 2018. The motion was approved.

**CONSENT AGENDA**

2. ***For Possible Action:*** Approve an Interlocal Agreement between the City and County of Denver, acting through its Board of Water Commissioners (Denver Water), and the Authority to receive funding for the Colorado River Traveling Exhibition, and ratify the Authority's approval of similar agreements between the Authority and Metropolitan Water District of Southern California, and the Central Arizona Water Conservation District.
3. ***For Possible Action:*** Adopt the Annual Operating Plan for the Southern Nevada Water System.
4. ***For Possible Action:*** Approve and authorize the General Manager to sign an amended and restated retail access form of service agreement for network integration transmission service among Nevada Power Company doing business as NV Energy, the Colorado River Commission of Nevada and the Authority, and authorize the General Manager or his designee to approve future ministerial or administrative changes to this agreement.

FINAL ACTION: Vice Chair Coffin made a motion to approve staff's recommendations. The motion was approved.

**BUSINESS AGENDA**

9. ***For Possible Action: Adopt the 2018 Water Resource Plan and Water Budget.***

Colby Pellegrino, Director of Water Resources, gave an overview presentation on the 2018 Water Resource Plan and Water Budget. A copy of her presentation is attached to these minutes.

FINAL ACTION: Vice Chair Coffin made a motion to approve staff's recommendation. The motion was approved.

6. ***For Possible Action: Adopt a resolution consenting to the issuance of Las Vegas Valley Water District refunding bonds in the maximum principal amount of \$132,500,000 to refinance certain outstanding bonds for the Southern Nevada Water Authority.***

Director Sisolak asked if staff anticipated any additional refunding opportunities in the near future. John Entsminger, General Manager, said that additional refunding opportunities should be available in the future, and staff would bring those opportunities forward as they arise.

FINAL ACTION: Vice Chair Coffin made a motion to approve staff's recommendation. The motion was approved.

5. ***For Possible Action: Approve and authorize the General Manager to sign, in substantially the same form as attached hereto, a purchase and sale agreement between Tim Wood and the Authority for the purchase of property in Clark County, Nevada, for an amount not to exceed \$550,000 and authorize the General Manager to sign ministerial documents necessary to effectuate the transaction.***

Mr. Entsminger presented a map of the proposed property purchase and described the property location and its benefits to the Authority. A copy of the map is attached to these minutes.

FINAL ACTION: Director Gibson made a motion to approve staff's recommendations. The motion was approved.

7. ***For Possible Action: Accept the Southern Nevada Water Authority's Comprehensive Annual Financial Report, including the corresponding Independent Auditors' Report on Financial Statements and Other Supplementary Information for the period ending June 30, 2018 and authorize its submission to the Nevada Department of Taxation.***

William Nelson, Piercy Bowler Taylor & Kern (PBTk), presented the financial report. Director Sisolak asked if the Authority had an Other Post-Employment Benefits (OPEB) liability, and if so, how much of it was funded. Mr. Entsminger said that there was an OPEB liability and that it was currently funded at 80 percent.

Chair Kirkpatrick disclosed that PBTk handled her campaign finances.

FINAL ACTION: Director Gibson made a motion to approve staff's recommendations. The motion was approved.

8. ***For Possible Action: Authorize the General Manager to (1) execute three agreements concerning Drought Contingency Plans for the Colorado River, in substantially the same form as those attached hereto: (i) Agreement Concerning Colorado River Drought Contingency Management and Operations among the United States of America, acting through its Secretary of the Interior (Secretary); certain parties within the Upper Division States of Colorado, New Mexico, Utah, and Wyoming (Upper Division States); the Upper Colorado River Commission (UCRC); certain parties in Arizona, certain parties in California; the Colorado River Commission of Nevada (CRCN); and the Southern Nevada Water Authority (Authority); (ii) Lower Basin Drought Contingency Plan Agreement among the Secretary, certain parties in Arizona, certain parties in California, CRCN, and the Authority; and (iii) DCP Contributions and ICS Accumulation Limits Sharing Agreement among certain parties in Arizona, certain parties in California, CRCN, and the Authority; and (2) execute, in substantially the same form as that attached hereto, an Exhibit to the Forbearance Agreement among the Arizona Department of Water Resources, Palo Verde Irrigation District, Imperial Irrigation District, the City of Needles, Coachella Valley Water District, Metropolitan Water District of Southern California (MWD), CRCN, and the Authority for the Southern Nevada Water Authority's Municipal Conservation and Offstream Storage Intentionally Created Surplus Project; (3) authorize the General Manager to negotiate and execute additional exhibits to the Forbearance Agreement for conservation projects in Arizona and California; and (4) authorize the General Manager to negotiate and execute additional agreements and documents as may be necessary to effectuate all of the foregoing agreements and exhibits.***

Mr. Entsminger and Greg Walch, General Counsel, gave a presentation on the agreements. A copy of the presentation is attached to these minutes.

Director Gibson asked if there were avoided costs by banking water in Lake Mead as opposed to banking water in Arizona or other underground options. Mr. Entsminger said that the Authority by banking water in Lake Mead, the Authority avoids the costs of injecting and recovering water from underground storage.

Director Leavitt thanked staff for their work on the agreements being considered by the Board. She also asked whether action was required from the other parties to the agreements. Mr. Entsminger said that Nevada has been a leader on the Colorado River and would be demonstrating that leadership by approving the agreements.

Vice Chair Coffin talked about the need for additional historical hydrology studies to assist in preparing for potential future hydrologic predictions.

FINAL ACTION: Director Leavitt made a motion to approve staff's recommendations. The motion was approved.

10. ***For Possible Action: Receive a presentation from staff on the status of the Authority's Conservation Plan and discuss conservation programs and policies, authorize an increase to the Authority's Water Smart Landscape program maximum award for any property to \$500,000 in a fiscal year, and remove the fiscal limit under the Authority's Water Efficient Technologies for schools and parks, subject to funding availability within the year requested.***

Mr. Entsminger gave a presentation on conservation programs. A copy of his presentation is attached to these minutes.

Chair Kirkpatrick asked about suggested water smart landscaping for businesses that would address challenges such as pedestrian traffic, low maintenance and trash. Director Marz said that the City of Henderson has an issue with businesses not maintaining water smart landscaping after it is installed.

Mr. Entsminger said that there was not one solution for all types of landscaping applications, but he hoped that the Board would support staff reaching out to the commercial community to further a dialogue on how to maintain or improve the community aesthetics while increasing water conservation.

Director Cherchio described water and landscaping challenges in North Las Vegas and how the city was working to address those challenges.

Vice Chair Coffin said that he wanted to ensure that enough funding remained in the Water Smart Landscape program for residential properties to participate since raising the maximum award amount would mostly benefit large commercial properties and homeowners associations. Mr. Entsminger said that for the community to meet its conservation goals, programs like the Water Smart Landscape program had to target both residential and commercial turf areas. Chair Kirkpatrick said that the Board would have the opportunity in the near future to also discuss program budgets to ensure proper funding levels.

Director Leavitt said that single family residential conversions had increased due to the increased incentive approved previously. She also said that Boulder City would be making improvements to its municipal golf course in the near future.

Director Gibson said that he supported the recommended action and that the Authority should take advantage of all conversion opportunities since they result in water savings.

