



SAN LUIS OBISPO COUNTY
DEPARTMENT OF PUBLIC WORKS

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Memorandum

Date: October 2, 2014
To: Dan Buckshi, County Administrative Officer
From: Mark Hutchinson, Deputy Director
VIA: Dave Flynn, Interim Director of Public Works
Subject: County Water Systems One Year Look-Ahead

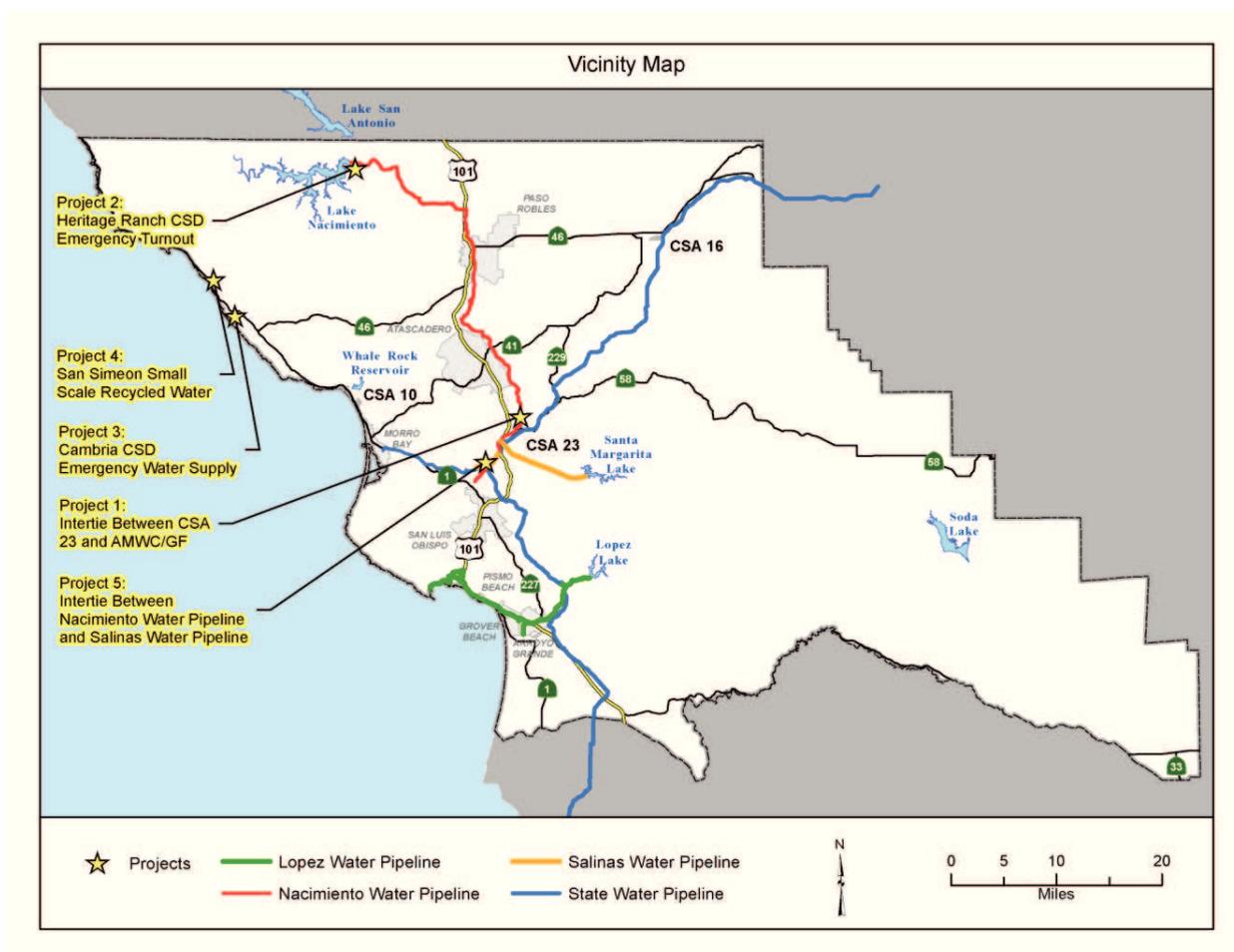
Introduction

The purpose of this summary memorandum is to provide an update and outline of the Department of Public Works' approach to managing, over the next twelve months, County operated water systems and related issues. This overview provides an update to our memo of August 28, 2014.

