Date Posted: 11/15/2013

NORTH MARIN WATER DISTRICT

NORTH MARIN WATER DISTRICT
AGENDA - REGULAR MEETING
November 19, 2013 – 7:30 p.m.
District Headquarters
999 Rush Creek Place
Novato, California

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Est. Time	Item	Subject
7:30 p.m.		***CALL TO ORDER***
	1.	***APPROVE MINUTES FROM REGULAR MEETING***, November 5, 2013
	2.	***GENERAL MANAGER'S REPORT***
	3.	***OPEN TIME: (Please observe a three-minute time limit)***
		This section of the agenda is provided so that the public may express comments on any issues not listed on the agenda that are of interest to the public and within the jurisdiction of the North Marin Water District. When comments are made about matters not on the agenda, Board members can ask questions for clarification, respond to statements or questions from members of the public, refer a matter to staff, or direct staff to place a matter of business on a future agenda. The public may also express comments on agenda items at the time of Board consideration.
	4.	***STAFF/DIRECTORS REPORTS***
	5.	***MONTHLY PROGRESS REPORT***
		CONSENT CALENDAR
		The General Manager has reviewed the following items. To his knowledge, there is no opposition to the action. The items can be acted on in one consolidated motion as recommended or may be removed from the Consent Calendar and separately considered at the request of any person.
	6.	***Consent – Approve*** Consulting Services Agreement with Renee Roberts
	7.	***Consent – Approve*** Revisions to Policy #9 – Purchasing Policy and #12 – Attorney's Attendance
		ACTION CALENDAR
	8.	***Approve:*** Quitclaim Obsolete MMWD Deed 698 for NUSD (APN 157-180-23)
	9.	***Approve:*** Quitclaim Obsolete MMWD Deed 729 for NUSD (APN 155-020-16)
8:00 p.m.		***INFORMATION ITEMS***
	10.	First Quarter FY 13/14 – Water Quality Report w/ Bacteriological Monitoring Report
	11.	Quarterly Progress Report – Operations/Maintenance
	12.	Review of Draft Revision for Regulation 6
	13.	Comparison of Water Action Plans for California

All times are approximate and for reference only.
The Board of Directors may consider an item at a different time than set forth herein.

(Continued)

14. ***MISCELLANEOUS***

Disbursements
Update- Bill Payment Options
North Bay Workshop on Wheels
SMSWP Letter from Congress

News Articles:
North Coast reservoirs in need of rain
IJ takes its show on the road
Mendocino County board says no to Pinches' latest water idea
Solution to Highway 101's biggest bottleneck at least seven years away
When water flows uphill
Nicasio Creek
Supervisors submit LCP update

9:00 p.m. 15. ***ADJOURNMENT***

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DRAFT
NORTH MARIN WATER DISTRICT
MINUTES OF REGULAR MEETING
OF THE BOARD OF DIRECTORS
November 5, 2013

CALL TO ORDER

President Fraites called the regular meeting of the Board of Directors of North Marin Water District to order at 7:30 p.m. at the District Headquarters and the agenda was accepted as presented. Present were Directors Jack Baker, Stephen Petterle, Dennis Rodoni and John Schoonover. Also present were General Manager Chris DeGabriele, Secretary Katie Young, Auditor-Controller David Bentley and Chief Engineer Drew McIntyre.

Chief Jason Weber, Marin County Fire Department, Rigo, Soccoro, and Adrian Diaz, Judy Rodoni, Al Cornwell (CSW), and District employee Robert Clark (Operations/Maintenance Superintendent), were in the audience.

SPECIAL RECOGNITION

Chief Jason Weber from Marin County Fire Department presented resolutions to Director Rodoni, Judy Rodoni and Rigo Diaz for their bravery and commitment to the community in Pt. Reyes for saving historic buildings due to a fire caused by a car accident. He presented Director Rodoni, Mrs. Rodoni and Mr. and Mrs. Diaz with a challenger coin.

MINUTES

On motion of Director Baker, seconded by Director Schoonover and unanimously carried the Board approved the minutes from the previous meeting as presented.

GENERAL MANAGER'S REPORT

Marin LAFCO Executive Director Meeting

Mr. DeGabriele informed the Board that he met with Marin LAFCO's new Executive Director Keene Simonds. He stated that they discussed the updates to municipal service reviews Countywide which will be performed.

Petaluma South Service Industrial Area

Mr. DeGabriele advised the Board that he and Drew McIntyre met with City of Petaluma's staff on October 23rd to discuss potential transfer of the District's service in the South Petaluma Blvd. Industrial area of Petaluma. He informed the Board that the District agreed to draft an agreement to transfer facilities and service responsibility. Mr. DeGabriele noted that he informed the City of Petaluma that the District had plans to approve the Dutra Haystack Landing service

agreement at the Board meeting tonight and the Petaluma City Manager has requested that the District consider postponing the agreement until Petaluma can thoroughly review the information. Mr. DeGabriele requested the Board table the Dutra Haystack Landing Agreement until the December 3rd meeting.

Stafford Lake

Mr. DeGabriele advised the Board that he and Robert Clark met with Marin County Park staff to discuss the Master Plan for Stafford Lake Park and decided it would be a good time to update the Stafford Lake agreement. He advised the also discussed irrigation supply for the park and improving the pump system for raw water. He stated that they would also look at the lake and creek sediment removal.

Cotati City Meeting

Mr. DeGabriele informed the Board that he was invited to attend the Cotati City Council Meeting next Tuesday to hear the pro and con arguments for fluoridation of the Sonoma County Water Agency water supply. He stated that he would be there representing the Technical Advisory Committee answering questions regarding the TAC review of the Fluoridation Engineering Feasibility Study.

California Water Action Plan

Mr. DeGabriele stated that Director Baker requested he recognize the California Water Action plan which is a joint effort made by the California Natural Resources Agency, the California Department of Food and Agriculture, and the California EPA. He noted that several other agencies have statewide water plans and that he would review the plans together and inform the Board of the similarities and differences.

George Quesada

Mr. DeGabriele informed the Board that George Quesada passed away on October 15th and there will be a memorial service for the public on November 24th. He stated that Mr. Quesada was a long time Board member for the Novato Sanitary District and also served on the Novato City Council.

OPEN TIME

President Fraites asked if anyone in the audience wished to bring up an item not on the agenda and there was no response.

STAFF/DIRECTORS REPORTS

President Fraites asked if staff or Directors wished to bring up an item not on the agenda and the following items were discussed:

Director Baker informed the Board that Drew McIntyre provided a tour for him of the Aqueduct Energy Efficiency Project pipeline installation along the west side of 101. He stated that he was very impressed and that there will be a lot of frontage roads available.