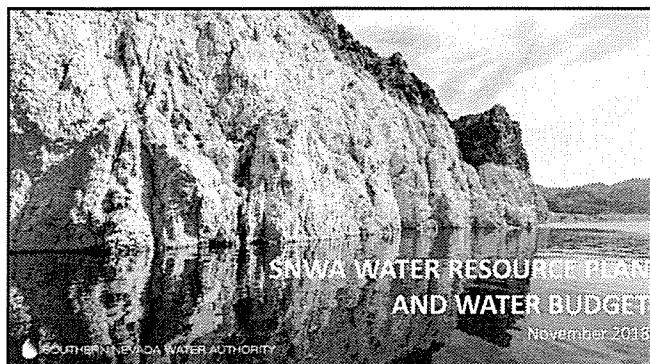
FINAL ACTION: Director Marz made a motion to approve staff's recommendations. The motion was approved.

### **Public Comment**

There were no speakers.

### **Adjournment**

There being no further business to come before the Board, the meeting adjourned at 11:18 a.m.



## SNWA RESOURCE PLAN & WATER BUDGET

The SNWA is required to review its Resource Plan and Water Budget annually.

### 2018 Key Changes:

- Presented Water Resource Plan and Water Budget as a combined document.
- Extended resource planning scenarios through 2069 based on latest CBER population forecast.
- Updated the water resource portfolio.
- Adjusted timing and volume of resource based on need.

## RESOURCE PLAN UPDATES



Updated text and charts to reflect current conditions:

- Lake Mead storage / Colorado River inflows
- Probabilities of shortage
- Resource volumes and availability
- Conservation achievements

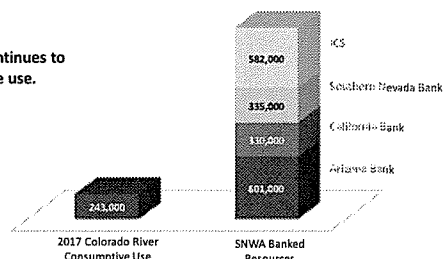
## RESOURCE PLAN UPDATES

SNWA's Water Resource Portfolio includes a diverse set of resource options to reliably meet current and future demands.

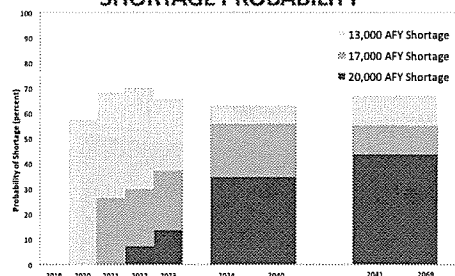
Permanent Resources	Temporary Resources	Future Resources
Colorado River (SNWA)	Southern Nevada Groundwater Bank	Virgin River / Colorado River Augmentation
Nevada Unused Colorado River (Non-SNWA)	Interstate Banks (Arizona and California)	Transfers / Exchanges
Tributary Conservation/Imported ICS	Intentionally Created Surplus (storage in Lake Mead)	In-State Groundwater
Las Vegas Valley Groundwater Rights Direct Reuse		Desalination

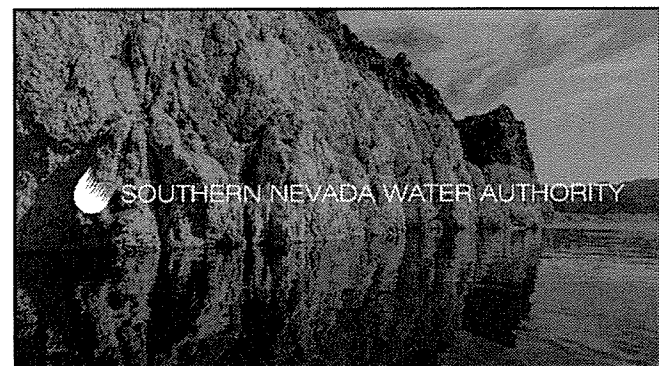
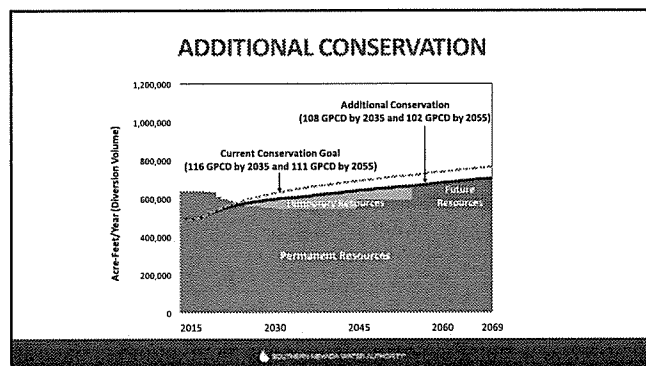
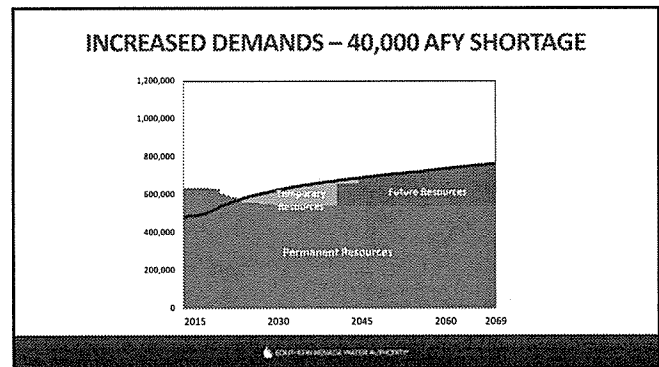
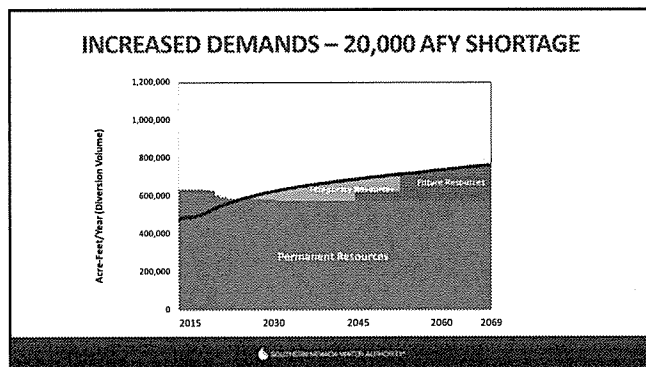
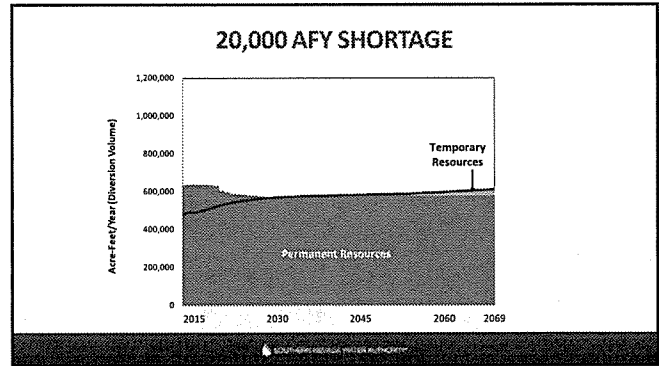
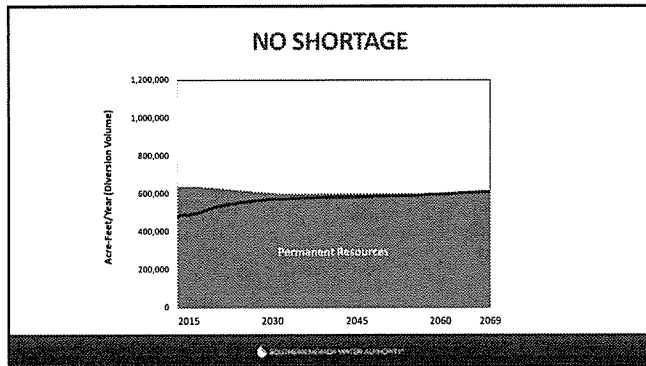
## WATER BANKING

Southern Nevada continues to store water for future use.