The State Drought Monitor shows that all of California remains in drought conditions, with the central part of the state in Exceptional Drought conditions. The National Weather Service's three month temperature and precipitation forecasts predict a higher chance of above normal temperatures, and an "Equal Chance" of above or below normal rainfall, for the central coast. Therefore, our approach is based on a continuation of the drought at its current extent and depth. At the same time, our plans need to remain flexible as conditions and assumptions will likely change. Key variables include precipitation amounts both locally and statewide, the condition of local groundwater sources and delivery systems, water related infrastructure conditions, and local water use rates.

The following describes the systems, issues, plans, and concerns for each of the major sub regions of the County where the Department of Public Works provides either retail or wholesale water supply services, followed by a State Water delivery discussion, the status of efforts in the Chorro Valley, and recent relevant legislative proposals and water regulations.

Attachment 6



A. South County

The County operates the Lopez Water system as Zone 3 of the Flood Control and Water Conservation District (District). County Service Area 12 is a Zone 3 contractor and in turn subcontracts water in the Avila Beach and Avila Valley area. All other water systems in the south county are managed by incorporated cities, Community Services Districts (CSDs), and private entities.

The Zone 3 system stores, treats and deliveries an average of 4,530 acre feet of potable urban water annually, as shown in the table below. Downstream releases of 4,200 acre feet per year into Arroyo Grande Creek account for 48% of the reservoir's 8,730 acre feet per year safe yield.

Attachment 6

ZONE 3 WATER PROJECT CONTRACTORS		
Contractor	Entitlement in Acre Feet/Year	% Share
City of Arroyo Grande	2,290	26
City of Pismo Beach	896	10
City of Grover Beach	800	9
Oceano Community Services District	303	3
County Service Area 12 (Avila & Avila Valley)	241	3
Sub Totals	4,530	52
Downstream Releases	4,200	48
Total	8,730	100

In addition, the County delivers up to 2,392 acre feet per year of State Water to six contractors through the Lopez distribution system.

SOUTH COUNTY STATE WATER SUB CONTRACTORS	
Contractor	Entitlement in Acre Feet/Year
City of Pismo Beach	1,240
Oceano Community Services District	750
San Miguelito Mutual Water Company	275
Avila Beach Community Services District	100
Avila Valley Mutual Water Company	20
San Luis Coastal Unified School District	7
Total	2,392

Issues

The south county relies on three primary water sources: groundwater, surface water captured and stored in the Lopez Reservoir, and State Water. In the Nipomo mesa area, where the primary water purveyor is the Nipomo CSD, the only supply for the various water companies and individual private landowners is groundwater, drawn almost exclusively from the Santa Maria Groundwater Basin. The recent adjudication of the Basin concluded that additional water was needed in the Nipomo Mesa area to offset higher rates of groundwater pumping, however, a project to move water from the Santa Maria area to the Nipomo Mesa is not yet completed. There is some evidence of a groundwater level decline under the Mesa that may be affecting groundwater levels in the lower Arroyo Grande valley area.