Director Rodoni reminded the Board that Sonoma County Water Agency is offering tours of the Dry Creek Improvements on November 15th and 22nd. He stated that President Fraites, Director Baker and himself will be attending on November 22nd.

PUBLIC HEARING: POLICY #13 – BOARD COMPENSATION AND PROCEDURE

Mr. DeGabriele reminded the Board at the October 15th meeting, the Board, by split vote, decided on an option for revision to Policy #13 – Board Compensation and Procedure. He noted that at the meeting, the Board also set November 5, 2013 as the date for the public hearing to consider Ordinance 27 revising the policy. Mr. DeGabriele informed the Board that the public hearing notice was published in the Novato Advance for two consecutive weeks, on October 23rd and 30th, in accordance with state statue. He stated that the proposed increase is in accordance with the California Water Code section 20200 *et seq*. Mr. DeGabriele noted that the last Directors' compensation increase was in 1982 to $100 per meeting. He stated that the proposed policy revision would increase the per meeting amount to $200 and thereafter that amount would escalate pursuant to the change in the San Francisco Bay Area All Urban Consumers Price Index, but no greater than 5% per year.

Mr. DeGabriele informed the Board that legal counsel has reviewed all of the documentation including the ordinance and policy. He stated that upon completion of the public hearing the policy change will go into effect 60 days from today or January 6, 2014 if no valid voter protest is made. He stated that a petition bearing signatures from 10% of the registered voters within the service area who participated in the most recent gubernatorial election would be considered a valid protest. He noted that the District has not received any comments to date.

President Fraites opened the public hearing at 7:51 p.m. Hearing no comments President Fraites closed the public hearing at 7:52 p.m.

On motion of Director Schoonover, seconded by Director Baker and unanimously approved by the Board, the Board adopted Ordinance #27 "An Ordinance of North Marin Water District Revising District Policy No. 13 Directors' Compensation and Procedure" and approved the revised Policy # 13- Directors' Compensation and Procedure.

QUARTERLY FINANCIAL STATEMENT

David Bentley provided the Board with the Quarterly Financial Report for the first quarter. He stated that the net income at the end of the first quarter was $1.9M. He informed the Board that the District is still waiting on $3.5M to be reimbursed in Recycled Water grant and loan money. Mr. Bentley stated that the operating revenue was 3% above budget and the District is selling more water than budgeted. He advised the Board that Novato revenue is up 15%, due to the 11% rate increase that went into effect June 1st.

Mr. Bentley advised the Board that the net income at the end of the quarter was $1.8M and no connection fees have been collected so far this fiscal year. He noted that Recycled Water still owes Novato $1.1M and that Recycled Water had a small net income of $3K even while covering all deprecation expenses. Mr. Bentley advised the Board that Recycled Water now has 42 customers compared to last year's two customers and the total consumption for the quarter was 66MG.

Mr. Bentley advised the Board that to date the District has spent $15.6M on the Recycled Water Expansion Project and that $1.1M is still financed by Novato Water System.

Mr. Bentley advised the Board that in West Marin the operating revenue was up 12% and expenses were up due to design work on the Gallagher Well project. He stated that West Marin's net income was $112K, about even from one year ago. Mr. Bentley informed the Board that West Marin ended the quarter with a cash balance of $781K, 90% of which is a Bank of Marin loan.

Mr. Bentley stated that in Oceana Marin, the net income for this quarter was $920 and the operating revenue was 12% higher than the pervious year. He noted that Oceana Marin received $30K in connection fees from the Brown Annexation and that Oceana Marin finished the quarter with $197K in the bank.

CONSENT CALENDAR

On motion of Director Petterle, seconded by Director Schoonover and unanimously carried, the following items were approved on the Consent Calendar:

AUDITOR – CONTROLLER'S STATEMENT OF INVESTMENT POLICY

The Board approved the Auditor-Controller's Statement of Investment Policy which is presented to the Board annually for review. There was one change recommended in the investment policy from that approved by the Board last year, and that is to beef-up the investigation of broker/dealers that the District utilizes.

OUTSIDE AUDITOR'S 2013 REPORT & MANAGEMENT LETTER

The Board accepted the FY2012/13 Outside Auditor's Annual Audit Report and Management Letter that was presented as a draft at the October 15th meeting. Staff made minor wording changes to the footnotes. There were no changes requested by the Board.

VILLAGE MARIN MASTER ASSOCIATION AGREEMENT EXTENSION

Village Marin Master Association currently has a ten-year license agreement with the District allowing use of Pachecho Tank roof for four tennis courts. The current agreement runs through December 31, 2013 with the provisional option to extend the term for an additional ten years. The current annual fee is $2,150. The agreement modifications requested by Village Marin Master pertains to how they address their responsibilities to charge the homeowners to fund their maintenance obligations. The District has also revised the insurance limits to meet its current levels of liability and increased the annual fee to $2,500, with a $50 annual escalator to account for additional staff time and attorneys' fees.

The Board authorized staff to grant the Village Marin Master Association's request for an agreement extension for a ten-year term, from January 1, 2014 to December 31, 2023.

ACTION CALENDAR

CSW/ST² CONTRACT AMMENDMENT – AEEP

Drew McIntyre reminded the Board of the overview they received on the Caltrans Marin Sonoma Narrows (MSN) and Aqueduct Energy Efficiency Project (AEEP) at the September 17, 2013 meeting. He stated that while construction is underway for the MSN B1-AEEP Reach E project, Caltrans is still designing the MSN B3 segment and the District is paying CSW/ST² for 'betterment' design costs. He noted that all design work is expected to be finished for the MSN B3-AEEP Reach A-D segments by December 2013.

Mr. McIntyre provided a summary of the past amendments to the CSW/ST² contract and stated that an additional $121,200 is needed for additional design services related to the Aqueduct Energy Efficiency Project.

Mr. McIntyre informed the Board that $42K is needed for additional project management costs, $31K is for extended design duration of the project and $48K is for services during construction.

Mr. McIntyre advised the Board that of the $121K, an estimated 50% of the cost will be reimbursed by Caltrans as part of the agreement for the shared costs of the next phase of the project.

On motion of Director Petterle, seconded by Director Schoonover and unanimously approved, the Board authorized the General Manager to execute a contract amendment with CSW/Stuber-Stroeh in the amount of $121,200 for additional design engineering services related to the MSN and Aqueduct Energy Efficiency Project.