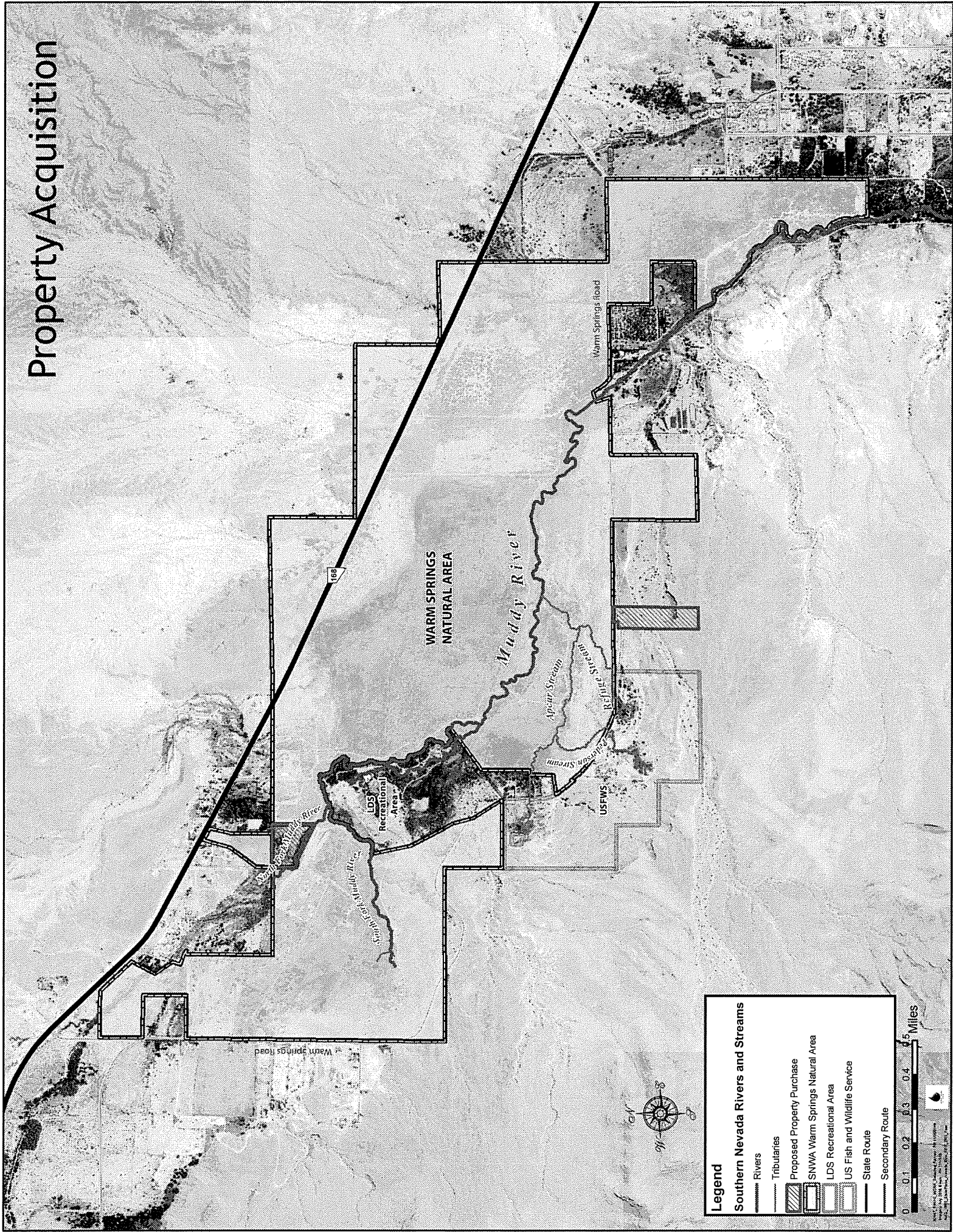
## SHORTAGE PROBABILITY







# Property Acquisition



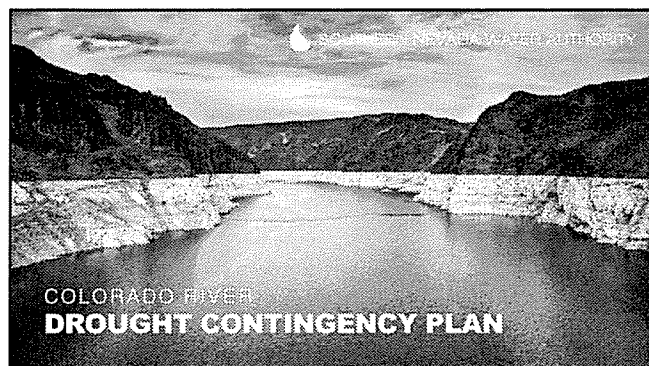
**Legend**

**Southern Nevada Rivers and Streams**

- Rivers
- Tributaries
- Proposed Property Purchase
- SNWA Warm Springs Natural Area
- LDS Recreational Area
- US Fish and Wildlife Service
- State Route
- Secondary Route

0 0.1 0.2 0.3 0.4 0.5 Miles

North Arrow



## BACKGROUND

The 2007 Interim Guidelines create the operational framework for today's Colorado River Operations. Key elements include:

- Defined shortages based upon Lake Mead's elevation
- Coordinated operations of Lake Powell and Lake Mead, particularly under low reservoir conditions
- Created a program for the storage and delivery of conserved Colorado River and non-system water in Lake Mead – Intentionally Created Surplus
  - Only Tributary Conservation and Imported ICS are available during shortages

## BACKGROUND

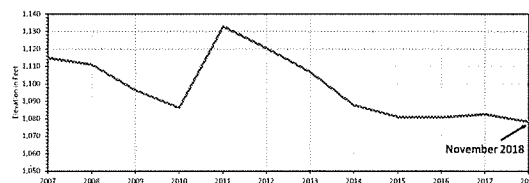
The 2007 Interim Guidelines authorized shortage sharing among Lower Basin States to provide certainty to water users.

Lake Mead Levels	Nevada's Share	Arizona's Share	California's Share
1,050 -1,075 feet	13,000 af	320,000 af	0 af
1,025-1,050 feet	17,000 af	400,000 af	0 af
Below 1,025 feet	20,000 af	480,000 af	0 af

The states also committed to consulting with the Secretary when Lake Mead is projected to fall below elevation 1,000 ft.

