

City of Arts & Innovation

December 2, 2015

Sent via email: [commentletters@waterboards.ca.gov](mailto:commentletters@waterboards.ca.gov)

(12/7/15) Public Workshop  
Urban Water Conservation  
Deadline: 12/2/15 by 12:00 noon



Jeanine Townsend, Clerk to the Board  
State Water Resources Control Board  
1001 I Street, 24th floor  
Sacramento, CA 95814

**RE: EMERGENCY REGULATION FOR STATEWIDE URBAN WATER CONSERVATION - WORKSHOP COMMENTS**

The City of Riverside, through its Public Utilities Department, hereby submits the following comments in response to the State Water Resources Control Board's request for input for the December 7, 2015 informational workshop on the potential extension and modification of the existing Emergency Regulation for Statewide Urban Water Conservation (Emergency Regulations) if drought conditions persist into 2016.

Since 2008, Riverside has met 100% of its annual water needs from local, well managed, adjudicated groundwater basins, and locally produced recycled water. Presently, Riverside produces water from three local groundwater basins that recharge naturally within the Santa Ana River watershed. The basins from which we produce groundwater all recharge from natural, local precipitation and in spite of the drought, the water table depth has been stable over the past several years. Our prior capital expenses along with ongoing investments in groundwater management and dry-year yield programs would become significant stranded investments under arbitrary regulations to reduce water use. Our well managed groundwater basins are capable of meeting current and future demands, for at least the next four years, because of these significant local investments.

The City of Riverside has legally challenged the State Water Board's adoption of the existing Emergency Regulation. Riverside does not dispute the existence of a drought in California or the need to conserve water. We do, however, object to the State Water Board's failure to specifically recognize water conservation by groundwater water agencies with adequate supplies that are naturally recharged by sources other than imported water. Riverside is uniquely situated with a robust source of groundwater with many years' worth of reserves. The current Emergency Regulations have a separate conservation tier for surface water agencies with a minimum of four years of supply and no dependence on imported water. No separate conservation tier is established for groundwater agencies with a minimum of four years of supply and no dependence on imported water. Now that the State Water Board has had time to fully consider the Emergency Regulations, Riverside requests that these regulations be amended to remedy this discrepancy.

Riverside proactively took the steps to be water-independent since 2008. Riverside does not import or rely upon imported water and has a decades-long reserve of groundwater even at pre-conservation use rates (see attached Exhibit A, Riverside Public Utilities' June 18, 2015 "Rationale for the Petition for Writ of Mandate and Complaint for Relief," pp. 13, 17). The water levels in the area have remained stable since 1934 (Exh. A, p. 17), and are sufficiently robust that purposeful dewatering by over-extraction took 24 years to lower the water table by 80 feet (Exh. A, p. 15).

Riverside Public Utilities • Administration

3750 University Avenue, 3rd floor • Riverside, CA 92501 • 951.826.2135 • [RiversidePublicUtilities.com](http://RiversidePublicUtilities.com)



Riverside's water resources are unique within the state;

- Riverside is solely dependent upon local groundwater basins that have a minimum of four years of supply.
- Riverside does not import any water from outside the hydrologic region in which it is located, including no imports from the State Water Project.
- Riverside's groundwater resources are naturally recharged

The groundwater basins Riverside draws from were adjudicated in 1969, in *Western Municipal Water District of Riverside County et al., vs. East San Bernardino County Water District et al.*, Riverside County Superior Court Case No. 78426 (the "1969 Judgment" [available online at <http://www.sbvmwd.com/Home/ShowDocument?id=1494>]). The 1969 Judgment was adopted after the 1950's drought to prevent overdrafts in this basin (Exh. A, p. 21). The 1969 Judgment establishes a safe yield, which is independent of imported water supplies. Riverside and the other parties have successfully cooperated in sustainably managing the groundwater through past droughts and can continue to do so through this drought. An additional benefit of the 1969 Judgment is the thorough, detailed data compiled by a court-appointed Watermaster. (Exh. A, pp 19-22.)

In conclusion, Riverside offers the following response to the specific question posed by the State Board:

**1. What elements of the existing Emergency Regulation, if any, should be modified in an extended Emergency Regulation?**

Riverside proposes the following amendment to the section 865(c)(2) of the "Adopted Text of Emergency Regulation" to address groundwater urban water suppliers with a minimum of four years of supply with no imports of water.

"(c)(1) To prevent the waste and unreasonable use of water and to meet the requirements of the Governor's April 1, 2015 Executive Order, each urban water supplier shall reduce its total potable water production by the percentage identified as its conservation standard in this subdivision. Each urban water supplier's conservation standard considers its service area's relative per capita water usage.

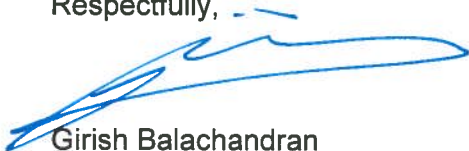
(2) Each urban water supplier whose source of supply does not include groundwater or water imported from outside the hydrologic region in which the water supplier is located, and that has a minimum of four years' reserved supply available may, submit to the Executive Director for approval a request that, in lieu of the reduction that would otherwise be required under paragraphs (34) through (4011), the urban water supplier shall reduce its total potable water production by 4 percent for each month as compared to the amount used in the same month in 2013. Any such request shall be accompanied by information showing that the supplier's sources of supply do not include groundwater or water imported from outside the hydrologic region and that the supplier has a minimum of four years' reserved supply available.

**(3) Each urban water supplier whose source of supply is solely groundwater other than groundwater imported from outside the hydrologic region in which the water supplier is located, has a minimum of four years' reserved supply available and whose groundwater supplies recharge naturally may submit to the Executive Director for approval a request that, in lieu of the reduction that would otherwise be required under paragraphs (4) through (11), the urban water supplier shall reduce its total potable water production by 4 percent for each month as compared to the amount used in the same month in 2013. Any such request shall be accompanied by information showing that the supplier's source of supply do not include water imported from outside the hydrologic region and that the supplier has a minimum of four years' reserved supply available."**

This amendment was also proposed in our July 2, 2015 letter to Ms. Caren Trgovich, attached hereto as Exhibit B.

With such addition, the State Water Board will still have the discretion to review the data submitted by the groundwater agencies and determine if a lower conservation tier is appropriate.

Respectfully,



Girish Balachandran  
Public Utilities General Manager

GB/mp/cef: PUGM-015-017\_SWRCB Comment Letter from RPU\_12-02-2015



*Arts & Innovation*

## SWRCB's 2015 Mandatory Emergency Drought Regulations

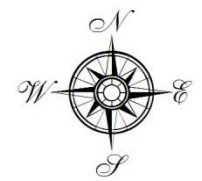
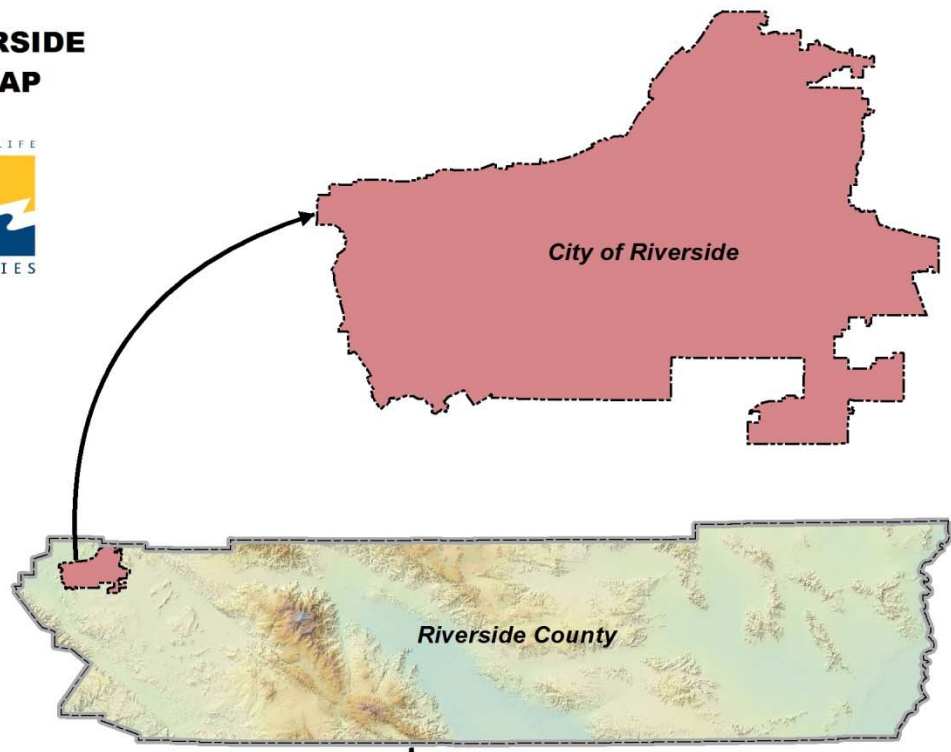
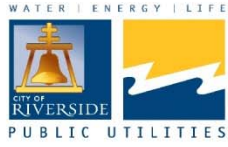
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*Rationale for the Petition for Writ of Mandate and Complaint  
for Relief*

*June 18, 2015*

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# CITY OF RIVERSIDE VICINITY MAP



NOT TO SCALE



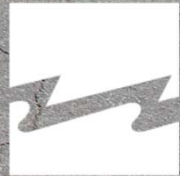
WATER | ENERGY



PUBLIC UTILITIES



WATER | ENERGY | LIFE

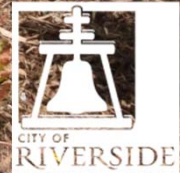


PUBLIC UTILITIES

San Bernardino's PaceSetters (Photo Credit John Coleman)



WATER | ENERGY | LIFE



PUBLIC UTILITIES



# City of Riverside



2010 Western Waterwise Landscape Contest 1<sup>st</sup> Place

Before



After



WATER | ENERGY | LIFE



RiversidePublicUtilities.com

# City of Riverside Public Utilities History

- Water Department  
1913
- Acquired following  
Companies:
  - Riverside Water Company  
(founded 1885)
  - Gage Canal Co.  
(founded 1885)
  - Numerous smaller Companies



[RiversidePublicUtilities.com](http://RiversidePublicUtilities.com)



# Services Provided

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- RPU Service Area population is approximately 300,000
- 64,000 metered RPU customers
- Delivers potable water to retail and wholesale customers
- Delivers non-potable water to irrigation customers
- Delivers recycled water

[RiversidePublicUtilities.com](http://RiversidePublicUtilities.com)



# Riverside's Water System

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- 49 active domestic wells
- 11 treatment plants and chlorination stations
- 3 imported water connections
- 8 emergency inter-ties
- 16 storage reservoirs (109 MG)
- 41 booster stations
- 46 Hydraulic Zones (925–1750)
- 954 miles pipeline (4–72 inch)