DUTRA HAYSTACK LANDING WATER FACILITIES

Mr. DeGabriele reminded the Board that he mentioned that the City of Petaluma has requested that the District hold off on approving the Dutra Haystack Landing Agreement so they can review the information. Mr. DeGabriele suggested tabling the item until the December 3, 2013 meeting.

President Fraites asked if this area was the area where the Pomo Indians wanted to construct housing. Mr. DeGabriele stated that the Pomo property is south of this area. Director Baker asked if a tribe member has property on that area. Mr. DeGabriele stated that one of the tribe members does own a piece of property adjacent to the area in question.

Director Rodoni believes it's a good idea to postpone item and to give the City of Petaluma time to look at the information. He asked how much longer the District can wait on the agreement and if Dutra has any feedback on if the item was delayed.

Mr. DeGabriele stated that he doesn't believe the delay will impact Dutra.

Al Cornwell, CSW, stated that he was the engineer/project manager for Dutra and that they are fine with letting the agreement go for one more month but to not delay longer.

President Fraites tabled the Dutra Haystack Landing Agreement until the December 3, 2013 meeting.

Al Cornwell left the meeting.

INFORMATION ITEMS

QUARTERLY PROGRESS REPORT – ENGINEERING DEPARTMENTWATER

Drew McIntyre presented the Quarterly Progress Report for the Engineering Department to the Board. He stated that Novato and West Marin water are both projecting fund expenditures to be lower than the approved budget. He noted that Recycled Water is anticipating spending $100k more than what was budgeted due to higher close out costs.

Mr. McIntyre informed the Board that a total of 35 projects were originally budgeted in FY 13/14 for the Novato, West Marin and Oceana Marin service areas and that 7 projects have been carried over from FY12/13.

Mr. McIntyre advised the Board that in the South Service Area Phase 1b project, Disney Construction and the District have been discussing mediation. He noted that last week it was mentioned that Disney might want to delay mediation to see if they and the District can work out a compromise. He stated that he would keep the Board apprised on the information.

Mr. McIntyre stated that in West Marin the District is still trying to get approval from the Local Coastal Commission for the Pt. Reyes Solids Handling Project. He stated that the one project carried over from FY 12/13 is the Gallagher Well Pipeline which the District is still trying to line up funding and should hear more no later than December regarding grant funding.

WATER CONSERVATION QUARTERLY UPDATE JULY– SEPTEMBER 2013

Drew McIntyre presented the Water Conservation Quarterly Update for Ryan Grisso stating that there has been an increase in high efficiency clothes washer rebates. He noted that toilet rebates and cash for grass rebates are lagging but Mr. Grisso is working on additional public outreach to improve landscape incentive participation. Mr. McIntyre stated that Ryan is considering a toilet giveaway similar to the District program done in the past.

Mr. McIntyre informed the Board of the new banner that is now displayed in on the equipment storage building which faces US 101 and which recently has had LED lights installed to gain more exposure.

Mr. McIntyre advised the Board that the first invoice to Sonoma County Water Agency for grant funding was $42K.

Director Rodoni stated that he is not seeing any new programs or rebate increases and that the District is supplementing budgeted money with grant money.

Mr. McIntyre stated that some of the money the District is receiving from SCWA is money that the District can use for other activities such as the toilet giveaway. He noted that another thing the District was looking into was trying to increase participation in additional recycled water retrofit projects.

DRAFT ANNUAL REPORT

Katie Young informed the Board that the Annual Report was ready to be reviewed. She asked that Directors and staff to submit comments for incorporation into the annual report to her by Tuesday, November 12, 2013. She informed the Board that she would distribute the final report at the November 19th Board meeting.

Director Baker asked if there was anything drastic that has been changed. Mr. DeGabriele replied that it is a similar report as previous years.

BOARD REVIEW OF DISTRICT POLICIES

Mr. DeGabriele informed the Board that there were two policies for the Board's review, Policy #9 – Purchasing Policy and #12 – Attorney's Attendance at Board Meetings. He asked that the Board review these policies and provide any comments or revisions to him. He informed the Board that the policies will be brought back to the next meeting for adoption.

NBWA MEETING – NOVEMBER 1, 2013

President Fraites stated that he attended the North Bay Watershed Association meeting on November 1st. He stated that a presentation was made about climate change forecasting and that the weather service and other agencies are positioning instruments in Northern California and in the oceans to get weather predictions within 48 hours to be more accurate.

President Fraites also noted that a program is being tested at three ranches in Marin County, spreading compost over the fields to help soils absorb more greenhouse gases. He noted that the ranches were the Stemple Ranch, Corda Ranch and Strauss Ranch.

WAC/TAC MEETING – NOVEMBER 4, 2013

Mr. DeGabriele provided the Board with a summary of the November 4, 2013 WAC/TAC meeting. He stated that there was a good report on the 20-Gallon Challenge during the Temporary Urgency Change Order (TUCO). He noted that 1,200 challenge pledges were made and an additional 6,000 website visitors started to fill out the page but did not want to disclose personal information. Mr. DeGabriele stated that there was a 4% overall reduction in the total water production during the TUCO which was from May 1st through October 28th. He noted that Lake Mendocino never went below the critical storage curve and that water remains in the river for fish releases. Mr. DeGabriele advised the Board that over 400 Chinook salmon have passed the Mirabel Fish Ladder. He noted that once 1,000 Chinook pass, it's likely that the flows will be increased pursuant to consultation with U.S. Fish and Wildlife and National Marine Fisheries Service

Mr. DeGabriele stated that no one is sure what next year's rainfall will be and Lake Pillsbury is extremely low. He informed the Board that the TAC will continue meeting and hopefully rain will come in November.

Mr. DeGabriele informed the Board that a presentation was made by the Town of Windsor 's Water Conservation Coordinator, regarding the Windsor Pays Program. He noted that the pilot water conservation effort was principally funded by a U.S. Department of Energy grant in partnership with the Regional Climate Protection Agency. Mr. DeGabriele stated that although the Windsor program fell short of its goal to reach 25% of residential customers, (it reached 5%) Windsor

believes that it has been successful from a water conservation perspective. He noted that the Windsor City Council has not yet fully reviewed the program and will make a determination whether to continue beyond the pilot stage.

Mr. DeGabriele informed the Board that last year's SCWA budget was reviewed and water deliveries in FY 2012/13 were up 18% from the budget amount.

Mr. DeGabriele advised the Board that Claudia Luke from Sonoma State University reported on the University's partnership with Sonoma County Water Agency to enhance watershed management and training at their wild lands and preserves.

Finally, Mr. DeGabriele informed the Board that Jake McKenzie will be stepping down as the WAC Chair at the next meeting in February and an election for the new chair and vice chair will take place. He hoped that Director Rodoni would succeed as Chair.