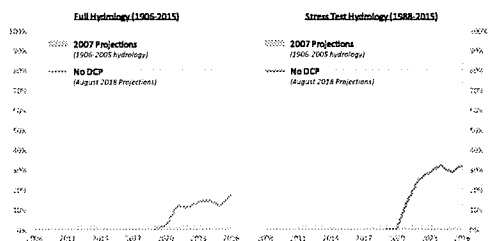
## CURRENT CONDITIONS

Since 2007, Lake Mead's water levels have seen further declines.



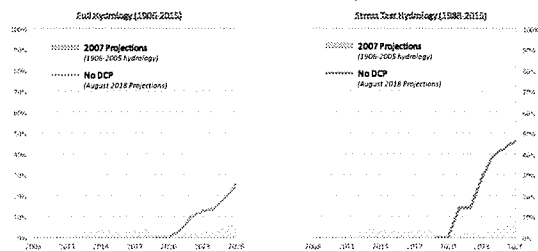
## INCREASED RISK: LAKE POWELL <3,490

The risk of reaching critical elevations has substantially increased since 2007 Guidelines were implemented.



## INCREASED RISK: LAKE MEAD <1,020

The risk of reaching critical elevations has substantially increased since 2007 Guidelines were implemented.



## MEXICO AGREEMENTS

In August 2017, the SNWA approved Minute 323 to the Mexican Water Treaty of 1944.

- Continued measures outlined in Minute 319
- Established 10-year pilot program for creation of additional Binational Intentionally Created Surplus
- Commitment by Mexico to implement a Binational Water Scarcity Contingency Plan upon approval of the Lower Basin DCP in the U.S.
- Affirmed commitment from Mexico to participating in shortages

## INTERIM DROUGHT RESPONSE ACTIONS

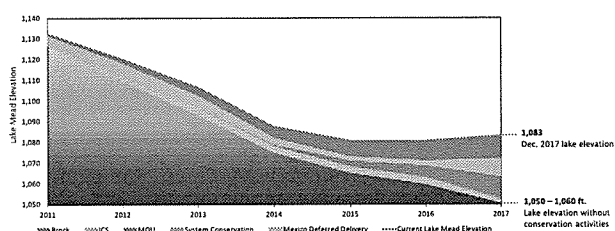
### Pilot System Conservation Agreement

- Bureau of Reclamation, SNWA, CAWCD, MWD, and Denver Water
- Expenditures to date: ~\$36 million total; \$4.5 million from SNWA
- Water savings accrue to the system
- Shared responsibility among all parties to address declining lake elevations

### Lower Basin MOU

- Bureau of Reclamation, Lower Basin parties
- Major water users committed to voluntarily contribute additional water to Lake Mead
- Recognized a need for a more permanent actions to protect Lake Mead

## IMPACT ON LAKE MEAD



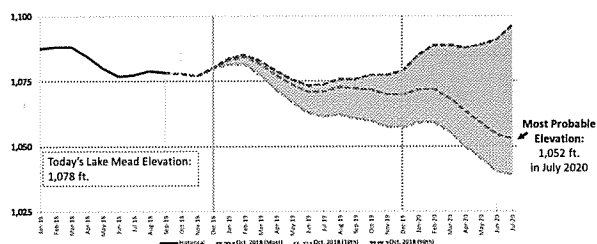
## ACTION STILL NEEDED

Existing shortage amounts are insufficient to protect against reservoir declines if dry conditions continue.



## PROJECTED ELEVATIONS

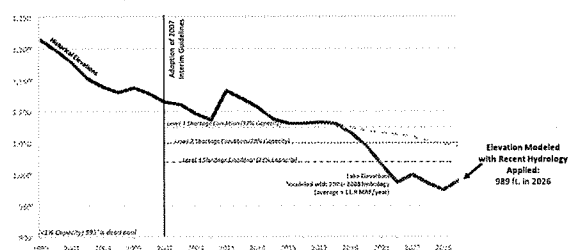
Further declines in Lake Mead are projected.



Source: Bureau of Reclamation's 24-Month Study

## PROJECTED ELEVATIONS

Further declines in Lake Mead are projected.

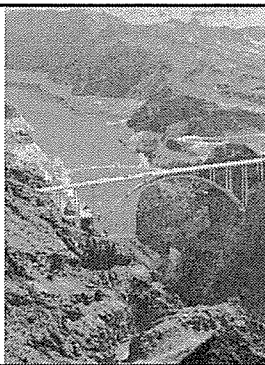


Source: Bureau of Reclamation's Modeling Projections



## DROUGHT CONTINGENCY PLANNING

Colorado River users (U.S. Department of Interior – Bureau of Reclamation; Colorado River Basin States; and country of Mexico) have been working for years on Drought Contingency Plans



## DROUGHT CONTINGENCY PLANS

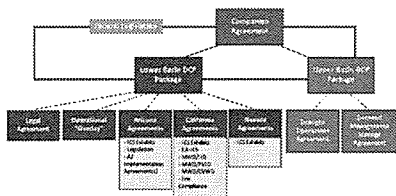
The Drought Contingency Plans will reduce the risk of Colorado River reservoirs reaching critical elevations.

UPPER BASIN	LOWER BASIN
<b>GOALS:</b> <ul style="list-style-type: none"> <li>Reduce risk of Lake Powell reaching critically low elevations (8,490 ft. / 3,525 ft.)</li> <li>Reduce risk of involuntary curtailment within Upper Basin to maintain compliance with 1922 Compact</li> </ul> <b>KEYELEMENTS</b> <ul style="list-style-type: none"> <li>CRSPA initial units drought response operations</li> <li>Demand Management Storage capacity</li> </ul>	<b>GOALS:</b> <ul style="list-style-type: none"> <li>Reduce risk of Lake Mead elevations from below 1,020 ft.</li> </ul> <b>KEYELEMENTS</b> <ul style="list-style-type: none"> <li>Creates water contributions</li> <li>Removes disincentives to storing water in Lake Mead</li> <li>Enhances ability to store and access water in Lake Mead</li> </ul>

10

## AGREEMENTS

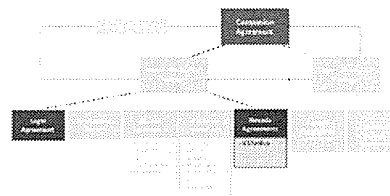
A complex series of agreements and legislation is required before enactment.



11

## AGREEMENTS

Nevada parties must execute three of them, along with an exhibit.