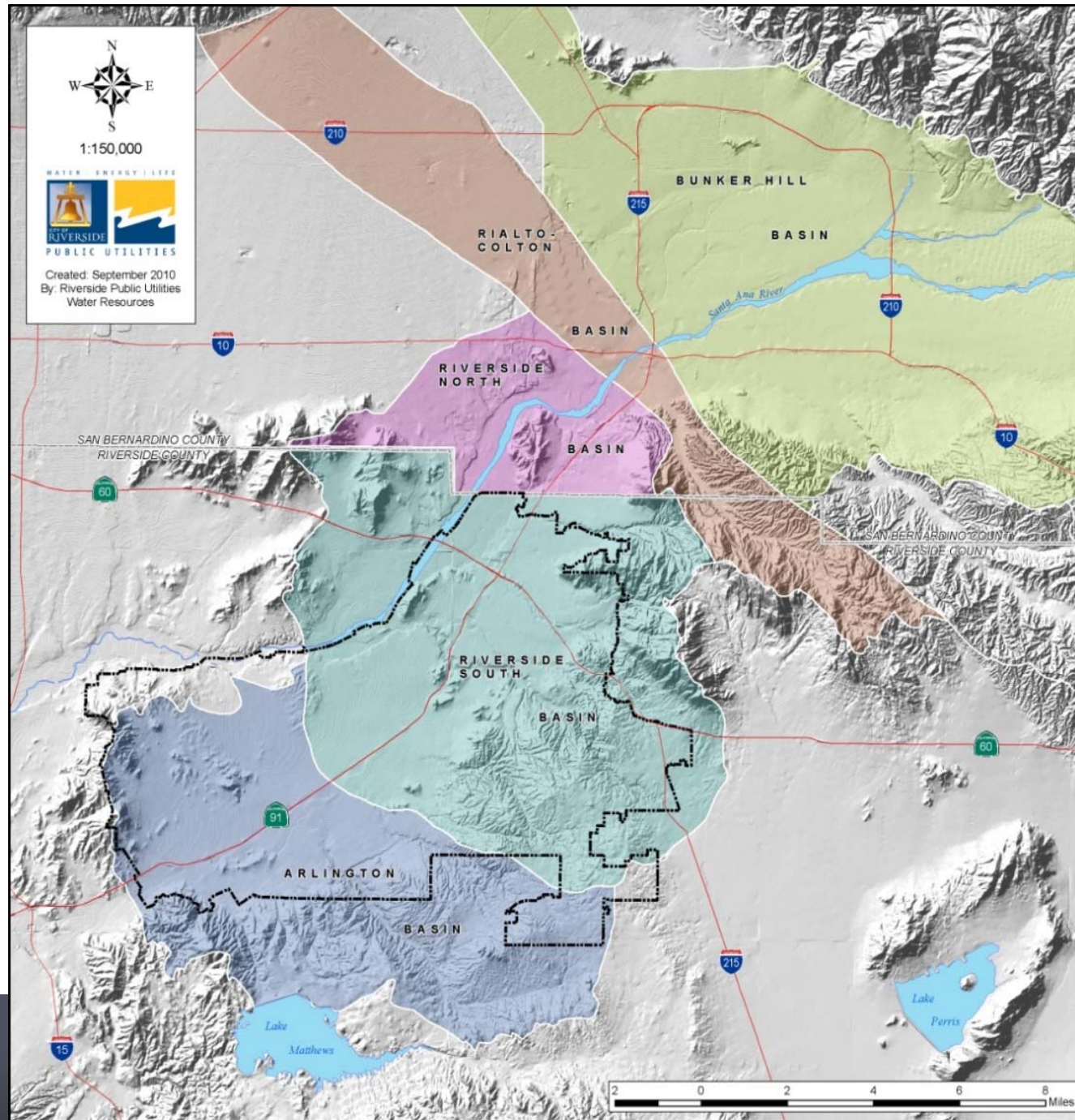
# Sources of Water Supply

- 100% imported water independent
- Produce water from multiple groundwater basins
  - Bunker Hill (64% of 2014 supplies)
  - Rialto-Colton (0% of 2014 supplies)
  - Riverside North (12% of 2014 supplies)
  - Riverside South (24% of 2014 supplies)

# Imported Water Independent

- Riverside has been independent of Imported water since 2008, and has groundwater infrastructure in place to remain independent for the foreseeable future.
- In 2008 Riverside began operating its John W North Treatment Plant, capable of production 10MGD





- Bunker Hill Basin
- Rialto-Colton Basin
- Riverside North
- Riverside South
- Arlington Basin



# Basin Characteristics

Groundwater Basin	Surface Area (acres)	Storage Capacity (acre-ft)	Depth to Bedrock (ft)	Estimated Safe Yield (acre-ft/yr)	Safe Yield % of Storage Capacity
Bunker Hill	89,600 <sup>C</sup>	5,976,000 <sup>C</sup>	> 1,200 <sup>B</sup>	232,100 <sup>A</sup>	4%
Rialto-Colton	30,000 <sup>C</sup>	2,517,000 <sup>C</sup>	> 1,000	17,675	1%
Riverside	39,680	1,646,000	400 to 700	62,300 <sup>D</sup>	4%
<b>Total</b>	<b>159,280</b>	<b>10,139,000</b>	---	---	---