Director Rodoni mentioned the Water Resources Reform and Development Act Bill that was passed by Congress which contains funding for $8.2 billion to build or repair dams, locks and levees and to maintain or deepen harbors, canals and river channels. The bill continues language which will enable the U.S. Army Corps of Engineers to fund Habitat improvements in Dry Creek and the Russian River.

MISCELLANEOUS

The Board received the following miscellaneous items: Disbursements, FY14 1st Quarter Labor Cost Report, SCWA Press Release- U.S. House of Representatives Approves Water Resources Bill that Directly Impacts Russian River Water Supply System, and House Passes WRRDA Bill.

The Board also received the following news articles: Another Voice – Water in the Ukiah Valley – A Community Conversation, Dry Creek Pomo seek hotel for Petaluma land, Young, endangered Coho salmon seen in Walker Creek for the first time in five years, Marin's Stafford Lake bike park fund tops $290,000 with Mill Valley firm's donation, and Sonoma Marin Partnership Wins EPA WaterSense Excellence Award.

CLOSED SESSION

President Fraites adjourned the Board into closed session at 8:31 p.m. for: Conference with Real Property Negotiator (Chris DeGabriele & Drew McIntyre) regarding terms of Interconnection Agreement between North Marin Water District and Marin Municipal Water District in accordance with Government Code Section 54956.8. and in accordance with Government Code Section 54957 for Public Employee Performance Evaluation (One), Title: General Manager.

OPEN SESSION

Upon returning to regular session at 8:57 p.m., President Fraites stated that during the closed session the Board had discussed the issue and no reportable action had been taken.

ADJOURNMENT

President Fraites adjourned the meeting at 8:58 p.m.

Submitted by

Katie Young
District Secretary

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NORTH MARIN WATER DISTRICT
MONTHLY PROGRESS REPORT FOR *October 2013*
November 19, 2013

1.

Novato Potable Water Prod - RR & STP Combined - in Million Gallons - FYTD

Month	*FY13/14*	*FY12/13*	*FY11/12*	*FY10/11*	*FY09/10*	*14 vs 13 %*
July	385	389	371	379	360	-1%
August	360	396	373	368	367	-9%
September	332	346	347	358	335	-4%
October	313	283	249	278	233	11%
FYTD Total	1,390	1,414	1,340	1,384	1,294	-2%

West Marin Potable Water Production - in Million Gallons - FY to Date

Month	*FY13/14*	*FY12/13*	*FY11/12*	*FY10/11*	*FY09/10*	*14 vs 13 %*
July	9.3	9.8	9.2	9.9	10.0	-5%
August	9.3	9.7	9.4	9.9	10.6	-5%
September	8.5	8.3	8.7	9.2	9.6	3%
October	8.0	7.4	6.5	7.8	6.9	8%
FYTD Total	35.1	35.3	33.9	36.8	37.1	0%

Stafford Treatment Plant Production - in Million Gallons - FY to Date

Month	*FY13/14*	*FY12/13*	*FY11/12*	*FY10/11*	*FY09/10*	*14 vs 13 %*
July	98	49	115	109	152	101%
August	83	83	126	108	150	0%
September	56	72	77	112	155	-22%
October	82	88	113	111	80	-7%
FYTD Total	319	291	431	440	537	9%

Recycled Water Production - in Million Gallons - FY to Date

Month	*FY13/14*	*FY12/13*	*FY11/12*	*FY10/11*	*FY09/10*	*14 vs 13 %*
July	27.6	11.2	11.0	11.9	12.0	147%
August	24.6	10.5	12.2	11.2	12.9	134%
September	18.6	8.5	9.6	9.5	10.2	119%
October	15.8	0.0	0.0	2.6	2.6	-
FYTD Total	86.6	30.2	32.8	35.2	37.7	187%

2. **Stafford Lake Data**

	October Average	October 2012	October 2013
Rainfall this month	1.4 Inches	2.1 Inches	0 Inches
Rainfall this FY to date	1.4 Inches	2.1 Inches	0.3 Inches
Lake elevation*	181.2 Feet	178.5 Feet	179.6 Feet
Lake storage**	513 MG	410 MG	450 MG

* Spillway elevation is 196.0 feet
** Lake storage less 390 MG = quantity available for delivery

Temperature (in degrees)

	Minimum	Maximum	Average
October 2012 (Novato)	48	115	70
October 2013 (Novato)	44	90	64

3. Number of Services

October 31	Novato Water			Recycled Water			West Marin Water			Oceana Marin Swr		
	FY14	FY13	Incr %	FY14	FY13	Incr %	FY14	FY13	Incr %	FY14	FY13	Incr %
Total meters	20,730	20,747	-0.1%	45	9	400%	820	819	0.1%	-	-	-
Total meters active	20,483	20,491	0.0%	42	4	950%	776	776	0.0%	-	-	-
Active dwelling units	23,930	23,941	0.0%	0	0	-	812	811	0.1%	227	227	0.0%

4. Oceana Marin Monthly Status Report (October)

Description	October 2012	October 2013
Effluent Flow Volume (MG)	0.488	0.384
Irrigation Field Discharge (MG)	0.559	0
Treatment Pond Freeboard (ft)	4.8	6.2
Storage Pond Freeboard (ft)	7.4	8.0

5. Developer Projects Status Report (October)

Job No.	Project	% Complete	% This month
2670	Canyon Green	90	10
2763	City Administration Office	75	54
2759	Novato High School	99	0
2760	San Marin High School	99	0

District Projects Status Report - Const Dept (October)

Job No.	Project	% Complete	% This month
7139.00	PB Replacement- City Measure A, Group 5	70	0
7134	Digital to Leveroni Looping	80	80
7135.00	DeLong to Cain Looping	95	5

Employee Hours to Date, FY 13/14

As of Pay Period Ending October 31 2013
Percent of Fiscal Year Passed = 33%

Developer Projects	Actual	Budget	% YTD Budget	District Projects	Actual	Budget	% YTD Budget
Construction	623	1,400	45	Construction	1,111	5,607	20
Engineering	331	1,480	22	Engineering	1,764	3,698	48

6. Safety/Liability

	Industrial Injury with Lost Time				Liability Claims Paid	
	Lost Days	OH Cost of Lost Days ($)	No. of Emp. Involved	No. of Incidents	Incurred (FYTD)	Paid (FYTD) ($)
FY through October 13	62	25,792	1	0	2	2,892
FY through October 12	0	0	0	0	0	853