Attachment 6

Plans

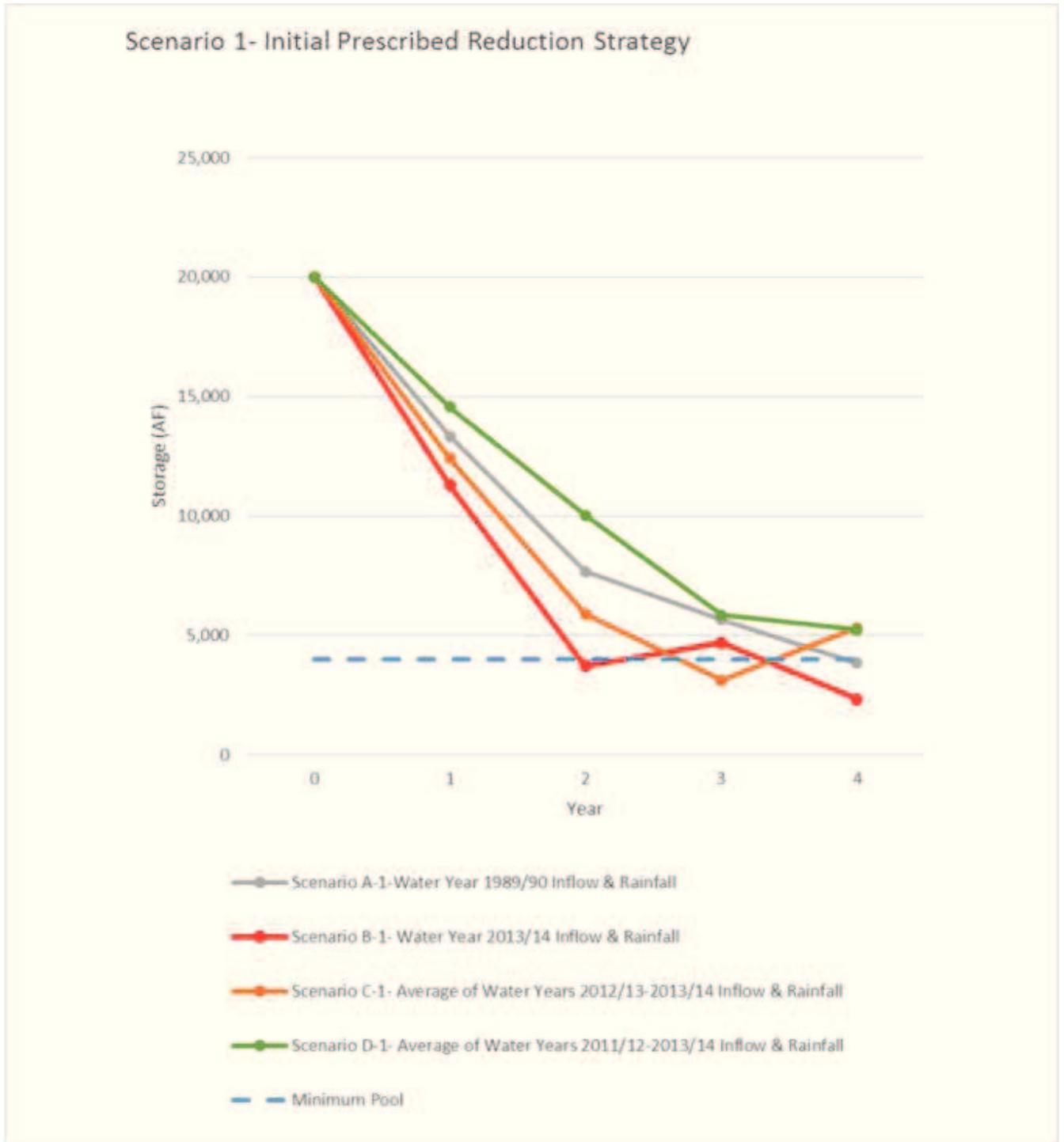
In recent years the urban agencies in Zone 3 have required approximately 8,250 acre feet of water per year (15% groundwater, 25% State Water, 60% Lopez Water). In response to declining groundwater levels, the Zone 3 member agencies have proposed reducing their groundwater pumping to the greatest degree possible in order to protect the groundwater basin from seawater intrusion. Lopez Lake is currently just under 45% of storage capacity, and over the past five years has delivered a total of 2,327 acre feet below the annual safe yield (that is, 2,327 acre feet of water has been saved in the lake over the last five years). In response, the Board of Supervisors has made the entire 2,327 acre feet of additional water available to Zone 3 agencies. At the same time the agencies will have exhausted the majority of their State Water supplies (see following section on State Water).

The current approach is to maximize deliveries from Lopez Lake to the Zone 3 agencies. Also, the District has sufficient "carryover" State Water to meet the majority of the agencies' normal State Water allotments. The combination of additional Lopez supplies, District carryover State Water, and continued and enhanced conservation on the part of the community should meet Zone 3 needs for the coming year.