A) Western-San Bernardino Judgment

B) USGS Open-File Report 2005-1278

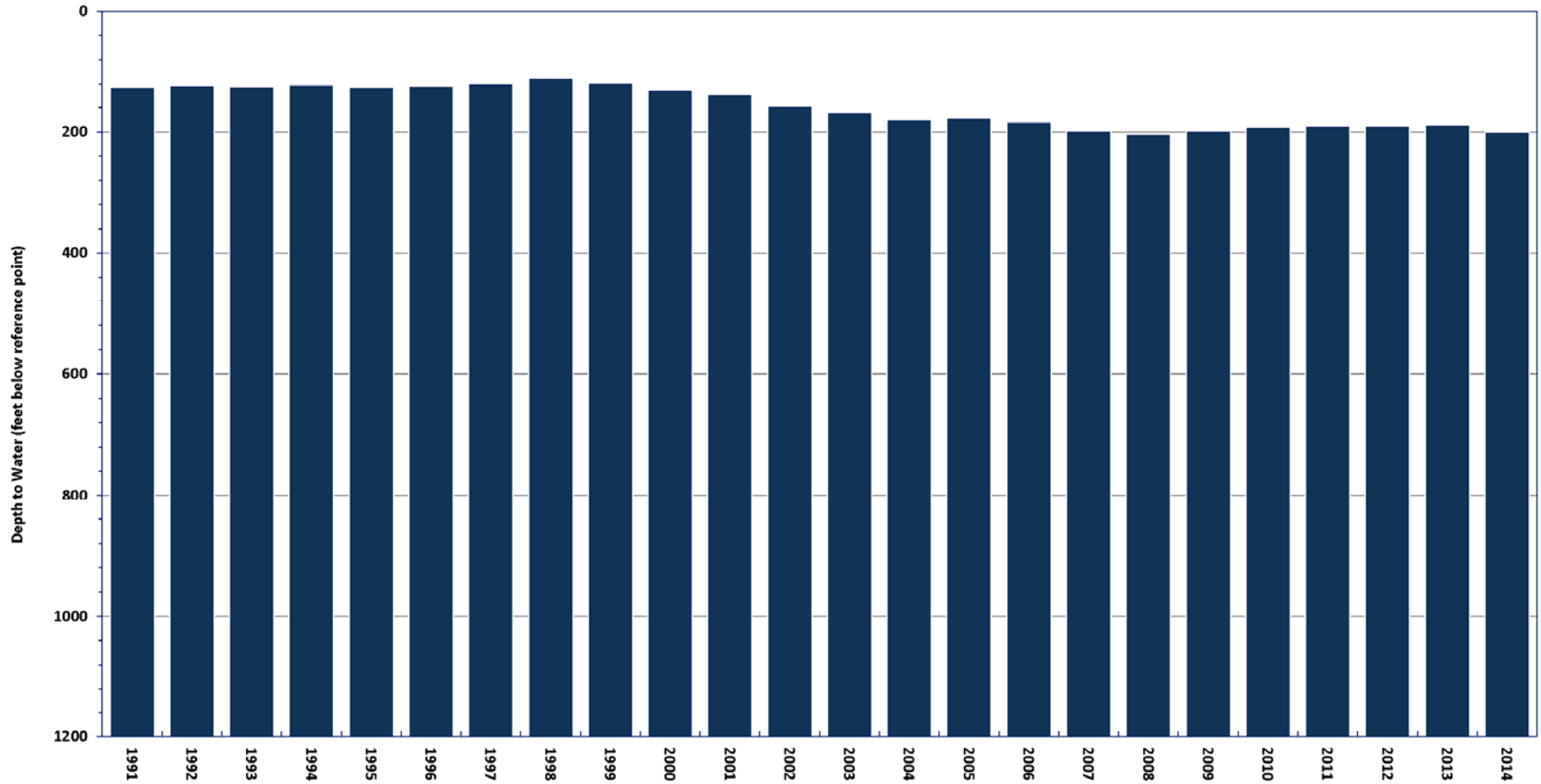
C) DWR bulletin 118

D) Riverside-Arlington Groundwater Flow Model

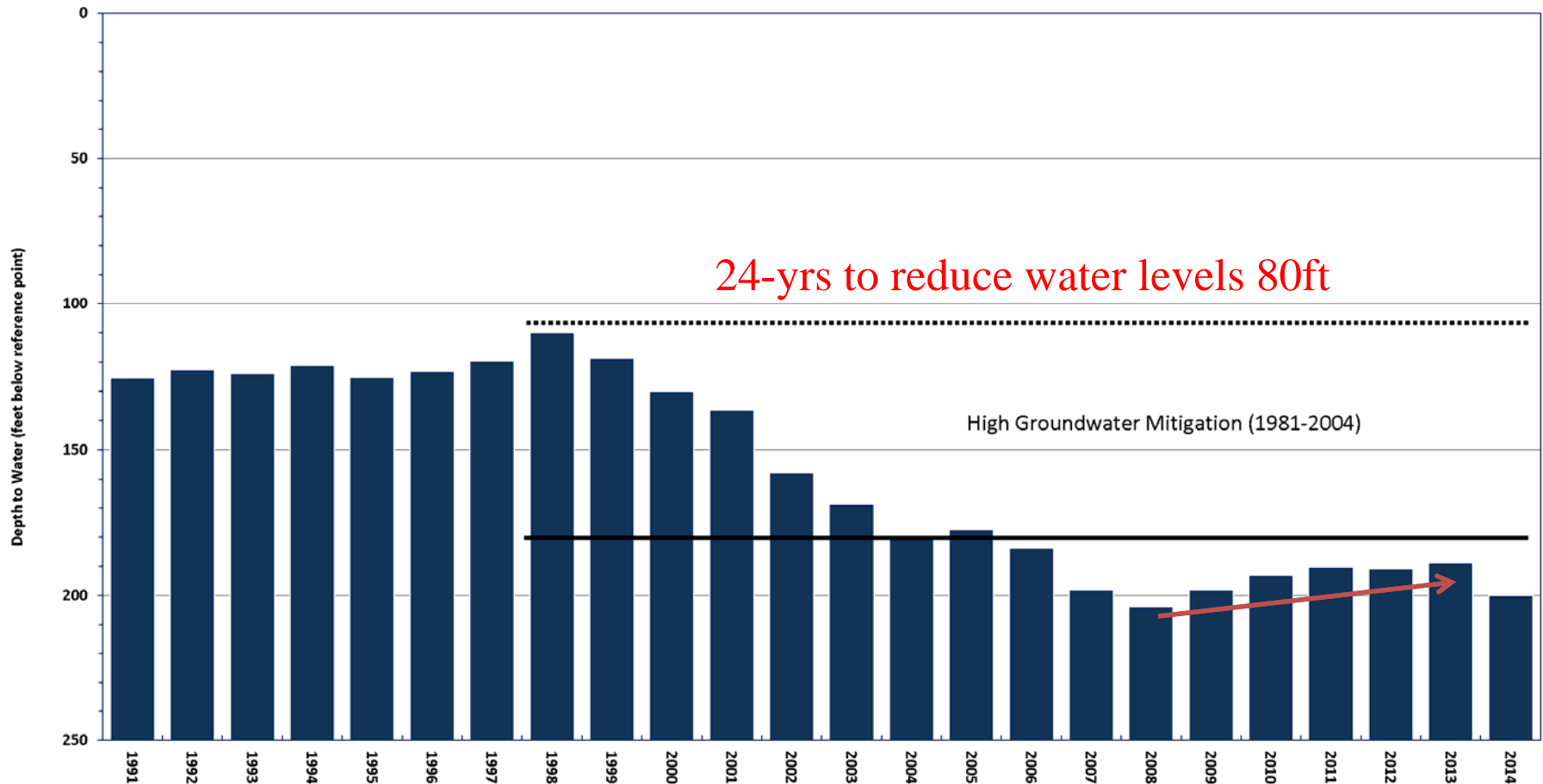


# Bunker Hill Basin

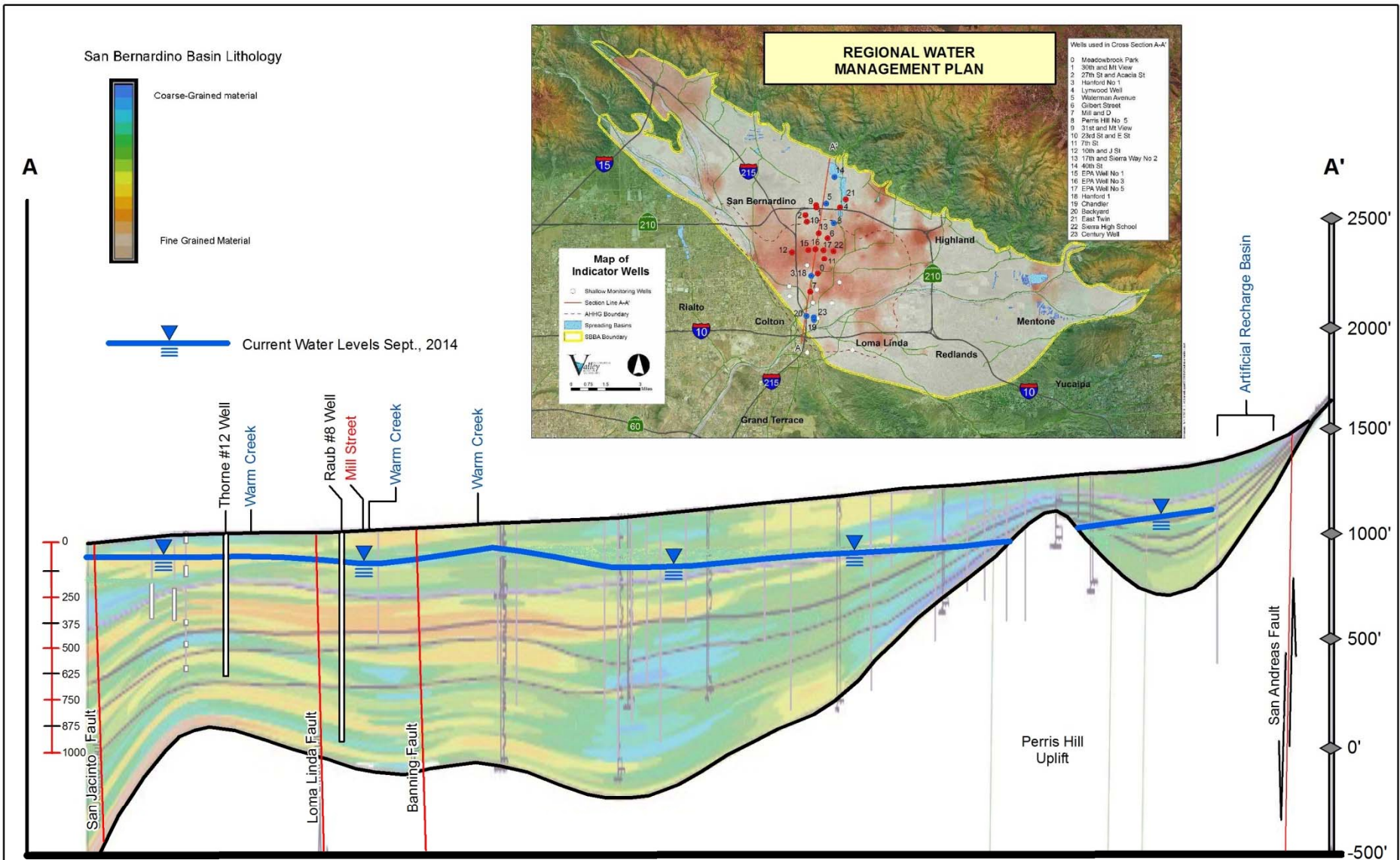
## Annual Groundwater Levels



# Bunker Hill Basin Annual Groundwater Levels



Levels trended upward from 2008 to 2013, during a time of below average hydrology



Section A-A' and stratigraphic base from Numeric Solutions, LLC.

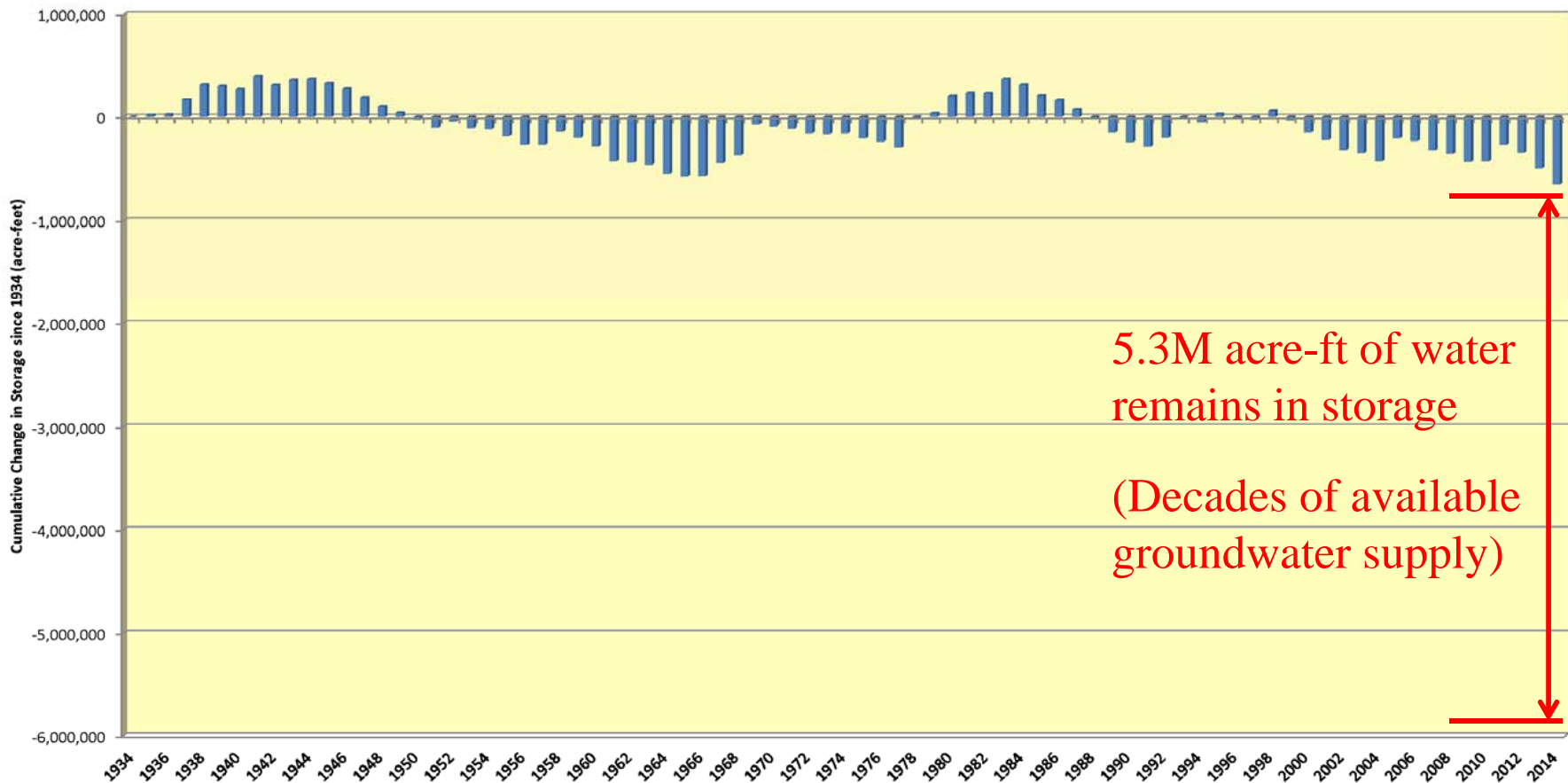
Well construction and water level data from the SBVMWD Water Resources Database

Created by: Riverside Public Utilities  
On: June, 2015

Water Resources



# Change in Storage Relative to Actual Basin Capacity



# Bunker Hill Supplies in Storage

- Total Storage Capacity: 5,976,000 acre-ft
- Estimated water stored in the basin: 5,300,000 acre-ft
- Average depth to bedrock: 1,200 ft
- Current water level: 210 ft below surface (depth varies across basin)
- Riverside's wells range in depth from 300 to 1,200 ft, with 80% of its wells greater than 500 ft
- No subsidence risk (2015 Engineering Investigation of the Bunker Hill Basin, San Bernardino Valley Water Conservation District)



# Robust Basin Management

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- 1969 Western-San Bernardino Judgment
  - Court appointed a Watermaster to oversee the physical solution
  - Annual reports filed with the Court
- Metered water production
- Daily water level monitoring
- Daily surface flow monitoring
- Monthly water quality monitoring

# Robust Basin Management (continued)

- Annual Change in Storage Report prepared by Valley District (SBVMWD)
- Annual Basin Engineering Investigation Report prepared by Conservation District (SBVWCD)
- Basin Technical Advisory Committee (BTAC)
  - Formed to collaboratively develop and evaluate projects that contribute to sustainable basin management
  - Meets monthly and is comprised of producers from the Bunker Hill Basin
- 3 Integrated Water Management Plans
- Started GSA process 7 years ahead of schedule