Days without a lost time accident through October 31, 2013= 143 days

7. Energy Cost

		October			Fiscal Year-to-Date thru October		
FYE		Kwh	¢/Kwh	Cost/Day	Kwh	¢/Kwh	Cost/Day
2014	Stafford TP	53,813	17.1¢	$296	275,917	17.1¢	$383
	Pumping	152,688	15.7¢	$829	718,516	16.0¢	$956
	Other*	43,389	22.5¢	$336	192,983	22.0¢	$354
		249,890	17.2¢	$1,432	1,187,416	17.2¢	$1,688
2013	Stafford TP	56,479	17.1¢	$311	215,564	14.5¢	$246
	Pumping	244,614	11.4¢	$1,851	623,540	16.0¢	$925
	Other*	39,712	19.5¢	$242	171,368	23.3¢	$312
		340,806	13.3¢	$1,963	1,010,472	16.9¢	$1,527
2012	Stafford TP	97,827	17.6¢	$594	376,609	17.4¢	$545
	Pumping	99,350	15.3¢	$474	690,050	14.5¢	$813
	Other*	36,198	20.3¢	$244	163,167	21.0¢	$286
		233,375	17.0¢	$1,419	1,229,826	16.2¢	$1,638

*Other includes West Marin Facilities

8. Water Conservation Update

	Month of October 2013	Fiscal Year to Date	Program Total to Date
High Efficiency Toilet (HET) Rebate ($100 each)	40	94	2,719
Retrofit Certificates Filed	25	114	4,883
Cash for Grass Rebates Paid Out	5	14	536
Washing Machine Rebates	17	105	6,256
Water Smart Home Survey	12	90	1,507

9. Utility Performance Metric

CUSTOMER SERVICE INTERRUPTIONS	October No. of Customers Impacted
PLANNED	
Duration Between 0.5 and 4 hours	11
Duration Between 4 and 12 hours	
Duration Greater than 12 hours	
UNPLANNED	
Duration Between 0.5 and 4 hours	6
Duration Between 4 and 12 hours	
Duration Greater than 12 hours	

SERVICE LINES REPLACED	October
Polybutylene	12
Copper (Replaced or Repaired)	2

NORTH MARIN WATER DISTRICT

Summary of Complaints & Service Orders October 2013

11/12/2013

Type	Oct-13	Oct-12	Action Taken October 2013
Consumers' System Problems			
Service Line Leaks	10	22	Notified Consumer
Meter Leak Consumer's Side	0	0	~
House Plumbing	0	0	~
Noisy Plumbing	0	0	~
Seepage or Other	0	0	~
House Valve / Meter Off	3	6	Turned Back On
Nothing Found	8	13	Notified Consumer
Low Pressure	1	0	PSI @ 63. Pressure is good.
High Pressure	1	0	PSI @ 110. PRV Failing.
Water Waster Complaints	0	0	~
Total	**23**	**41**	
Service Repair Reports			
Register Replacements	0	0	~
Meter Replacement	1	5	Replaced
Meter Box Alignment	0	0	~
Meter Noise	0	0	~
Dual Service Noise	0	0	~
Box and Lids	0	1	~
Water Off/On Due To Repairs	4	7	Notified Consumer
Misc. Field Investigation	2	1	Notified Consumer
Total	**7**	**14**	
Leak NMWD Facilities			
Main-Leak	0	0	~
Mains-Nothing Found	0	0	~
Mains-Damage	1	0	Repaired
Service- Leak	11	6	Repaired
Services-Nothing Found	2	3	Notified Consumer
Service-Damaged	0	0	~
Fire Hydrant-Leak	0	1	~
Fire Hydrants-Nothing Found	0	0	~
Fire Hydrants-Damaged	0	0	~
Meter Replacement	0	0	~
Meters-Leak	0	0	~
Meters-Nothing Found	0	0	~
Meters Damaged	0	0	~
Washer Leaks	7	3	Replaced
Total	**21**	**13**	
High Bill Complaints			
Consumer Leaks	9	22	Notified Consumer
Meter Testing	0	0	~
Meter Misread	5	7	Notified Consumer
Nothing Found	25	44	Notified Consumer
Projected Consumption	0	0	~
Excessive Irrigation	3	5	Notified Consumer
Total	**42**	**78**	

NORTH MARIN WATER DISTRICT

Summary of Complaints & Service Orders October 2013

11/12/2013

Type	Oct-13	Oct-12	Action Taken October 2013
Low Bill Reports			
Meter Misread	0	0	~
Stuck Meter	0	0	~
Nothing Found	0	0	~
Projected Consumption	0	0	~
Minimum Charge Only	0	0	~
Total	**0**	**0**	
Water Quality Complaints			
Algal Bloom/GAC	0	0	~
Taste and Odor	0	0	~
Color	0	0	~
Turbidity	0	0	~
Suspended Solids	0	1	~
Other	0	0	~
Total	**0**	**1**	
TOTAL FOR MONTH:	**93**	**147**	**-37%**

Fiscal YTD Summary				Change Primarily Due To
Consumer's System Problems	113	187	-40%	Decrease In Service Leaks
Service Repair Report	47	61	-23%	Decrease In Water Off for Repairs
Leak Complaints	109	110	-1%	Decrease In Service Line Leaks
High Bill Complaints	180	275	-35%	Decrease In Nothing Found
Low Bills	0	1	0%	~
Water Quality Complaints	43	19	126%	Increase In Algal Bloom/GAC
Total	**492**	**653**	**-25%**	

NORTH MARIN WATER DISTRICT

Summary of Complaints & Service Orders October 2013

11/12/2013

Type	Oct-13	Oct-12	Action Taken October 2013
"In House" Generated and Completed Work Orders			
Check Meter: possible consumer/District leak, high bill, flooded, need read, etc.	126	212	
Change Meter: leaks, hard to read	6	8	
Possible Stuck Meter	0	0	
Repair Meter: registers, shut offs	0	0	
Replace Boxes/Lids	2	7	
Hydrant Leaks	0	0	
Trims	6	10	
Dig Outs	25	61	
Letters to Consumer: meter obstruction, trims, bees, gate access, etc.	0	0	
Misc: locate meter, get meter number, cross connection follow ups, kill service, etc.	0	0	
	165	**298**	

Bill Adjustments Under Board Policy:

October 13 vs. October 12

Oct-13	34	$15,276
Oct-12	64	$24,563

Fiscal Year to Date vs. Prior FYTD

13/14 FYTD	135	$40,362
12/13 FYTD	169	$53,914

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MEMORANDUM

To: Board of Directors November 15, 2013

From: David L. Bentley, Auditor-Controller

Subj: Auditor-Controller's Monthly Report of Investments for October 2013
t:\ac\word\invest\14\investment report 1013.doc

RECOMMENDED ACTION: Information

FINANCIAL IMPACT: None

At month end the District's Investment Portfolio had an amortized cost value (i.e., cash balance) of $16,698,085 and a market value of $16,710,070. During October the cash balance increased by $1,414,542. No Recycled Water grant and loan funds were received during the month. The market value of securities held increased by $3,909 during the month. The ratio of total cash to budgeted annual operating expense, excluding the $6,311,788 unexpended balance of the Bank of Marin loan, stood at 79%, up 11% from the prior month. This compares to the District's target ratio of 90% of annual operating expense, or $11.9 million. Receipt of an additional $819,406 in recycled water grant and loan funds is anticipated.