Looking beyond the current water year, the District and the Zone agencies are finalizing work on the Low Reservoir Response Plan (LRRP). The describes a set of actions that the District will implement when the amount of water in storage within the Lopez Reservoir drops below 20,000 Acre-Feet (AF) provided that the District's Board of Supervisors has declared an emergency related to Zone 3. The purpose of the LRRP is to limit downstream releases and municipal diversions from Lopez Reservoir during periods of low reservoir storage (i.e. less than 20,000 AF) to preserve water within the reservoir, above the minimum pool level, for a minimum of 3 to 4 years under continuing drought conditions. The Public Review Draft LRRP has been reviewed by the Zone 3 Advisory Committee and is currently being presented to each of the Zone 3 entities for review and/or approval. Once the member agencies have acted the responses from the agencies be reviewed by the Advisory Committee which will then formulate a recommendation to the Board of Supervisors.

The following graph illustrates the response of reservoir storage to four different weather scenarios, each taken from actual conditions during the current and past (1987-92) drought periods. The line graph includes reductions in both municipal deliveries and downstream releases. It can be seen that relatively small variations in weather conditions can have more dramatic effects on the rate of decline and total storage volume in the reservoir. Consequently, the LRRP includes a robust adaptive management strategy to allow the District to rapidly respond to relatively small variations in reservoir inflow.

Attachment 6



Concerns

It is not clear at this time if the Lopez pipeline distribution system is capable of delivering the full amount of additional water needed. In 2013/14 the system was able to deliver 750 acre feet above entitlements; it remains to be seen if amounts above 2,000 are achievable. If not, then the default is additional conservation and/or additional groundwater pumping.

Downstream releases from Lopez Dam, necessary to supply agricultural, groundwater recharge, and environmental demands, have averaged 3,800 acre feet over the last five years. Volumes below this amount would have immediate impacts on agricultural irrigation between the dam and the City of Arroyo Grande, as the groundwater basin is typically very shallow.

Should drought conditions continue unabated into 2016, State Water would likely be unavailable due to anticipated future deliveries set at zero, most carryover supplies exhausted, and/or the ability to operate the system to deliver small volumes. Lopez Lake is projected to be at near 10,000 acre feet in storage at the end of 2015 (6,000 acre feet deliverable). Groundwater levels will have continued to decline, although at a slower rate. Consequently, Zone 3 agencies would require the highest level of water conservation and be dependent on higher groundwater pumping rates, with an attendant higher potential for groundwater intrusion.

B. Coastal

The County operates the Cayucos Water Treatment Plant in Cayucos as County Service Area 10 (CSA10). The plant treats water for local water purveyors, including the Morro Rock Mutual Water Company, the Paso Robles Beach Water Association, County Service Area 10A (CSA10A), and other smaller entities. CSA10A delivers water to the southern portion of the community of Cayucos.

Other water systems in the coastal area are operated by public and private entities, including the San Simeon Community Services District, the Cambria Community Services District, the City of Morro Bay, the Los Osos Community Services District, Golden State Water Company, and S&T Mutual Water Company.

Issues

The County operated CSA10 Water Treatment Plant and CSA10A water distribution systems are operating efficiently and supplying all necessary water amounts. Water is provided by Whale Rock Reservoir, and from the Nacimiento Water project via an exchange agreement with the City of San Luis Obispo. Whale Rock Reservoir is at 48% total storage with about 18,600 acre feet. Total water demand in Cayucos is under 350 acre feet per year.

Attachment 6

Plan

CSA10A per capita water use rates are among the lowest in the County at 75 gallons per day (Statewide average is 197, central coast average is 147). The current approach is to continue water conservation programs and move ahead with the new water storage tank. Your Board implemented new State requirements for limited outdoor watering to two days a week at your August 19, 2014 meeting.

Concerns

Several other water systems in the coastal area have severe water supply conditions. Both San Simeon and Cambria have rigorous water conservation measures in place, and both are seeking funding for emergency water supply projects through the Integrated Regional Water Management Plan grant program.

The City of Morro Bay is dependent on imported water from the State Water project, with a sea water desalination plant as emergency backup. The City has more than adequate supplies in storage in the State Water project, but the ability of that system to deliver relatively small amounts of water in 2016 is uncertain.

Los Osos is entirely dependent on groundwater, with ongoing seawater intrusion posing a supply threat. A draft groundwater management plan has been developed, but not yet adopted or implemented by the three water purveyors in the community. In addition, the plan may be subject to the requirements of the recent groundwater legislation.