# 1969 Judgment

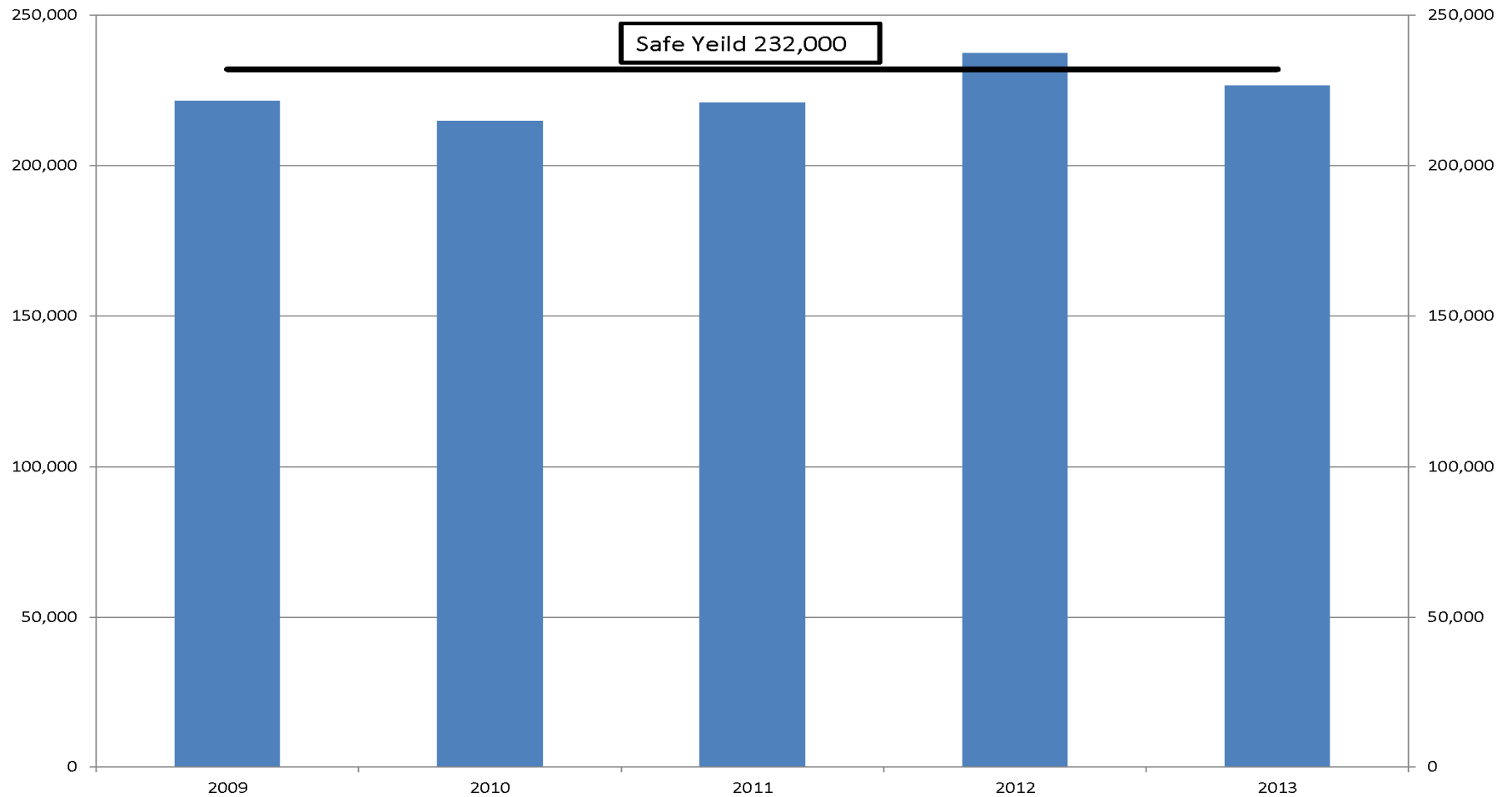
- The Western-San Bernardino Judgment and Orange County Judgment settled water right disputes within the Santa Ana River Watershed between some 4,000 parties.
- Groundwork for the Judgment begun in the 1950's, during a time of drought.
- The Judgment established a physical solution to resolve the water problems within the Santa Ana River Watershed and became the foundation to assure every entity received their fair share of water, in both wet and dry years.



# 1969 Judgment (continued)

- Western-San Bernardino Judgment
  - Established a Safe Yield for the Basin of 232,000 acre-ft/yr (about 4% of the basin's storage capacity)
  - Fixed export rights from Bunker Hill Basin for Riverside (use it or loss it)
  - Established certain obligations to maintain the integrity of the Bunker Hill, Rialto-Colton, Riverside North, and Riverside South basins
  - Court appointed Watermaster to enforce the Judgment
    - Collects & analyzes data, and conducts field inspections
    - Tracks groundwater extractions and distribution of extractions
    - Monitors stream flow, water quality & water levels
    - Prepares an annual report

# Bunker Hill Aggregate Extractions



Data from Table 3 and Vol. 1A of Western-San Bernardino Watermaster Report

(in acre-ft)

# Other Bunker Hill Basin Users

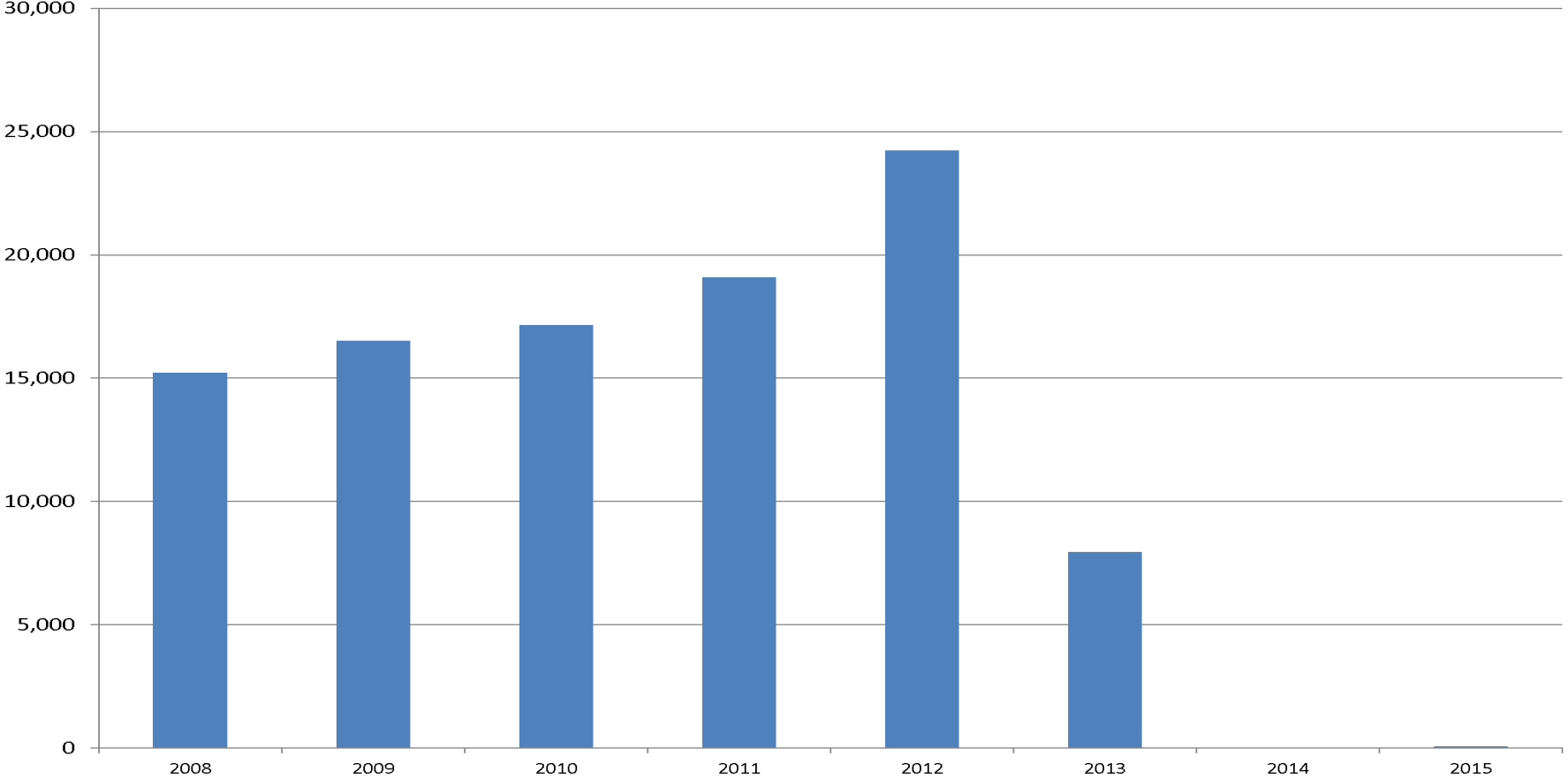
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- City of Colton
- City of Loma Linda
- City of Redlands
- City of Rialto
- City of San Bernardino Municipal Water District
- East Valley Water District
- Riverside Highland Water Company
- West Valley Water District

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# Imported Water Recharged in Bunker Hill



(in acre-ft)