At October 31, 2013, 69% of the District's Portfolio was invested in California's Local Agency Investment Fund (LAIF), 12% in Time Certificate of Deposits, and 12% in Corporate Medium Term Notes. The weighted average maturity for the portfolio was 146 days, compared to 147 days at the end of September. The LAIF interest rate for the month was 0.27%, compared to 0.26% the previous month. The weighted average Portfolio rate was 0.34%, the same as the previous month. Including interest paid by Black Point Partners on the StoneTree Golf Club Recycled Water Facilities Loan, the District earned $8,741 in interest revenue during October, with 44% earned by Novato Water, 53% earned by Recycled Water (by virtue of the Black Point Partners loan) and the balance distributed to the other improvement districts.

State Controller John Chiang's October report on California's financial position stated:

"State revenues are more than $600 million ahead of projections following a second straight month of strong collections. Importantly, because higher-than-expected payroll witholdings and estimated payments are driving the good news, it signals that Californians are beginning to earn more, work more, and the Great Recession is becoming a faint image in the rear view mirror. The recipe for sustaining this momentum is to remain disciplined in our spending, pay-down debt, and aggressively hold taxpayer-funded programs accountable for results."

NORTH MARIN WATER DISTRICT
AUDITOR-CONTROLLER'S MONTHLY REPORT OF INVESTMENTS
October 31, 2013

Type	Description	S&P Rating	Purchase Date	Maturity Date	Cost Basis[1]	10/31/2013 Market Value	Yield[2]	% of Portfolio
LAIF	State of CA Treasury	A	Various	Open	$11,542,397	$11,548,945	0.27% [3]	**69%**
Time Certificate of Deposit								
TCD	Ally Bank	n/a	9/28/12	10/1/14	$248,000	$248,000	0.85%	1%
TCD	Goldman Sachs	n/a	12/5/12	12/5/14	248,000	248,000	0.75%	1%
TCD	GE Capital Retail Bank	n/a	10/11/13	4/13/15	248,000	248,000	0.80%	1%
TCD	Discover Bank	n/a	5/1/13	5/1/15	248,000	248,000	0.50%	1%
TCD	GE Capital Bank	n/a	6/10/13	6/8/15	248,000	248,000	0.50%	1%
TCD	American Express	n/a	8/1/13	8/3/15	248,000	248,000	0.70%	1%
TCD	Compass Bank	n/a	9/4/13	9/4/15	248,000	248,000	0.65%	1%
TCD	Sallie Mae Bank	n/a	10/23/13	10/23/15	248,000	248,000	0.80%	1%
					$1,984,000	**$1,984,000**	**0.67%**	**12%**
Corporate Medium Term Note								
MTN	General Electric	AA+	1/29/13	10/9/15	$1,002,874	$1,003,423	0.70%	6%
MTN	Toyota Motor Credit	AA-	5/14/13	7/17/15	1,006,366	1,006,669	0.50%	6%
					$2,009,240	**$2,010,092**	**0.60%**	**12%**
Other								
Agency	Marin Co Treasury	AA+	Various	Open	$424,401	$424,401	0.22%	3%
Bond	Olema G.O. Bond	A+	5/31/91	1/1/15	7,661	12,246	5.00%	0%
Other	Various	n/a	Various	Open	730,387	730,387	0.00%	4%
			TOTAL IN PORTFOLIO		**$16,698,085**	**$16,710,070**	**0.34%**	**100%**

Weighted Avg. Maturity = **146 Days**

LAIF: State of California Local Agency Investment Fund.
MTN: Medium Term Note - Maturity of 5 years or less.
TCD: Time Certificate of Deposit
Agency: West Marin General Obligation Bond Fund tax receipts & STP State Revolving Fund Loan Reserve.
Bond: Annual $4,113 payment is paid by tax levy on Olema residents.
Other: Comprised of 4 accounts used for operating purposes. US Bank Operating Account, US Bank STP SRF Loan Account, Bank of Marin AEEP Checking Account & NMWD Petty Cash Fund.

1 Original cost less repayment of principal and amortization of premium or discount.
2 Yield defined to be annualized interest earnings to maturity as a percentage of invested funds.
3 Earnings are calculated daily - this represents the average yield for the month ending October 31, 2013.

Interest Bearing Loans	Loan Date	Maturity Date	Original Loan Amount	Principal Outstanding	Interest Rate
Black Point Partners-BPGL	6/30/06	2/28/24	$3,612,640	$2,269,003	2.40%
Employee Housing Loans (7)	Various	Various	1,249,200	1,249,200	Contingent
Employee Computer Loans (2)	Various	Various	4,464	1,926	1.52% (avg)
TOTAL INTEREST BEARING LOANS			**$4,866,304**	**$3,520,129**	

The District has the ability to meet the next six months of cash flow requirements.

6

Item #6

MEMORANDUM

To: Board of Directors November 15, 2013

From: Chris DeGabriele, General Manager CD

Subject: Consulting Services Agreement with Renee Roberts
t:\gm\agreements\consultants\bod roberts consulting service memo 2.docx

RECOMMENDED ACTION: Approve Consulting Services Agreement with Renee Roberts

FINANCIAL IMPACT: Not-to-Exceed $13,750

Attached is a proposed Consulting Services Agreement with Renee Roberts to provide District/Administrative secretarial services as may be required from time-to-time. Renee retired from the District on December 31, 2012. Agreements of this nature have been used in the past for individuals who have retired from the District.

In Renee's case, her services may be needed to assist Katie Young as District Secretary since there is limited internal backup to perform District Secretary duties. It is anticipated that any services required from Renee would end by December 31, 2014.

RECOMMENDATION

Board authorize General Manager to enter into consulting services agreement with Renee Roberts.