The County's ability to provide water supply options to coastal areas other than Cayucos is nearly non-existent as there are no infrastructure connections between these communities and any available alternate supplies.

C. North County

The County operates two retail and two wholesale water systems in the north County. The two retail water systems are County Service Area 16 (CSA16) in Shandon and County Service Area 23 (CSA23) in Santa Margarita. The two wholesale systems are the Nacimiento Water Project and the Salinas Water Project.

Issues

CSA16 in Shandon is dependent entirely on groundwater. A new water tank and water system loop connections completed since the late 1990's provide system reliability. No issues are projected for CSA16 in the coming year(s). CSA23 in Santa Margarita is dependent entirely on groundwater. A new water tank and water system upgrades recently completed provide system reliability. However, local groundwater supplies are limited. The community is currently on "alert" status, with water conservation strongly encouraged. Two of the four established "triggers" required to move the community to higher conservation levels (elimination of all outdoor water use) were met in late September. In response,

Attachment 6

system operators are shifting some demand from the primary well to the back-up well. With this change, and the conclusion of the major event held at the Santa Margarita Ranch, the community may weather a dry fall season. However, in the event well levels continue to fall, actions to require reduced water use will be brought before the Board for adoption. An intertie between CSA23 and the Atascadero Mutual Water Company is being pursued as an Integrated Regional Water Management Plan grant project. Your Board implemented new State requirements for limited outdoor watering to two days a week for both CSA 16 and CSA 23 at your August 19, 2014 meeting.

Heritage Ranch is dependent on gallery wells at the base of Nacimiento Dam. Without sufficient river flows (i.e. downstream releases from the Nacimiento Reservoir) the gallery wells will not function. The Heritage Ranch CSD has developed and is moving forward with a project to construct an emergency turnout on the Nacimiento Water line, which lies across the river from the CSD's river intake infrastructure. Agreements with the Nacimiento Commission to construct and operate the project are nearly complete. The project is also seeking funding through the Integrated Regional Water Management Plan grant program.

The Nacimiento Water project currently has five subcontractors as shown below:

NACIMIENTO WATER PROJECT CONTRACTORS		
Contractor	Entitlement in Acre Feet/Year	% Share
City of Paso Robles	4,000	23
City of San Luis Obispo	3,380	19
Atascadero Mutual Water Company	2,000	11
Templeton Community Services District	250	1
County Service Area 10A (Cayucos)	25	.1
Sub Total	9,655	55
Unallocated Reserve	6,095	35
Lakeside Users	1,750	10
Total	17,500	100

The project's overall 17,500 acre foot per year water right represents less than 5% of the reservoirs 377,900 acre foot capacity. The downstream delivery contracts represent less than 2% of the reservoir's capacity. At the same time, San Luis Obispo County's water right applies to the last available 17,500 acre feet in storage, essentially a first in last out status. Combined with the size and location of the watershed above the dam, the long term availability of the full 17,500 acre feet is highly reliable. As a result, since the north County municipalities added Nacimiento to their already strong groundwater supplies, and the City of San Luis Obispo added Nacimiento to their multi-source portfolio, all of the Nacimiento contractors are in a good water supply position.

Attachment 6

However, like all man-made systems, while robust the infrastructure of the Nacimiento project is vulnerable to various types of failures, including the most recent leak in the main line. Investigation into the cause of the leaks, along with design work on a repair approach, are both underway. The target date to put the system back into operation is April 2015.

The Salinas Project (Santa Margarita Lake) is owned by the Army Corps of Engineers and operated by the County for the benefit of the City of San Luis Obispo, which holds the water right permit dating from the 1940's. The City uses water from this system as part of a portfolio approach to water management, that is, the City has multiple water sources. As a result, the amount of water in storage in Santa Margarita Lake (5,600 acre feet at 23% capacity) is not indicative of the City's water supply status.

Plan

County operated water systems in the north County, both wholesale and retail, are projected to be in a secure position for the next twelve months, although as noted above CSA 23/Santa Margarita may move to a more restrictive conservation status. A new State Water turnout to serve CSA16 is anticipated to be constructed in 2015, deliveries may be initially limited or non-existent.