# State's Groundwater Basin Priorities

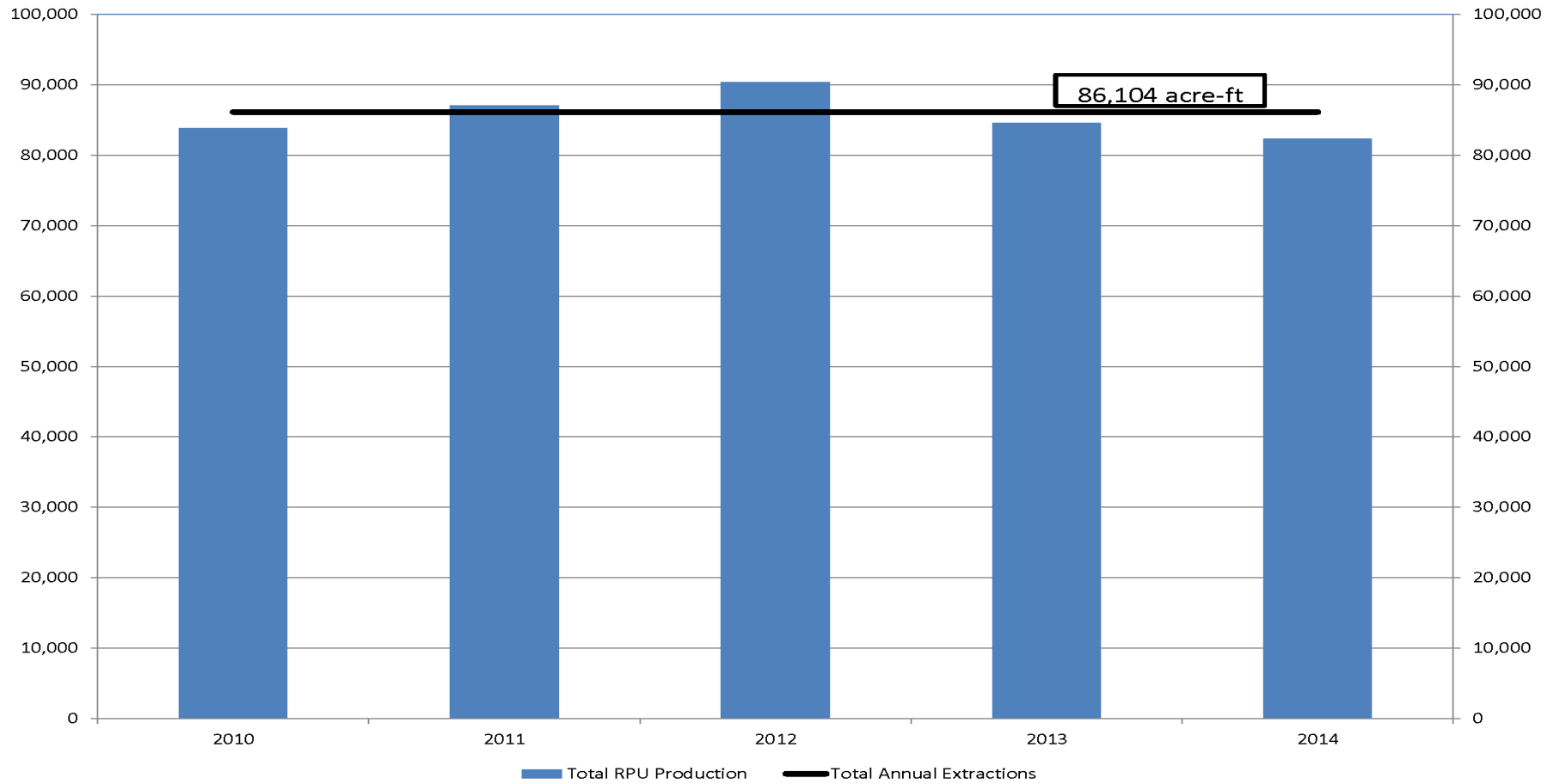
- CASGEM Basin Rankings
  - Bunker Hill & Riverside-Arlington: High Priority
  - Rialto-Colton: Medium Priority
- All basins have water quality impacts, declining water levels, and large populations.
- Response to Rankings
  - Riverside measures 16 wells seasonally
  - All contaminates plumes have/are being remediated with treatment
  - 1969 Judgment assists to manages the basins by requiring specific obligations and assurances.
  - Water levels relatively stable over last 10 years

# Riverside's Water Rights Summary

Available Extraction and Export Rights		
Basin	Annual Extraction (acre-feet)	
San Bernardino Basin Area <sup>1</sup>	55,145	*0.9% of basin storage
Rialto-Colton	2,728	
Riverside North	11,351	
Riverside South	16,880	
<b>Total</b>	<b>86,104</b>	

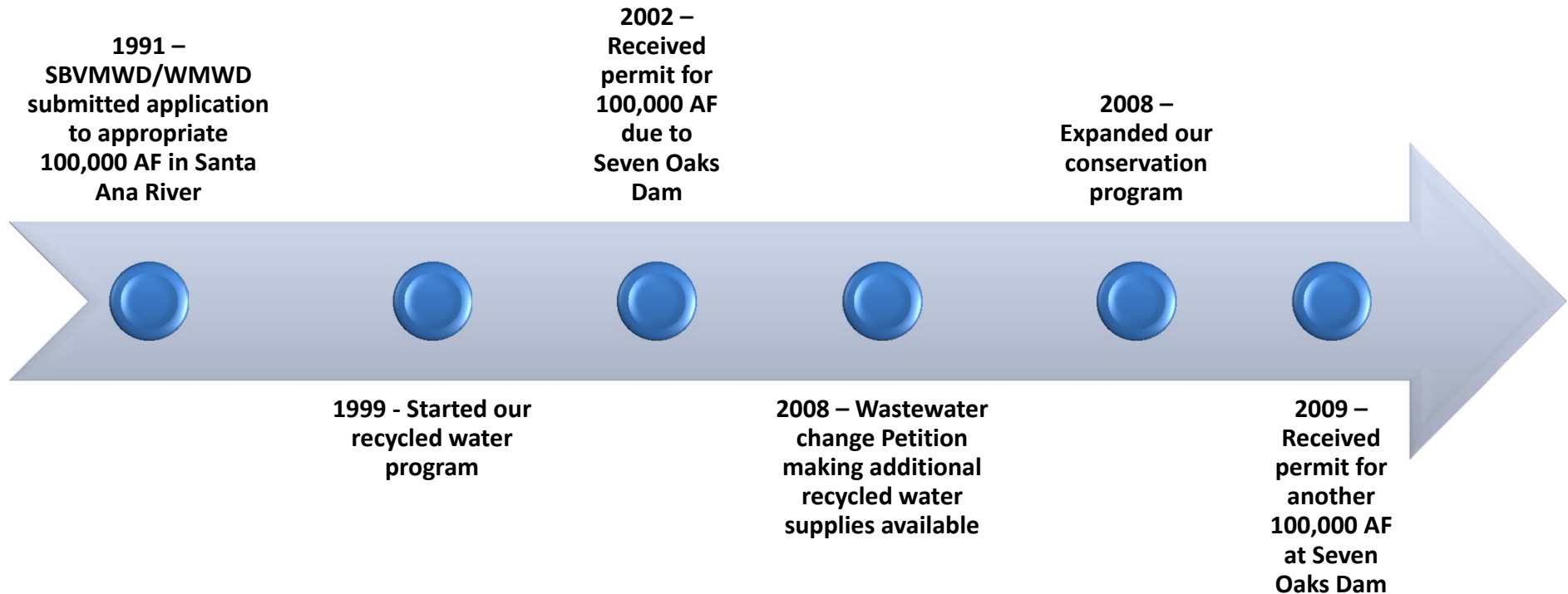
1) Includes New Conservation from Seven Oaks Dam

# Riverside Annual Total Production



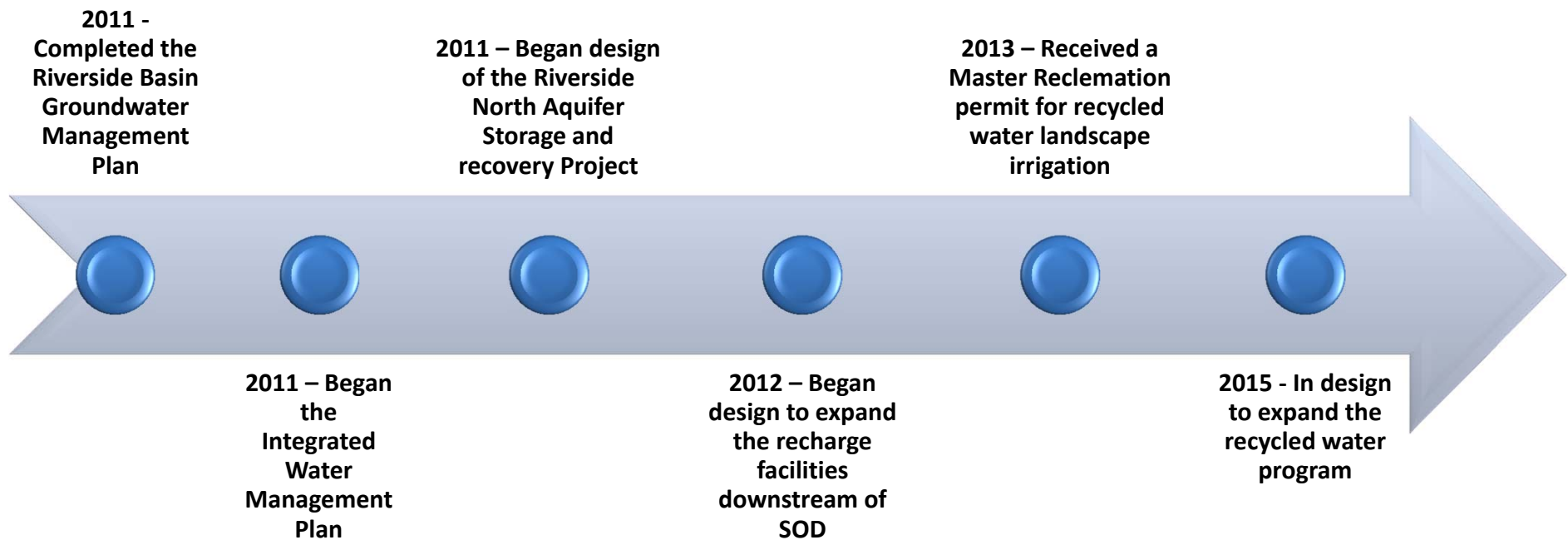
(in acre-feet)

# Riverside's Investment in Local Supplies





# Riverside's Investment in Local Supplies



**Riverside has invested \$100M in its capital investment campaign**

**Riverside intends to invest an additional \$30M in expanded conservation, recycled water & stormwater capture to remain imported water independent**

[RiversidePublicUtilities.com](http://RiversidePublicUtilities.com)



# Future Water Supply

- Enhanced Recharge at Seven Oaks Dam
- Active Recharge in the San Bernardino Basin Area
- Riverside North Aquifer Storage and Recovery Project
- Riverside Basin Storm Water Capture
- Recycled Water
- Upper Santa Ana River Habitat Conservation Plan