12

## DCP PACKAGE

(i) Agreement Concerning Colorado River Operation and Drought Contingency Management and Operations (Companion Agreement)

**PARTIES TO AGREEMENT:** All (U.S. Department of Interior and Commissioner of Reclamation; Upper Basin parties; Lower Basin parties)

- Incorporates Upper Basin DCP and Lower Basin DCP documents and provides for the collective support of all Basin States and the Secretary for the DCP
- Allows an evaluation of water management tools in both basins to evaluate effectiveness through a reservation of rights
- Recognizes need for federal legislation to implement the DCP

13

## DCP PACKAGE – UPPER BASIN

Drought Response Operations Agreement (Drought Operations)  
Agreement for Drought Response Operations of the Initial Units of the Colorado River Storage Project Act

**PARTIES TO AGREEMENT:** Secretary of Interior and Upper Basin parties

- Actions are taken to protect ability to generate hydropower at Glen Canyon Dam by releasing additional water from upstream reservoirs when there is potential to reach critical elevations
- Helps ensure Upper Basin states continue fulfilling delivery obligations

14

## DCP PACKAGE - UPPER BASIN

### Demand Management Storage Agreement

Agreement Regarding Storage at Colorado River Storage Project Reservoirs Under an Upper Basin Demand Management Program

**PARTIES TO AGREEMENT:** Secretary of Interior and Upper Basin parties

- Provides a storage program in Lake Powell to help Upper Basin maintain Compact compliance
- Reduces the risk of a Compact obligation curtailment in the Upper Basin

## DCP PACKAGE

### (ii) Lower Basin Drought Contingency Plan Agreement

**PARTIES TO AGREEMENT:** Secretary of Interior and Lower Basin parties

- Provides Lower Basin states and Secretarial commitment to the operational framework for the Lower Basin DCP
  - DCP contributions to Lake Mead in addition to those required by 2007 Guidelines
  - Flexibility to encourage voluntary storage of additional volumes in Lake Mead by removing disincentives to store when Lake Mead approaches shortage elevations
- Represents a commitment by the Secretary to implement programs designed to generate 100,000 acre-feet per year of conserved water
- Commitment by all parties to prevent Lake Mead from reaching critically low elevations

## DCP PACKAGE

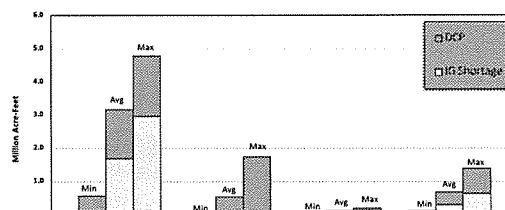
### Exhibit 1 to the Lower Basin Drought Contingency Plan Agreement Lower Basin Drought Contingency Operations (LBOs)

2007 Interim Guidelines, Minute 323, Lower Basin Drought Contingency Plan & Binational Water Scarcity Contingency Plan

Lake Mead Elevation (ft. msl)	2007 Interim Guidelines Shortages	Minute 323 Delivery Reductions	Total Combined Reductions	DCP Contributions				Binational Water Scarcity Contingency Plan Savings				Conserved Volumes by Electricity in 2007 (Interim Guidelines, Minute 323 Delivery Reductions + DCP Contributions + Binational Water Scarcity Contingency Plan Savings)				Total Conserved Volumes
				AZ	NV	CA	Mexico	AZ Total	NV Total	CA Total	Mexico Total	AZ Total	NV Total	CA Total	Mexico Total	
1,000 - >1,075	0	0	0	0	192	8	0	41	192	8	0	200	41	0	0	241
1,075 - >1,050	320	13	50	382	192	8	0	30	512	21	0	533	80	0	0	613
1,050 - >1,045	400	17	70	487	192	8	0	34	592	25	0	617	104	0	0	721
1,045 - >1,040	400	17	70	487	240	10	200	76	640	27	200	667	146	0	0	1,013
1,040 - >1,035	400	17	70	487	240	10	350	84	640	27	350	927	154	0	0	1,079
1,035 - >1,030	400	17	70	487	240	10	300	92	640	27	300	967	162	0	0	1,129
1,030 - >1,025	400	17	70	487	240	10	350	101	640	27	350	1,017	171	0	0	1,188
<1,025	400	20	125	625	240	10	350	150	720	30	350	1,100	275	0	0	1,375

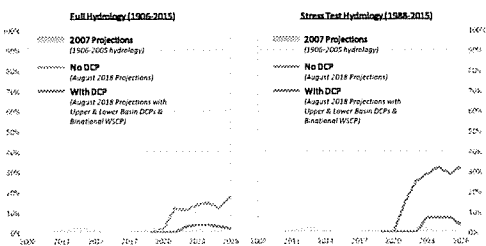
## DCP CONTRIBUTIONS

Cumulative Contributions by State through 2026 - Stress Test Hydrology



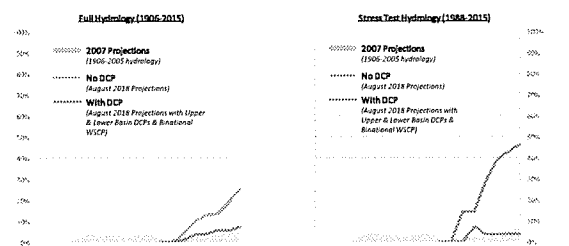
## REDUCING RISK - LAKE POWELL <3,490

Modeling indicates that DCP will reduce risk.

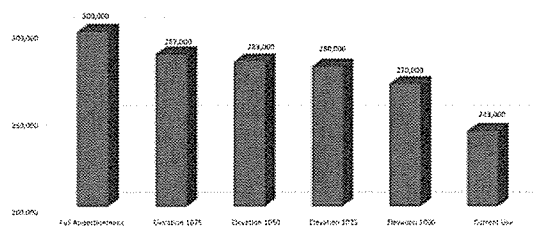


## REDUCING RISK - LAKE MEAD <1,020

Modeling indicates that DCP will reduce risk.

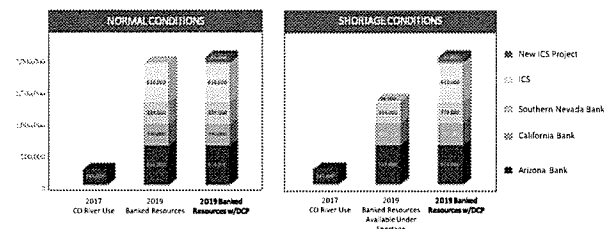


## WATER USE



## DCP PACKAGE

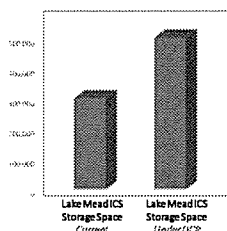
Exhibit 1 to the Lower Basin Drought Contingency Plan Agreement  
Lower Basin Drought Contingency Operations (LBOs)



## DCP PACKAGE

Extraordinary Conservation ICS

The DCP permits Lower Basin States to store an additional 200,000 acre-feet of banked Extraordinary Conservation ICS in Lake Mead.



## DCP PACKAGE

Municipal Conservation and Offstream Storage ICS Project –  
Forbearance Agreement Exhibit

**PARTIES TO AGREEMENT:** Nevada, California and Arizona parties

- Recognizes SNWA's extraordinary conservation measures and investments to reduce dependence on Colorado River supplies
- Authorizes the creation of ICS in Lake Mead based upon the difference between Nevada's apportionment and the amount of water used consumptively
- Includes water conserved in 2017 and thereafter

## DCP PACKAGE

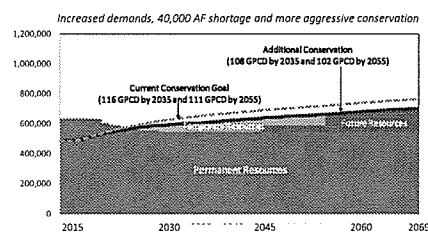
(iii) DCP Contributions and ICS Accumulation Limits Sharing Agreement

**PARTIES TO AGREEMENT:** Nevada, California and Arizona parties

- Implements provisions from the Lower Basin DCP Agreement that authorize the sharing of ICS accumulation space between states and contractors in one Lower Basin State to make DCP Contributions on behalf of contractors in another Lower Basin State.
- Nevada and California would share up to 50,000 acre-feet each of their ICS Accumulation limits with Arizona contractors through 2026, if needed.
- SNWA will, if needed, make up to 300,000 acre-feet of DCP Contributions that MWD is required to make through 2026.
  - The water will remain credited in SNWA's DCP ICS account, and SNWA may access it after 2026.