Concerns

The difficult issue in the north county is the relationship between declining water levels in the Paso Robles Groundwater Basin and the reserve water (6,095 acre feet/year) in the Nacimiento Reservoir. While there is no hydrologic connection between the two, that is, the stored water would not otherwise benefit the groundwater basin, the proximity of the water and the problem areas is clear. Both the City of Paso Robles and the Atascadero Mutual Water Company have already taken action to allow water haulers to purchase potable water from their systems for delivery to are users whose wells have gone dry. While beneficial, trucking water highlights the basic physical issue, which is that infrastructure (pumps and pipelines) necessary to move Nacimiento Water to specific areas of the Paso Robles Groundwater Basin does not exist. Compounding the concern is the high cost of new infrastructure, the basic requirement to recover the costs from the beneficiaries of a project, the ongoing discussions about a governance structure to manage the effort, and the relationship between any new users and the investments already made by existing users.

Nevertheless, the County is moving forward on developing information and involving the public in these conversations through the Paso Robles Groundwater Basin Advisory Committee, the Supplemental Water Supply Options Feasibility Study, and Computer Model Update, all following already completed information studies developed for the Paso Robles Groundwater Basin.

Attachment 6

With respect to the Nacimiento Water Project, design work to implement a project to restore flows by April 2015 is already underway. However, it is anticipated that a project involving lining the existing pipe will reduce the capacity of the delivery system. While not of an immediate concern to current subscribers, a reduced capacity would require careful timing of flows should a decision to supplement groundwater supplies be necessary.

D. State Water

The District contracts for 25,000 acre feet per year of State Water. Of that amount, 4,830 acre feet has been subcontracted/allocated to 11 participants (including the County). Several of those participants have purchased additional “brought buffer” water, totaling 4,897 acre feet. Normal allocations plus drought buffer totals 9,727, which leaves 15,273 acre feet unallocated. When State Water deliveries drop below 20%, agencies rely on “carryover” water (unused allocations) stored in the State Water system. By the end of this calendar year, individual agency carryover will be insufficient to meet full allocation amounts for all but two local agencies. At the same time, the District, because of the unallocated amount, is projected to have 2,256 acre feet of carryover available. The following table illustrates current and projected State Water conditions for 2015 based on zero allocations from the State:

PRELIMINARY STATE WATER DELIVERY FOR 2015 (Updated September 2014)						
Project Participant	Table A Amount	Carryover to 2015	Deliveries 2015			Remaining
			Agency Carryover	District Carryover	Total Projected Deliveries	
City of Morro Bay	1313	2144	1151	0	1140	1004
CMC	400	20	20	380	400	0
County Ops Center	425	21	21	354	375	0
Cuesta College	200	11	11	169	180	0
City of Pismo Beach	1240	912	912	0	900	12
Oceano CSD	750	38	38	712	750	0
San Miguelito MWC	275	395	130	0	130	265
Avila Beach CSD	100	0	0	40	40	0
Avila Valley MWC	20	0	0	20	20	0
San Luis Coastal USD	7	3	3	4	7	0
Shandon	100	5	0	0	0	0
SUBTOTAL	4830	3549	2286	1675	3961	1281
SLOCOFC&WCD	20170	2256				563
TOTAL	25000	5805				1844

Attachment 6

2015 State Water Deliveries are preliminary at this time because of the following:

- Deliveries from the State Water Project may change, depending on precipitation amounts
- Not all local State Water contractors have responded to the proposal
- Other local water supply conditions may necessitate changes in deliveries to meet basic human health and safety needs

The preliminary State Water delivery schedule for 2015 is not based solely on a “percentage of allocation”. While such an approach may be considered more “fair”, this preliminary delivery schedule is focused on using District carryover water to mitigate the effects of the current drought. Consideration is given to the overall water supply available to each participant both for the coming year, and as best can be predicted, through 2016. Criteria and assumptions used to develop the preliminary delivery proposal include:

- Zero State Water Deliveries for 2015
- Water stored in the State’s San Luis Reservoir may not be deliverable beyond 2015 due to system issues related moving extremely small amounts of water, therefore it is appropriate to move stored water into the County during 2015
- Availability and condition of individual agencies’ overall water supplies
- Ability to access available supplies beyond 2015

E. Chorro Valley

In the Chorro Valley, the County delivers State Water to three subcontractors and Nacimiento Water to the City of San Luis Obispo. Also, the Chorro Valley contains several important County and State public institutions, and is the location where four of the major water systems in the County intersect (State Water, Whale Rock, Nacimiento, and Salinas).