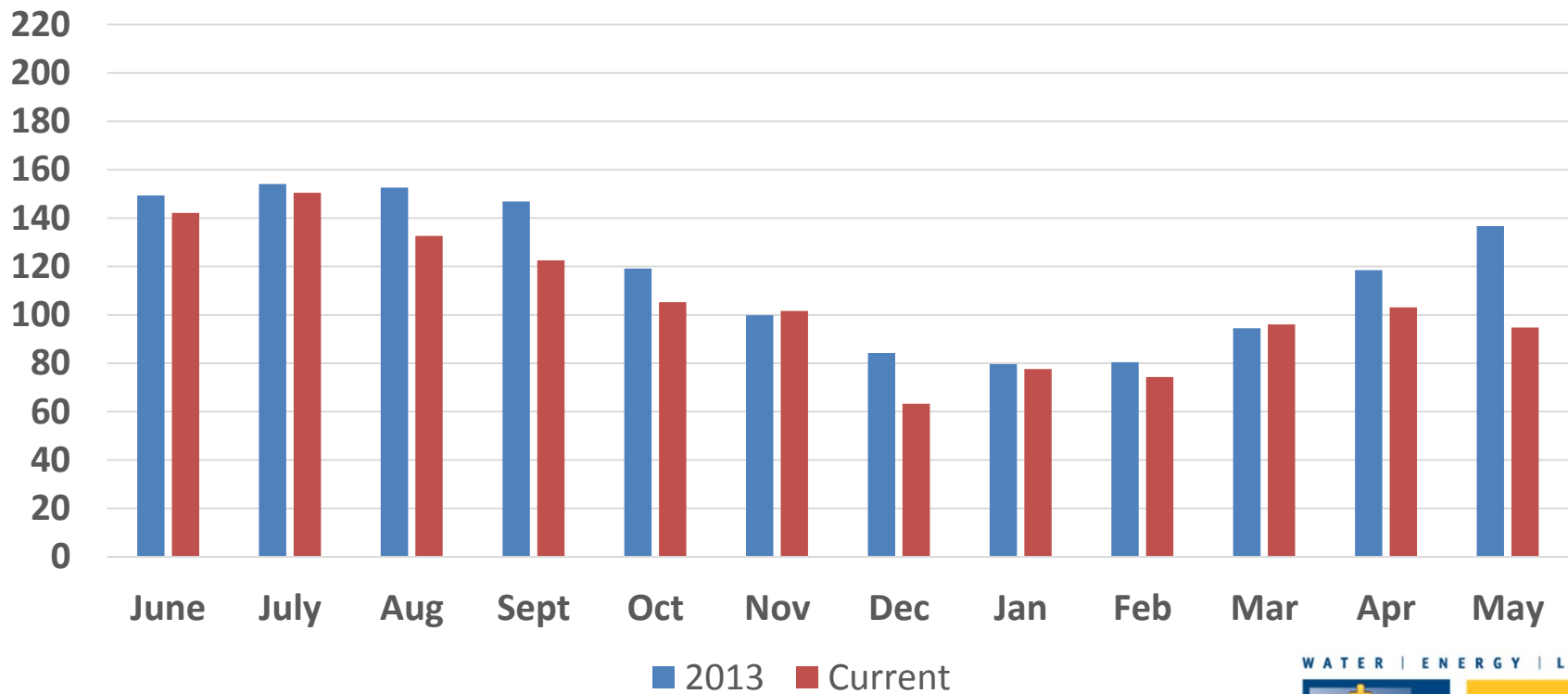


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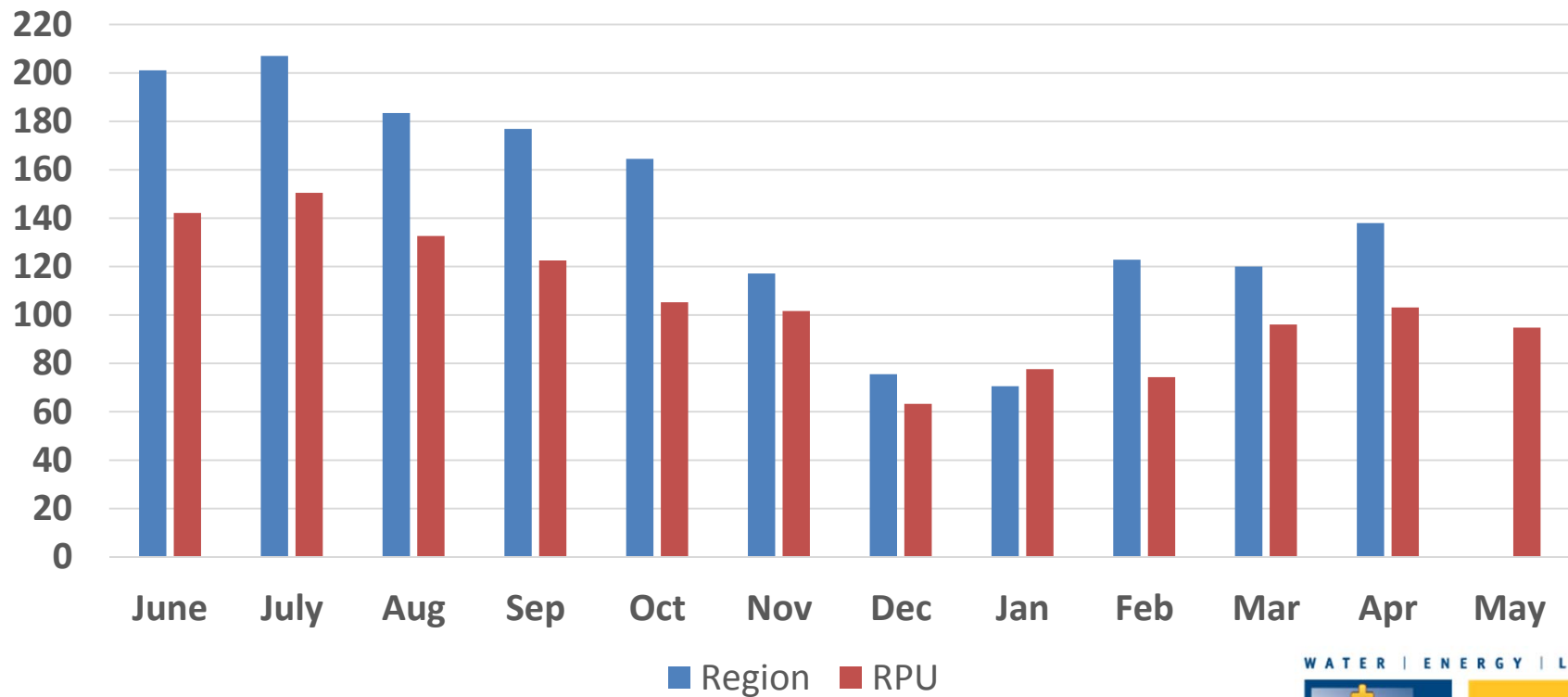
# Riverside Water Conservation Results