## PROACTIVE PLANNING

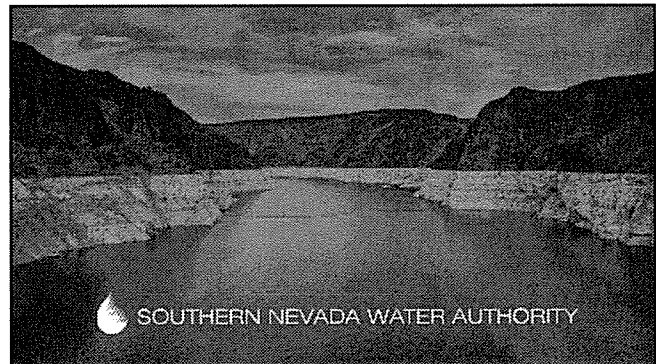
Proposed 2018 Resource Plan: Stress Scenario

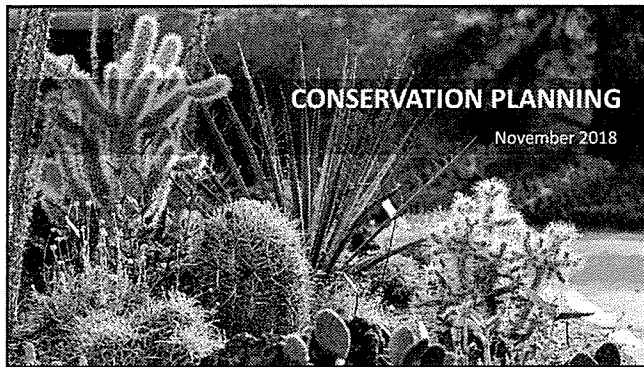


## DCP SUMMARY

- Reduces risk of Colorado River reservoirs reaching critical elevations
- Creates tools for the Upper Basin to manage Lake Powell for power and future compact requirements
- Includes California as a participant in protecting Lake Mead
- Triggers Mexico's agreement to store additional volumes of conserved water in Lake Mead
- Adds new levels of DCP Contributions to protect Lake Mead
- Creates additional incentives to store and access additional ICS, including during shortages

42





### CONSERVATION GOAL

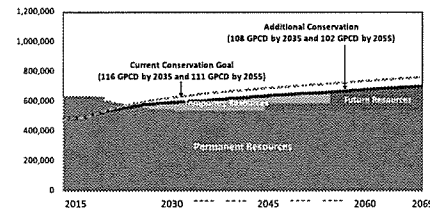
Having surpassed its previous conservation goal early, the SNWA Board adopted a more aggressive conservation goal in 2005.

- The 2014 IRPAC reaffirmed the need to conserve and maintain the goal
- GOAL: 116 GPCD by 2035
- CURRENT PROGRESS: 127 GPCD

SOUTHERN NEVADA WATER AUTHORITY

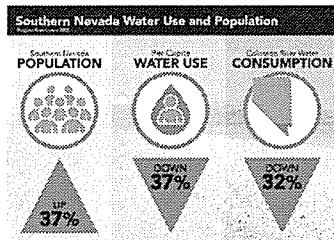
### CONSERVATION CRITICAL TO FUTURE

Progress towards our community's conservation goal is critical to meet future demands.



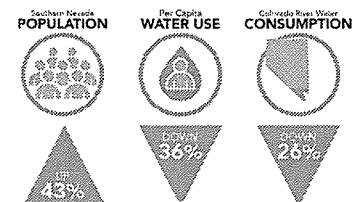
SOUTHERN NEVADA WATER AUTHORITY

### CONSERVATION PROGRESS: 2002 - 2015



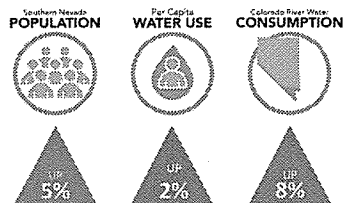
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### CONSERVATION PROGRESS: 2002 - PRESENT



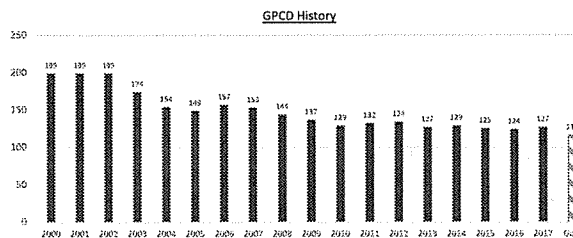
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## WATER USE TRENDS: 2015 vs. Today



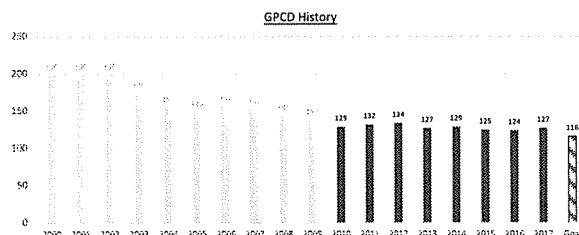
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## CONSERVATION GOAL PROGRESS



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## PROGRESS HAS STALLED



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## WHY PROGRESS HAS WANED



Why progress has waned:

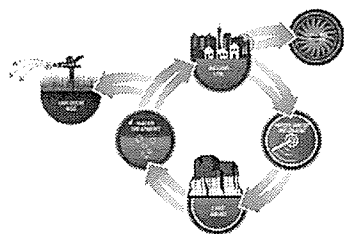
- Economic growth
- Warmer, drier weather
- Drought "fatigue"
- Complacency

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## RETURN-FLOW CREDITS

Southern Nevada recycles nearly all water used indoors.

SNWA Conservation programs target consumptive water uses – where water cannot be returned to Lake Mead.