Approved by GM CD

Date 11/15/2013

NORTH MARIN WATER DISTRICT

AGREEMENT TO PROVIDE DISTRICT AND ADMINISTRATIVE SECRETARIAL CONSULTING SERVICES

The North Marin Water District, hereinafter called "District" and Renee Roberts hereinafter called "Consultant," do agree as follows:

1. Consultant shall work independently and provide District/Administrative Secretarial services, which may be required by the District General Manager from time to time. The work may entail liaison with other District departments.

2. At no expense to Consultant, District may provide Consultant with use of a desk, telephone, tools, and materials. Use of said equipment and materials shall be strictly limited to work performed in connection with Paragraph 1 above.

3. The District's General Manager will be the District's representative to authorize Consultant work and shall provide direction and guidance to the Consultant.

4. Consultant agrees to hold District harmless and indemnify District against any damage arising out of work performed under this agreement.

5. Consultant will invoice the District for work on a weekly basis at the rate of **$55.00** per hour. Minimum Charge for requested office visit will be four hours. District will pay consultant not more frequently than twice per month. Only productive hours may be billed. Productive hours are defined strictly as hours covering work described in Paragraph 1. Consultant agrees to pursue the work covered by this agreement in a workmanlike manner.

6. Consultant acknowledges that this agreement for consulting services in no way imparts or vests Consultant with employment status with the District. As required by law, the District will report payments made to Consultant to the Internal Revenue Service. Consultant shall be solely responsible for any self-employment taxes, estimated income tax payments, etc.

7. Total hours invoiced by the Consultant under this agreement shall not exceed 250 hours.

8. The District may, at its sole discretion and option, terminate this agreement at any time.

9. The term of this agreement shall commence on January 1, 2014, and shall continue in full force until December 31, 2014.

Date: _____

_____
Chris DeGabriele, General Manager
North Marin Water District

Date: _____

_____
Renee Roberts
Consultant

7

Item #7

MEMORANDUM

To: Board of Directors November 15, 2013

From: Chris DeGabriele, General Manager

Subject: Adopt Revised District Policies Number 9 & 12
I:\hr\policies\bod policies\policy review 2013\bod memo adopt 111513.doc

RECOMMENDED ACTION: Adopt Revised District Policies

FINANCIAL IMPACT: None

Pursuant to direction received at the March 19th Board meeting, two of the following District policies have been revised to reflect the Board and staff's comments and standardize the policy format:

Policy Number 9 – Purchasing Procedure

Policy Number 12- Attorney's Attendance at Meetings

RECOMMENDATION:

Board adopt the revised District policies:

Policy Number 9 – Purchasing Procedure

Policy Number 12- Attorney's Attendance at Meetings

Approved by GM CD

Date 11/15/2013

NORTH MARIN WATER DISTRICT

POLICY: PURCHASING POLICY
POLICY NUMBER: 9

Original: March 1975
Last Reviewed: October 7, 2008
Revision Adopted: October 7, 2008

Section I SCOPE AND PURPOSE

This policy establishes the procedures governing the acquisition of materials, services and equipment by North Marin Water District. The purpose of this policy is to establish efficient procedures for the purchase of supplies, materials or services for the District at the lowest reasonable cost commensurate with long term reliability and consistent interchangeability, within the limitations required, (i.e., time and/or price); to exercise positive financial control over purchases; to define authority for the purchasing function and to encourage full and open competition on purchases.

Section II PURCHASING AGENT AND PURCHASING ASSISTANTS

The Auditor-Controller shall act as Purchasing Agent for the District.

Each Department Head will designate at least one Purchasing Assistant for that Department. The Department Head will define areas of purchasing authority for Purchasing Assistants and shall meet with the Purchasing Assistants at least once each year to review said areas of authority to avoid overlap or duplication. The duties of the Purchasing Assistants may be combined with those of any other position with the exception of the Accounting Clerk. Department employees not formally designated as Purchasing Assistants may act in that capacity for purchase of non-inventory or specialty items at the direction of the Department Head.

Subject to the direction, control and concurrence of the General Manager or his/her authorized representative, Purchasing Assistants shall have the authority to negotiate and recommend execution of purchase orders for supplies, materials or services required by the District, and to keep informed on price, market conditions and new products in the areas where they execute purchasing authority. With general guidance from the District's Auditor-Controller, Purchasing Assistants will maintain such forms, lists and records as are reasonably necessary to meet the purchasing requirements of the District. The Administration Department shall prepare purchase orders.

Section III STANDARDS COMMITTEE

The Standards Committee shall consist of all Department Heads. The duty of this committee is to evaluate quality and performance of construction supplies and materials and to make recommendations to the Purchasing Assistants, in writing, for acceptance or rejection of the proposed item. The committee shall meet whenever any member feels it is necessary for evaluation of new materials, devices and/or equipment, or to discuss problems regarding material and/or devices already in use. The Chief Engineer shall convene Standards Committee meetings at least twice each year.

Section IV PURCHASING PROCEDURES

A. General - All requests for purchase of materials, supplies, equipment or services with a cost in excess of $500 shall be submitted to the Administration Department on a Purchase Request Form. Before submittal, such form shall first be reviewed and approved by the appropriate Department Head. The process to be followed is shown on the attachment entitled Flow Chart of Purchasing Responsibility.

B. Follow-up and Order Tracing - Once award is made or order is placed, the assigned Purchasing Assistant shall have the responsibility for contact between the District and the vendor for order follow-up or order tracing.

C. Specifications - It will be the responsibility of the Chief Engineer, or his/her representative, to compile and write specifications for waterworks materials to be purchased by the District.

D. Contract Purchases - It will be the responsibility of the Department Head, or his/her representative, to comply with the procedure for purchases over $30,000 pursuant to paragraph H of this section.

E. Vendor Lists - Each Purchasing Assistant shall maintain lists of vendors of materials, supplies, equipment and services which are commonly used and are within his/her assigned area of authority. The Administration Department will maintain a master list of vendors.

F. Material List - Purchasing Assistants shall maintain lists of approved materials and supplies and the specifications thereof. The Standards Committee shall evaluate the quality and performance of materials and supplies; the Purchasing Assistants shall evaluate price and availability.

G. Specification and Brand or Trade Name - No invitation to bid shall specify a material or supply brand or trade name unless the specification lists at least two brands or trade names of comparable quality and utility and is followed by the words "or equal." Sole source procurement shall be authorized where it is necessary to provide for interchangeability of spare parts and/or compatibility with the existing installed equipment. Where only one brand or trade name is known, then it must be specified to define the minimum quality level. A specific brand may be purchased to test its suitability or if required to match others in use.