## Residential per capita water use 2013 v. Current



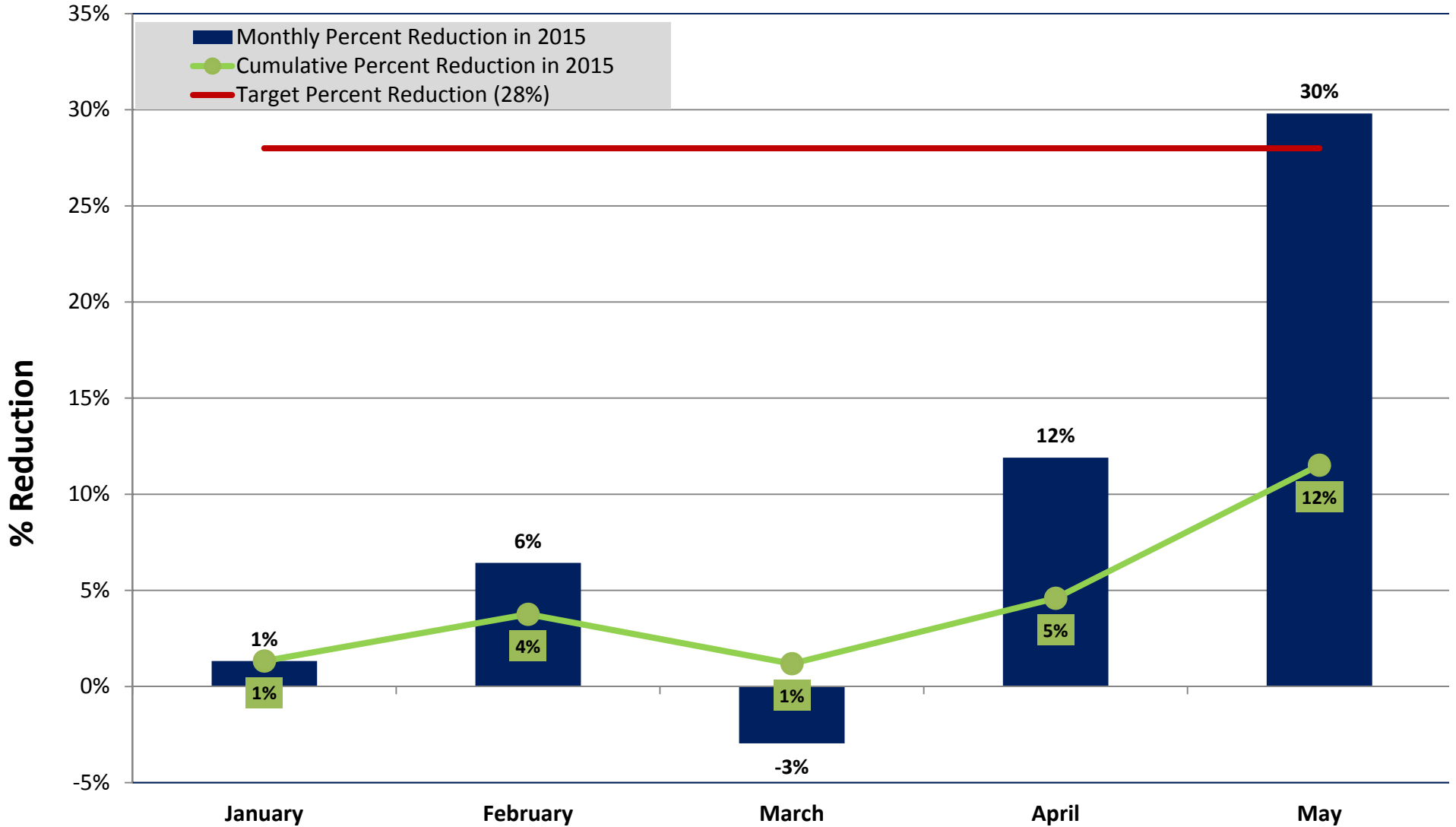
# R-GPCD Tracking Comparison

Riverside residential per capita water use v. Region

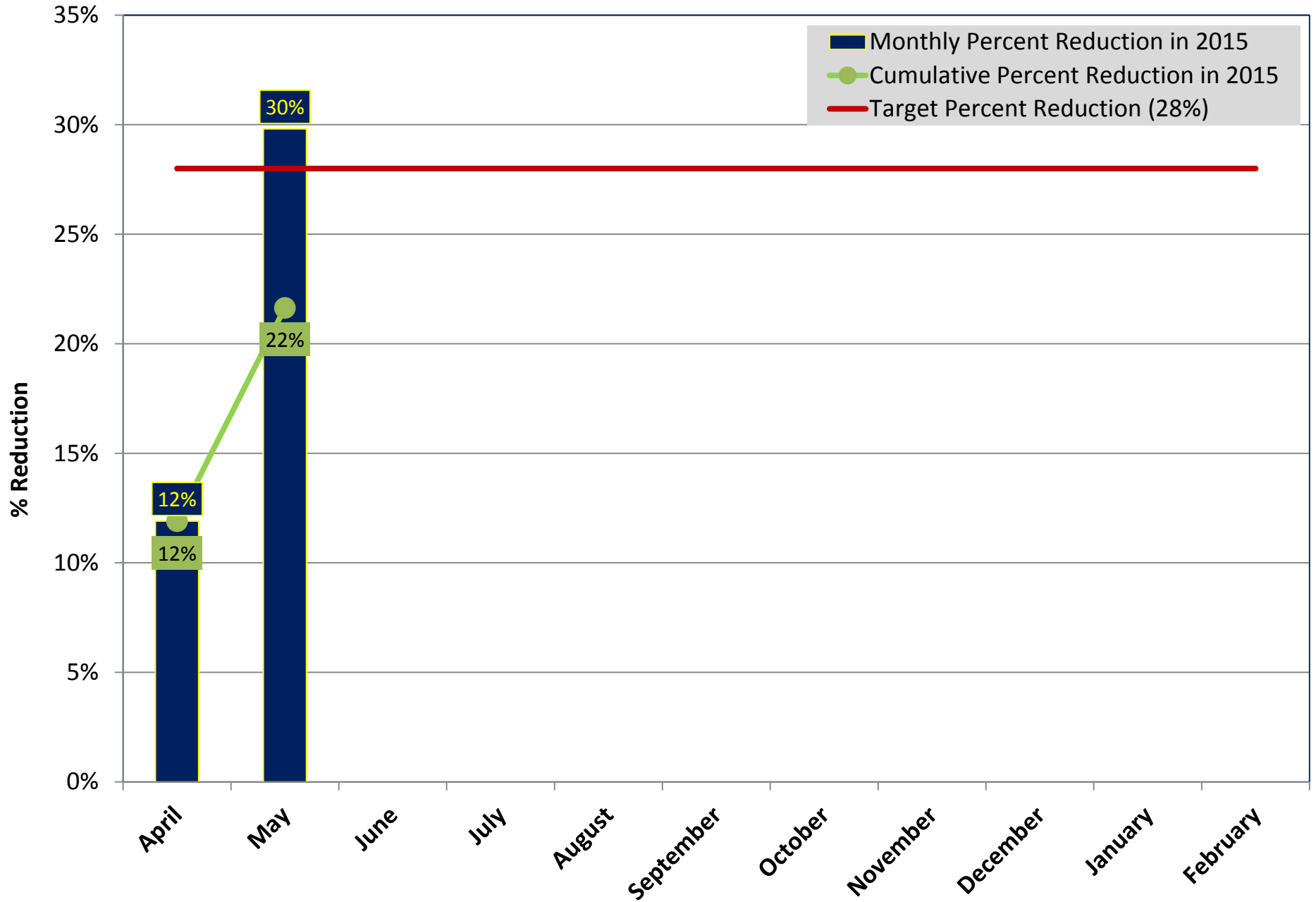


# 2015 Water Conservation Tracking

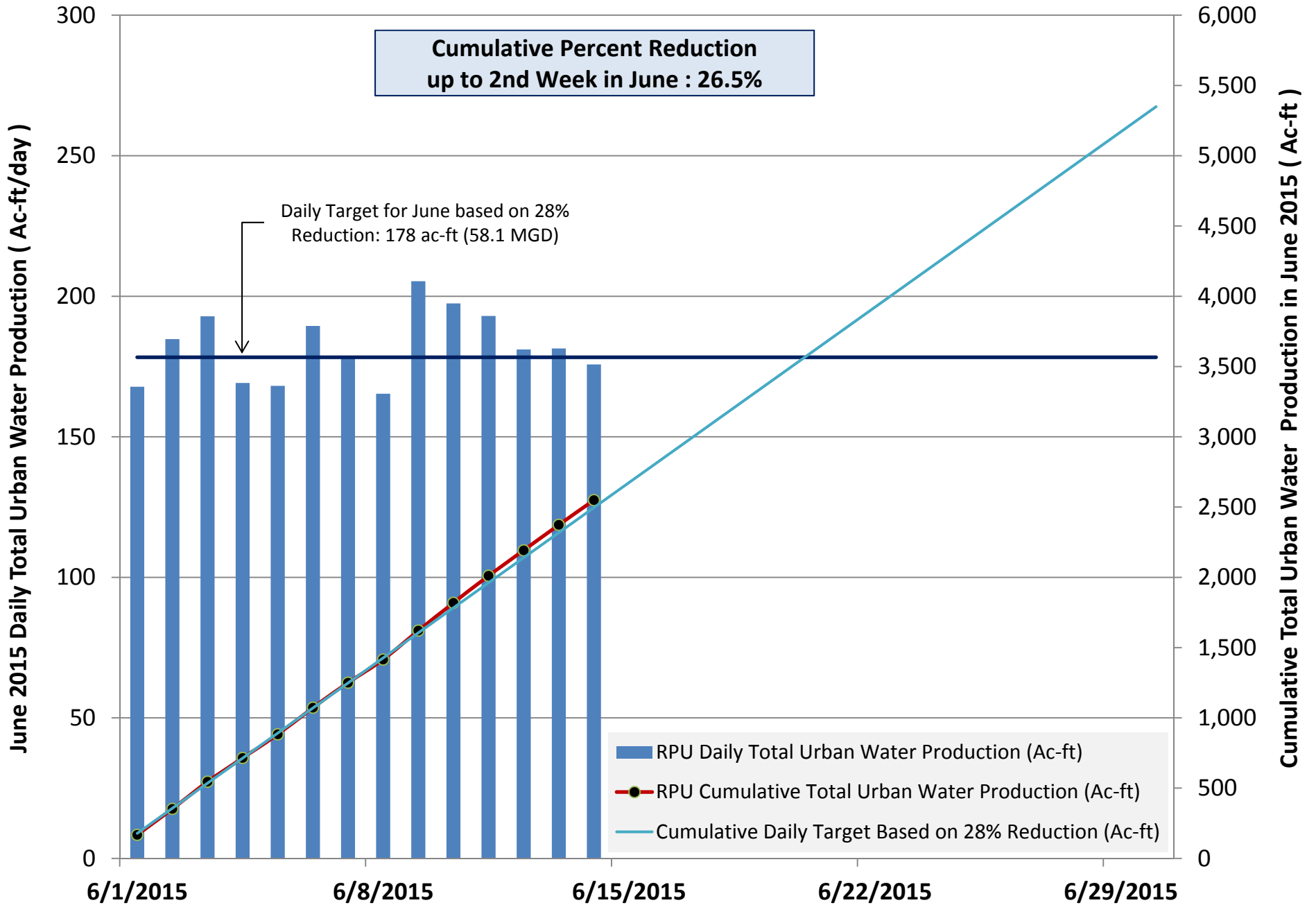
RPU Total Urban Water Production Saving for 2015 Compared to 2013 Benchmark



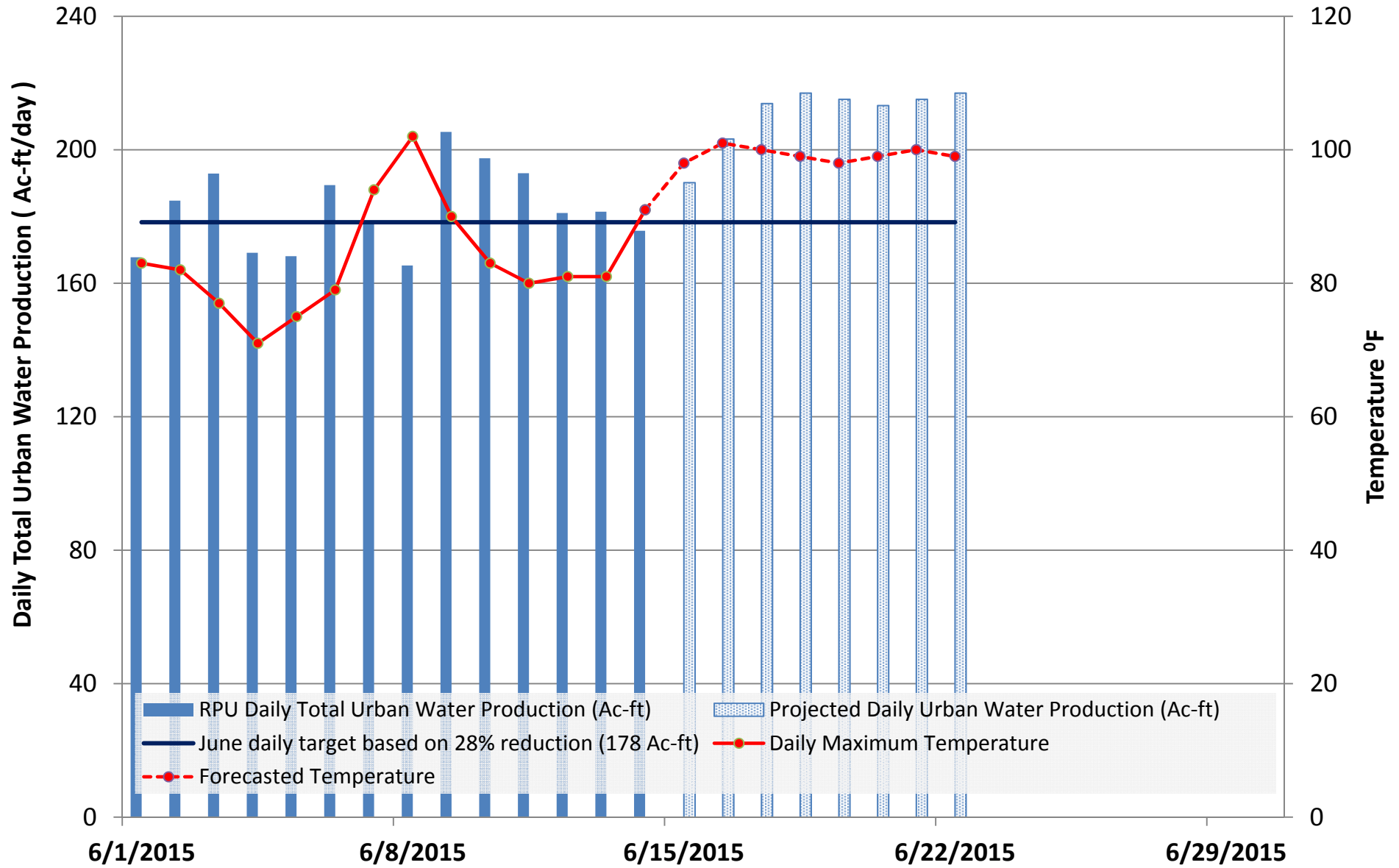
### RPU Total Urban Water Production Saving for 2015 Compared to 2013 Benchmark