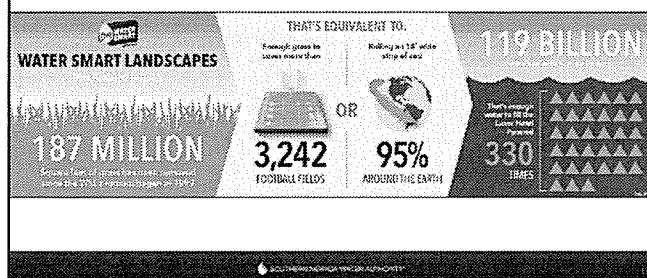


SOUTHERN NEVADA WATER AUTHORITY

- I. HISTORY & BACKGROUND
- II. WSL PROGRAM
- III. INCENTIVIZING PARTICIPATION
- IV. WATERING RESTRICTIONS & ENFORCEMENT
- V. WET PROGRAM
- VI. SUMMARY



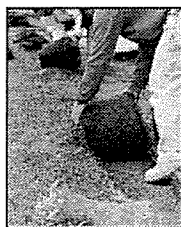
## WATER SMART LANDSCAPES PROGRAM



## WSL PROGRAM CONDITIONS

- SNWA staff performs pre-conversion inspection
- Areas for conversion must be living, maintained lawn (or outdoor water surface)
- At least 400 square feet (Some smaller projects may qualify)
- Conversions must include:
  - 50% living plant cover at maturity
  - Drip irrigation systems
  - Permeable surface treatments (rock, bark, ungrouted step stones, permeable artificial turf)

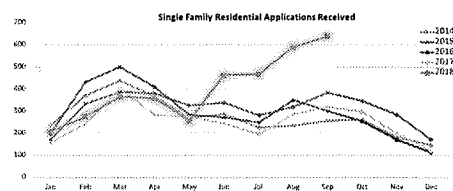
## WSL PROGRAM CONDITIONS



- Conversion completed in 12 months
- \$3 rebate for first 10,000 square feet; \$1.50 for remaining
- \$300,000 total rebate limit
- Projects can be completed DIY or any contractor
- Conservation Easement required to sustain water savings

## WSL APPLICATIONS

Increasing the rebate (\$3/sq. ft.) yielded the largest increase in applications in more than a decade.



## APPLICATION INCREASE IMPACTS



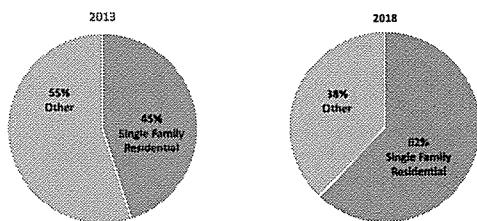
- Wait time for pre-inspection appointments up to 3 weeks
- Mandatory overtime for Conservation staff
- Current staffing needs supplemented by interns and temporary labor
- Comprehensive staffing evaluation prior to FY 2019/20 budget

## STAFF RECOMMENDATION

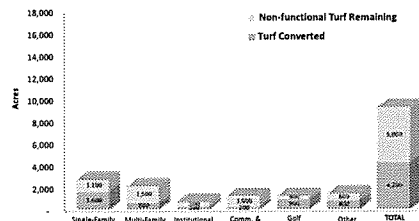
**Utilize Limited Term Employees, interns and temps as needed to sustain existing conservation programs and implement new initiatives**



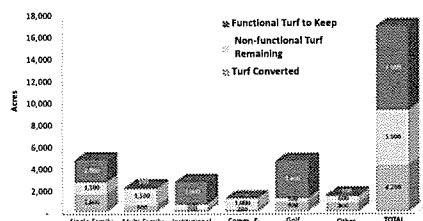
### CONVERTED SQUARE FOOTAGE BY SECTOR



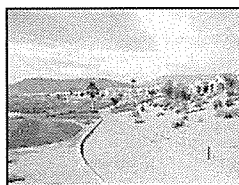
### NON-FUNCTIONAL TURF



### NON-FUNCTIONAL TURF



### GOLF COURSES



53 golf courses in Southern Nevada

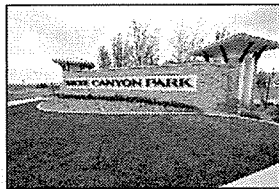
933 acres converted to water efficient landscaping since 2002 (40.6 million square feet)  
\* The equivalent of nearly 9 golf courses

Water Saved: 2.3 billion gallons each year

Average Acreage Per Hole:  
5.09 acres in 2001  
3.91 acres today

### NON-FUNCTIONAL TURF

Unused turf is wasted water.

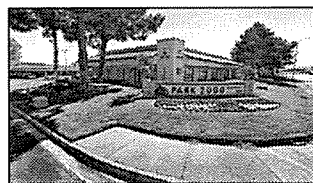


Skye Canyon Park, Las Vegas

- Medians
- Roundabouts
- Neighborhood entries
- Pocket parks
- Front yards
- Unused back yards

Non-functional turf is aesthetic only; only walked on by landscapers.

### NON-FUNCTIONAL TURF



Commercial Park, Sunset & Eastern

REMAINING NON-FUNCTIONAL TURF: 5,000 acres (218 million sq. ft)

POTENTIAL WATER SAVINGS: 12.2 billion gallons (37,400 acre-feet)

## NEW NON-FUNCTIONAL TURF INSTALLATIONS



Poseos community entrance, Summerlin

Development codes have helped curb recent installations.

However, non-functional turf continues to be installed.

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## STAFF RECOMMENDATION

### Work with municipal agencies to prohibit non-functional turf installations



- Require a minimum area for the size of grass in parks
- Prohibit turf near the entrances of neighborhoods
- Prohibit turf in narrow strips, surrounded by streets
- Amend building codes, service rules and other regulations to prevent non-functional grass installations that supersede existing developer agreements

14

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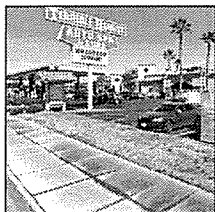
## TARGETED OUTREACH

- **PROGRAM HOLDOUTS:** Contacted prior applicants who didn't complete projects (2,500 residential; 105 commercial)
- **AERIAL IMAGERY:** 20,000 letters were sent to properties targeted by aerial surveys in September and October
- **MEDIAN TURF OUTREACH:** Making direct contact with HOA Boards



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## COMMERCIAL OUTREACH



Terrible Herbst, Valley View & Rancho

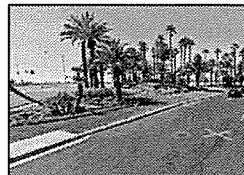
Reaching commercial property owners has proved challenging as it's hard to find the person responsible for the decisions:

- Property managers have no incentive or are disconnected from finances of organization
- Landscapers are not decision-makers
- Owners are difficult to find/contact, out of state and local representatives are not empowered to make decisions

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## TURF IN MEDIAN OUTREACH

The SNWA initiated a campaign focused on turf in medians to elicit more participation in the WSL Program.



Rhodes Ranch Community Entrance, Southwest

### PHASE I

- 53 letters sent to HOAs
- 21 follow-up calls (successfully connected)
- 13 meetings completed
- 2 pending meetings
- 4 expressed interest in conversion, follow-up scheduled
- 27 properties in Phase II

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**STAFF RECOMMENDATION**

## Increase the rebate cap on the WSL Program from \$300,000 to \$500,000

Making the conversion size limit equivalent to previous rebates could help encourage larger conversions.

Effective	Rebate Amount	Conversion Cap	Max Conversion Size
Prior	\$2	\$300,000	295,000 sq. ft.
Current	\$3	\$300,000	190,000 sq. ft.
Proposed	\$3	\$500,000	323,000 sq. ft.