Issues

The Chorro Valley is heavily reliant on State Water. If State Water deliveries continue to be curtailed, supplemental water will be required to support the public institutions in the valley.

Attachment 6

CHORRO VALLEY WATER SUPPLY & CONSUMPTION 2013			
Source	Amount (Acre feet)	User	Amount (Acre feet)
State Water Project	892	CMC	764
Whale Rock Reservoir	215	Camp San Luis Obispo	114
Groundwater Wells	31	San Luis Obispo County	123
		Cuesta College	123
TOTALS	1138		1124

These institutions not only provide vital services to the entire County, they also provide several hundred head of household jobs. While it may be possible to relocate services, move inmates to other locations, and suspend educational opportunities, the economic and related social impacts to the County would likely be substantial. Consequently, ensuring a continued supply of water sufficient to operate these facilities is vital.

Plan

An intertie between the Salinas pipeline and the Nacimiento pipeline above the Chorro Valley is being pursued as an Integrated Regional Water Management Plan grant project. However, the intertie could not be operational until late 2015. Sufficient carryover State Water exists to provide approximately 955 acre feet to the Chorro Valley, which should be a sufficient supply. The expectation is the California Department of Corrections and Rehabilitation (CDCR) can complete deferred maintenance and potential upgrades to the California Men's Colony (CMC) water treatment plant in order to increase that plant's reliability and production to provide any needed additional water, using water currently stored in Whale Rock Reservoir.

Concerns

Assuming no available State Water in 2016 will require additional reliance on local supplies and treatment capability. It may be possible to exchange a portion of the City of San Luis Obispo's Whale Rock water for additional Nacimiento water, relying on CMC treatment capacity, to offset lost State Water. This approach would avoid potential operational and water treatment issues associated with mixing Nacimiento and Salinas water in the City of San Luis Obispo's water treatment plant, which could occur under some intertie scenarios. However, exchange opportunities are dependent on completing repairs to the Nacimiento Water line, and the amount of available Whale Rock water and coordination with the member agencies of the Whale Rock Commission (City of San Luis Obispo, CMC, and Cal

Poly). Ultimately, without State Water, the need to avoid unacceptable reductions in water security for Whale Rock agencies will necessitate the use of the intertie, as Nacimiento will be the only available source of water for Chorro Valley institutions.

F. Regulation and New Legislation

The State Water Resources Control Board recently adopted emergency regulations are focused on limiting outdoor irrigation and reducing water waste. For the County's three retail systems, new ordinances limiting outdoor watering to no more than two days per week are in place. Based on information from the community hotline and system operators, compliance levels remain high.

California State Senate bill 1168 and Assembly bills 1739 and 1319, signed by the Governor in September 2014, together comprise the "Sustainable Groundwater Management Act". The Act provides for the preparation and implementation of Groundwater Sustainability Plans for all water basins in the State¹, with High and Medium priority basins placed on a schedule for identification of the groundwater management entity, development of the plan, and achieving sustainability. Development of Groundwater Sustainability Plans for other basins (not high and medium priority) is optional at this time. In the event no other public agency, or group of agencies formed under a Joint Powers Agreement or similar legal agreement, identifies itself and the groundwater management authority for a particular basin, the Act identifies the County as the default groundwater management agency. However, in the event the County fails or declines to act, the State would manage the groundwater basin.

There are five high & medium priority groundwater basins mapped in San Luis Obispo County:

1. Paso Robles
2. Santa Maria
3. Los Osos
4. San Luis (Edna) Valley
5. Cuyama Valley

From the perspectives of the identification of stakeholders, potential partner agencies to participate in a JPA, and the status of technical information, the five basins cover the full range of potential tasks and issues.

Assembly bill 2453, providing for the forming of a Paso Robles Basin Water District was also signed by the Governor in September 2014. More information on actions related to this legislation is provided in a separate report.

¹ Groundwater basins and basin boundaries are defined by the State Department of Water Resources in Bulletin 118

Attachment 6