## RPU Daily Total Urban Water Production Tracking in June 2015

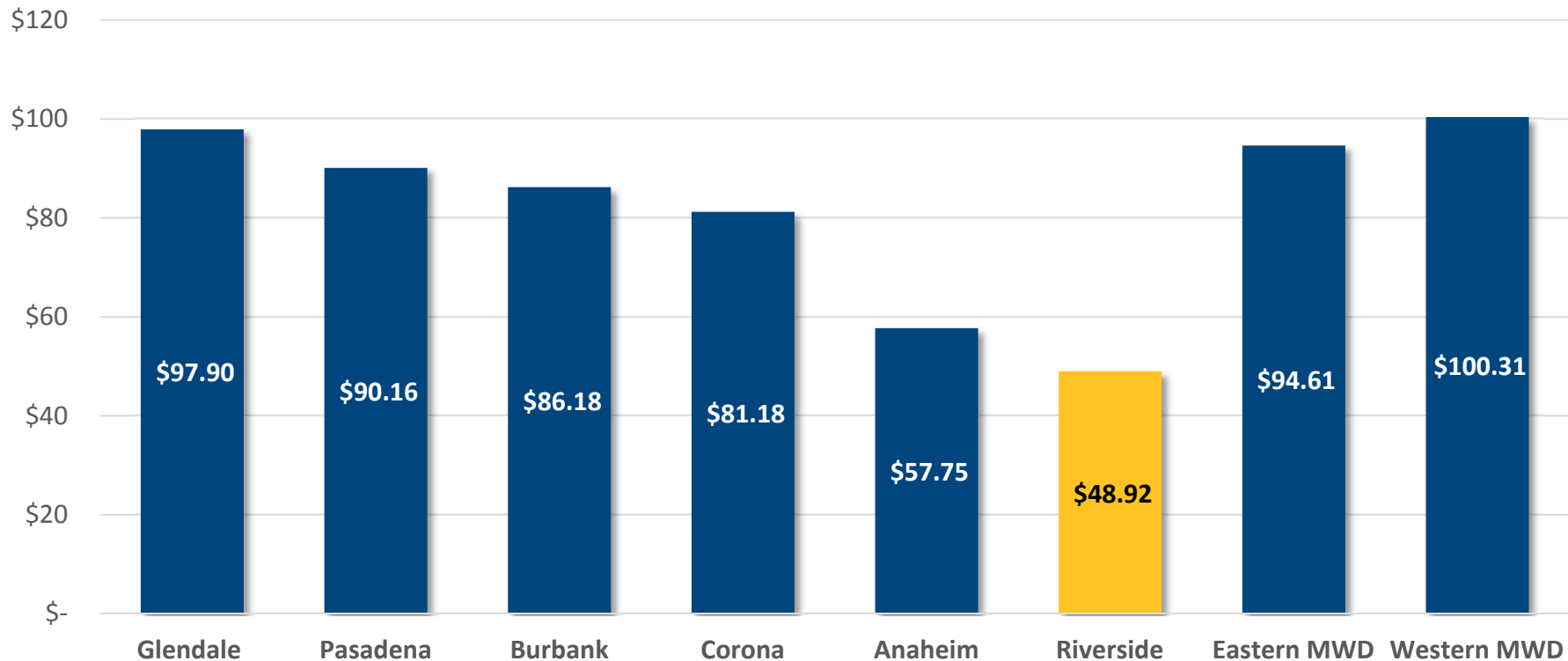


# Predicted RPU Daily Total Urban Water Production





# Riverside's - Water Rate Comparison



**AVERAGE RESIDENTIAL RATE FOR 25 CCF PER MONTH  
(AS OF SEPT. 30, 2014)**

[RiversidePublicUtilities.com](http://RiversidePublicUtilities.com)



# Rationale for 4% Tier

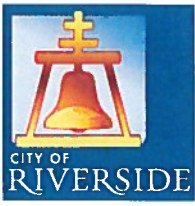
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- Minimum of 4 years of supply
  - The Bunker Hill Basin has decades of groundwater in storage, approximately 5,300,000 acre-feet
- Do not rely on imported water
  - Independent of Imported water since 2008
- Groundwater supplies recharge naturally
  - Western-San Bernardino Judgment established a safe yield of 232,100 acre-feet

# Rationale for 4% Tier (continued)

In Addition:

- Riverside has Fixed Water Rights per the 1969 Western - San Bernardino Judgment
- Bunker Hill Basin has stable groundwater conditions
- 80% of our wells in Bunker Hill are constructed deeper than 500 ft
- Watermaster and Riverside have been sustainably managing the basins for more than 50 years (through varying hydrologic conditions)



*City of Arts & Innovation*

July 2, 2015

Ms. Caren Trgovcich, Chief Deputy Director  
State Water Resources Control Board  
1001 I Street, 16<sup>th</sup> Floor  
Sacramento, CA 95814

**RE: CITY OF RIVERSIDE'S CONSERVATION TIER PROPOSAL**

Dear Ms. Trgovcich:

This letter contains the City of Riverside's proposed criteria to amend the State Water Resources Control Board's (State Board's) recently adopted emergency regulations in response to the drought, and also contains the additional data and information which we believe qualifies us for a 4% conservation tier. We look for guidance from the State Board as to how to best process the City's request to be placed in a 4% conservation tier that would only apply to groundwater.

First, however, let me begin by thanking you, Mr. Oppenheimer, and Mr. Rose for making yourselves available to meet with us on June 18th. We were encouraged by the dialogue and the constructive efforts during the meeting, and we appreciate the opportunity to show why Riverside, even though it is groundwater-based, can be allowed to qualify for a 4% conservation tier within the spirit and intent of the emergency regulations.

We believe that Riverside is sufficiently different than likely any other urban water provider, that amending the regulations could be done without compromising real water conservation, and without revisiting the issue with every other groundwater-based supplier, for the following reasons:

- 1) Riverside draws its water from an adjudicated basin, where all extracting parties' rights are represented. No extractor will be blind-sided, or unaccounted-for. This protects all the users.
- 2) The San Bernardino Basin area system (Bunker Hill, Rialto-Colton, and Riverside North and South basins) was adjudicated in 1969, over 45 years ago. The adjudication action was filed in 1963, over 50 years ago. The two Watermasters and the various agencies have large quantities of robust, reliable data. This addresses the State Board's concern over groundwater data uncertainty.
- 3) The basins have deep reserves. Far beyond the four years reserve minimum for surface water suppliers to qualify for the four-percent conservation tier.
- 4) The basins are naturally recharging with stable water levels. In fact, the Bunker Hill basin has been intentionally dewatered through over-production to address liquefaction and flooding concerns.
- 5) The basins do not rely upon imported water. What negligible amount which was imported was done as a mathematical calculation, and not as a response to actual groundwater overdraft.
- 6) Riverside's use has no impact whatsoever on the decision to import any water. Whether Riverside extracts all or none of its allocated share, will have no legal or physical effect on triggering any imported water recharge.

- 7) Riverside's rights are non-transferable and exclusive. Whether Riverside extracts all or none of its allocated share, will have no legal or physical effect on any other user's right or ability to extract.
- 8) While other users in the basins have the same non-transferable, exclusive rights as Riverside, none of those users are independent of the State Water Project system.
- 9) The Bunker Hill parties operate under an Annual Basin Management Plan.
- 10) The regional agencies have developed and approved Integrated Regional Water Management Plans.
- 11) Riverside has entered into a number of settlement agreements with various entities related to contaminants such as perchlorate, TCE, and DBCP. Under the terms of the settlement agreements, the defendants fund Riverside's removal of contaminants from groundwater in local water basins. Removal of the contaminants benefits not only Riverside but surrounding water agencies, as removal prevents the travel of the plumes of contaminants.
- 12) Riverside's GPCD use is lower than other water agencies in its region, despite relatively low cost. That demonstrates Riverside's early and real efforts to conserve. Riverside has been, and remains, a responsible water supplier.

The above reasons demonstrate why Riverside is uniquely situated to conserve at a 4% rate without adversely affecting State water supplies and the stated goals of water conservation. If requested by the State Board, Riverside can provide additional data and documentation supporting the above-noted facts. At our meeting on June 18, we provided an overview of these facts.

Again, we look for guidance from the State Board as to how to best place Riverside in a 4% conservation tier. As we previously discussed, Riverside proposes the following amendment to the section 865(c)(2) of the "Adopted Text of Emergency Regulation" to accommodate Riverside's placement into a 4% conservation tier.

*(c)(1) To prevent the waste and unreasonable use of water and to meet the requirements of the Governor's April 1, 2015 Executive Order, each urban water supplier shall reduce its total potable water production by the percentage identified as its conservation standard in this subdivision. Each urban water supplier's conservation standard considers its service area's relative per capita water usage.*

*(2) Each urban water supplier whose source of supply does not include groundwater or water imported from outside the hydrologic region in which the water supplier is located, and that has a minimum of four years' reserved supply available may, submit to the Executive Director for approval a request that, in lieu of the reduction that would otherwise be required under paragraphs (3) through (4)(11), the urban water supplier shall reduce its total potable water production by 4 percent for each month as compared to the amount used in the same month in 2013. Any such request shall be accompanied by information showing that the supplier's sources of supply do not include groundwater or water imported from outside the hydrologic region and that the supplier has a minimum of four years' reserved supply available.*

*(3) Each urban water supplier whose source of supply does include groundwater, but not water imported from outside the hydrologic region in which the water supplier is located, and that has a minimum of eight years' reserved supply available may, submit to the Executive Director for approval a request that, in lieu of the reduction that would otherwise be required under paragraphs (4) through (11), the urban water supplier shall reduce its total potable water production by 4 percent for each month as compared to the amount used in the same month in 2013. Any such request shall be accompanied by information showing that the supplier's source of supply do not include water imported from outside the hydrologic region and that the supplier has a minimum of eight years' reserved supply available.*

*(34) Each urban water supplier whose average July-September 2014 R-GPCD was less than 65 shall reduce its total potable water production by 8 percent for each month as compared to the amount used in the same month in 2013.*

*(45) Each urban water supplier whose average July-September 2014 R-GPCD was 65 or more but less than 80 shall reduce its total potable water production by 12 percent for each month as compared to the amount used in the same month in 2013.*

*(56) Each urban water supplier whose average July-September 2014 R-GPCD was 80 or more but less than 95 shall reduce its total potable water production by 16 percent for each month as compared to the amount used in the same month in 2013.*

*(67) Each urban water supplier whose average July-September 2014 R-GPCD was 95 or more but less than 110 shall reduce its total potable water production by 20 percent for each month as compared to the amount used in the same month in 2013.*

*(78) Each urban water supplier whose average July-September 2014 R-GPCD was 110 or more but less than 130 shall reduce its total potable water production by 24 percent for each month as compared to the amount used in the same month in 2013.*

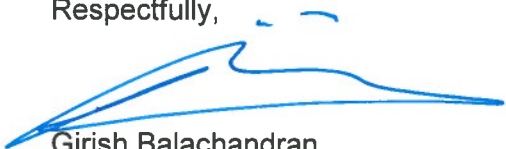
*(89) Each urban water supplier whose average July-September 2014 R-GPCD was 130 or more but less than 170 shall reduce its total potable water production by 28 percent for each month as compared to the amount used in the same month in 2013.*

*(910) Each urban water supplier whose average July-September 2014 R-GPCD was 170 or more but less than 215 shall reduce its total potable water production by 32 percent for each month as compared to the amount used in the same month in 2013.*

*(1011) Each urban water supplier whose average July-September 2014 R-GPCD was 215 or more shall reduce its total potable water production by 36 percent for each month as compared to the amount used in the same month in 2013.*

We look forward to a discussion that will bring this matter to resolution in the very near future. Please contact me directly at 951-826-8912 to discuss our next steps.

Respectfully,



Girish Balachandran  
Riverside Public Utilities General Manager

GB/cef: PUGM-015-010\_Letter to State Board

c: John A. Russo, Riverside City Manager  
Kevin S. Milligan, Deputy General Manager  
Anthony Beaumon, Deputy City Attorney  
Eric Oppenheimer, SWRCB