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## WATERING RESTRICTIONS

**MANDATORY WATERING RESTRICTIONS**

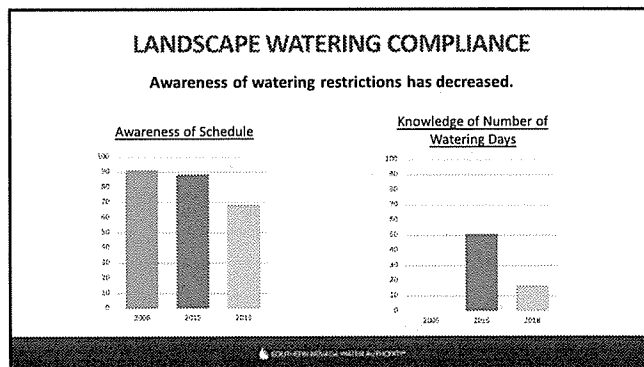
Watering is required on the following days:

- January: Monday, Wednesday, Friday
- February: Monday, Wednesday, Friday
- March: Monday, Wednesday, Friday
- April: Monday, Wednesday, Friday
- May: Monday, Wednesday, Friday
- June: Monday, Wednesday, Friday
- July: Monday, Wednesday, Friday
- August: Monday, Wednesday, Friday
- September: Monday, Wednesday, Friday
- October: Monday, Wednesday, Friday
- November: Monday, Wednesday, Friday
- December: Monday, Wednesday, Friday

Landscape watering restrictions were adopted in 2003.

Restrictions include:

- Time of day
- Day of week
- Seasonal schedules
- Sundays off (adopted 2017)



## LANDSCAPE WATERING COMPLIANCE

A moderate increase in compliance could yield significant water savings.

Although compliance rates vary by season, an average improvement of 15% could yield more than 19,500 acre-feet of water savings annually.

In winter alone, just a 1% improvement in compliance could yield approximately 350 million gallons in water savings.

## INCREASING COMPLIANCE

- Since August, LVVWD has sent 2,500 Sunday watering compliance letters
- SNWA launched new ad campaign
- Enhanced communication with landscapers
- New watering schedules printed and distributed to all customers in 2017

## WATER WASTE ENFORCEMENT



Water waste enforcement promotes compliance with existing conservation regulations and stimulates participation in SNWA programs.

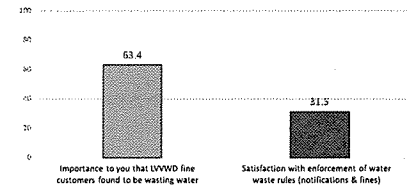
Water waste is managed by purveyors, not SNWA

- Fee and violation structures differ
- Enforcement levels vary among purveyors

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## WATER WASTE ENFORCEMENT

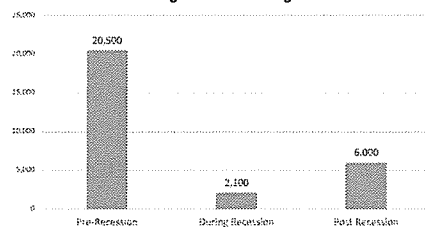
Ongoing customer satisfaction surveys reveal that enforcement is important to residents, but unsatisfied with current levels.



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## LVVWD WATER WASTE ENFORCEMENT

Average Annual Investigations



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### STAFF RECOMMENDATION

**Increase enforcement valley-wide, applying new resources and tools**



Leverage technology to identify and report water waste (new water waste form on LVVWD.com)

Utilize analytics within water operation systems (Itron and others)

Improve enforcement consistency across jurisdictions

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## WET PROGRAM

SNWA offers rebates to businesses who pilot or install technologies to reduce water use onsite.



Water-Efficient Tunnel Washers at Brady Linen

### WET Program

- \$45 one-time payment per 1,000 gallons permanent annual reduction (consumptive)
- \$15 one-time payment per 1,000 gallons permanent annual reduction (non-consumptive)
- Allows customers to select their own technology

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## WET PROGRAM



Cooling Tower

### WET Menu Options:

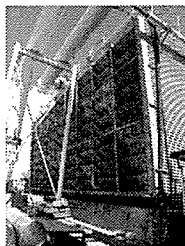
- High efficiency toilet, showerhead or urinal retrofits
- Cooling tower retrofits
- Artificial turf conversions

### Custom Option Requirements:

- Achieve annual water savings of at least 100,000 gallons
- Projects must be maintained at least 10 years

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## COOLING TOWERS



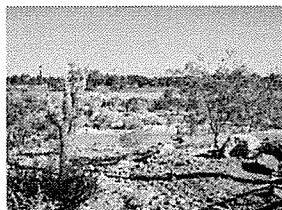
Cooling towers at Mirage

Cooling towers represent a significant consumptive use within Southern Nevada.

- SNWA is engaged in a national-scale assessment of cooling technologies through a multi-agency collaborative project (Alliance for Water Efficiency Study)
- SNWA also collaborated with WaterStart and MGM to conduct real-time water use monitoring at Bellagio – data will provide helpful information regarding large facility use

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## UNDERUTILIZED TURF AT PARKS



Sagehen Park, Clark County

Convert underutilized turf with more-efficient surface:

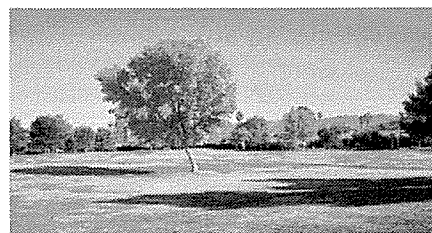
- Sport court hardscapes & skate parks
- Splash pads connected to sanitary sewer
- Playground/picnic areas
- More efficient turf grasses or ground covers

### Anticipated Benefits

- Improved quality of life
- More utilization
- Water savings
- Cost savings

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## OLDER PARKS



O'Callaghan Park, Henderson

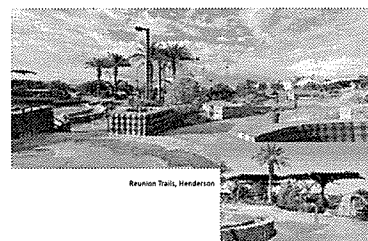
## OLDER PARKS



Paradise Park, Las Vegas



## NEWER PARKS





Reunion Trails, Henderson



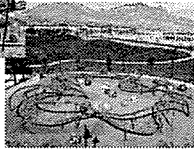


### NEWER PARKS





Fox Hill Park, Summerlin



### HIGH SCHOOL FOOTBALL FIELDS

**BY THE NUMBERS: CCSD**

Average Size Field: 91,000 sq. ft.

Water Savings: 6-7 million gallons/year

Water Bill Savings: \$20,000-\$25,000/year

Convert field grass with artificial turf

Leverage corporate interest in local water conservation initiatives, corporate and federal grants


**Anticipated Benefits**

- Water savings
- Cost savings for school
- Economies of scale
- Lower maintenance
- Year-round aesthetic

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STAFF RECOMMENDATION

### Waive the WET cap for pilot projects at schools and parks



The current cap (\$100,000) is limiting

A park or football field conversion is estimated to cost up to \$800,000

Pilot projects would help guide additional program development

Paseos Park, Summerlin

1. Utilize Limited Term Employees, interns and temps as needed to sustain existing conservation programs and implement new initiatives.
2. Increase the rebate ceiling on the WSL Program from \$300,000 to \$500,000
3. Work with municipal agencies to prohibit non-functional turf installations.
4. Increase enforcement valley-wide, applying new resources and tools
5. Waive the rebate ceiling on the WET Program for schools and parks