H. Procedure for Purchases Over $30,000 (Sealed Bids) - When the estimated expenditure for a purchase exceeds $30,000 ($40,000 for consumables – i.e., inventoried waterworks materials and water purification chemicals) including taxes, delivery and contractor set-up charges, the purchase will be contracted for and let to the lowest responsible bidder after notice inviting bids and the opening of sealed bids at a fixed time and place. The District may at its discretion reject any or all bids received. The District may re-advertise for bids. The bidding procedure need not be followed in any of the following circumstances:

(1) If, after notice inviting bids, none are received,

(2) If an item to be purchased is available from only one supplier,

(3) If there is an emergency and the General Manager, or his/her designated representative, determines that the requirements of the District will not allow sufficient time to invite and open sealed bids. In such situations, the General Manager, or his/her designated representative, will follow procedures within the limitations of time as shall best achieve the intent of this regulation.

I. Procedure for Purchasing Under $30,000 ($40,000 for consumables)

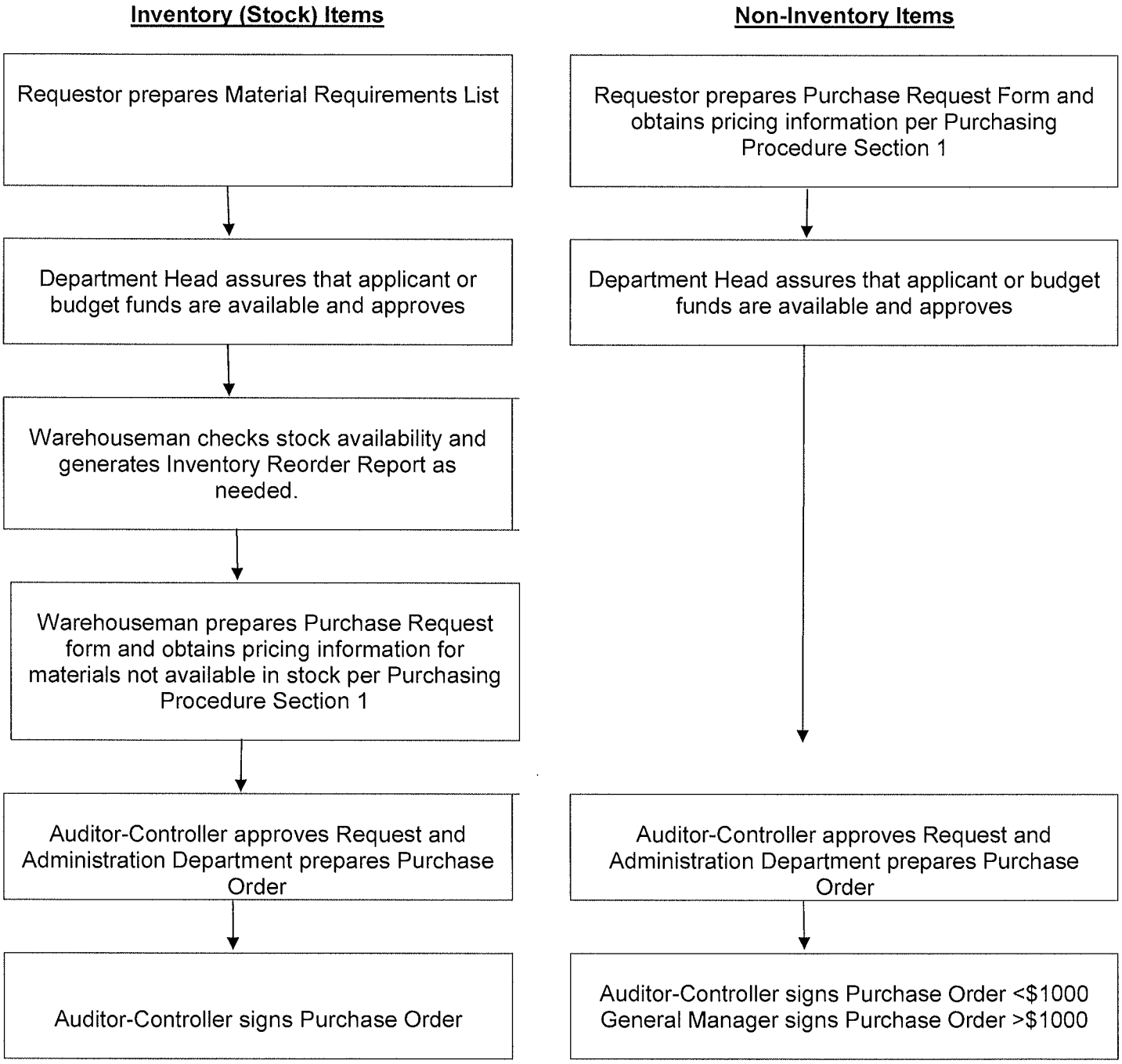
(1) Purchases under $500 - No competitive quotation is required; however, quotes shall be obtained on unfamiliar material to insure relative cost and availability. Purchasing Assistants shall notify their Department Head of all purchases under $500 within 24-hours of said purchase.

(2) Purchases $500 - 30,000 ($40,000 for consumables) - Three or more documented quotations may be obtained at the discretion of the Purchasing Agent.

J. Purchase Orders - Final Oversight - Purchase orders shall be reviewed and approved by the Auditor-Controller and the General Manager. If there is an emergency and the Department Head, or his/her designated representative, determines that there is not enough time to fully comply with this policy, the Department Head, or his/her designated representative, will follow procedures within the limitations of time as shall best achieve the intent of this regulation. The Department Head shall provide a written report to the General Manager concerning the emergency purchase within two working days after said purchase.

Flow Chart Of Purchasing Responsibility

Purchase of materials and equipment shall follow the general path as shown below:



NORTH MARIN WATER DISTRICT

POLICY: ATTORNEY'S ATTENDANCE AT BOARD MEETINGS
POLICY NUMBER: 12

Original Date: 11/19/74
Revision Adopted: June 6, 2006

District legal counsel will attend meetings of the District Board of Directors as deemed necessary by the General Manager or the Board.

Revisions: 11/74, 06/06, 11/13

8

Item #8

MEMORANDUM

To: Board of Directors November 15, 2013

From: Drew McIntyre, Chief Engineer

Subject: Approve – Quitclaim Obsolete MMWD Deed 698 for Novato Unified School District Acquired Easement in Trade for New Easement (APN 157-180-23)
R:\Folders by Job No\EASEMENT\QUITCLAIMS\2700s\2754 Quitclaim Resolution BOD memo.doc

RECOMMENDED ACTION: The Board approve authorization of this quitclaim.

FINANCIAL IMPACT: None

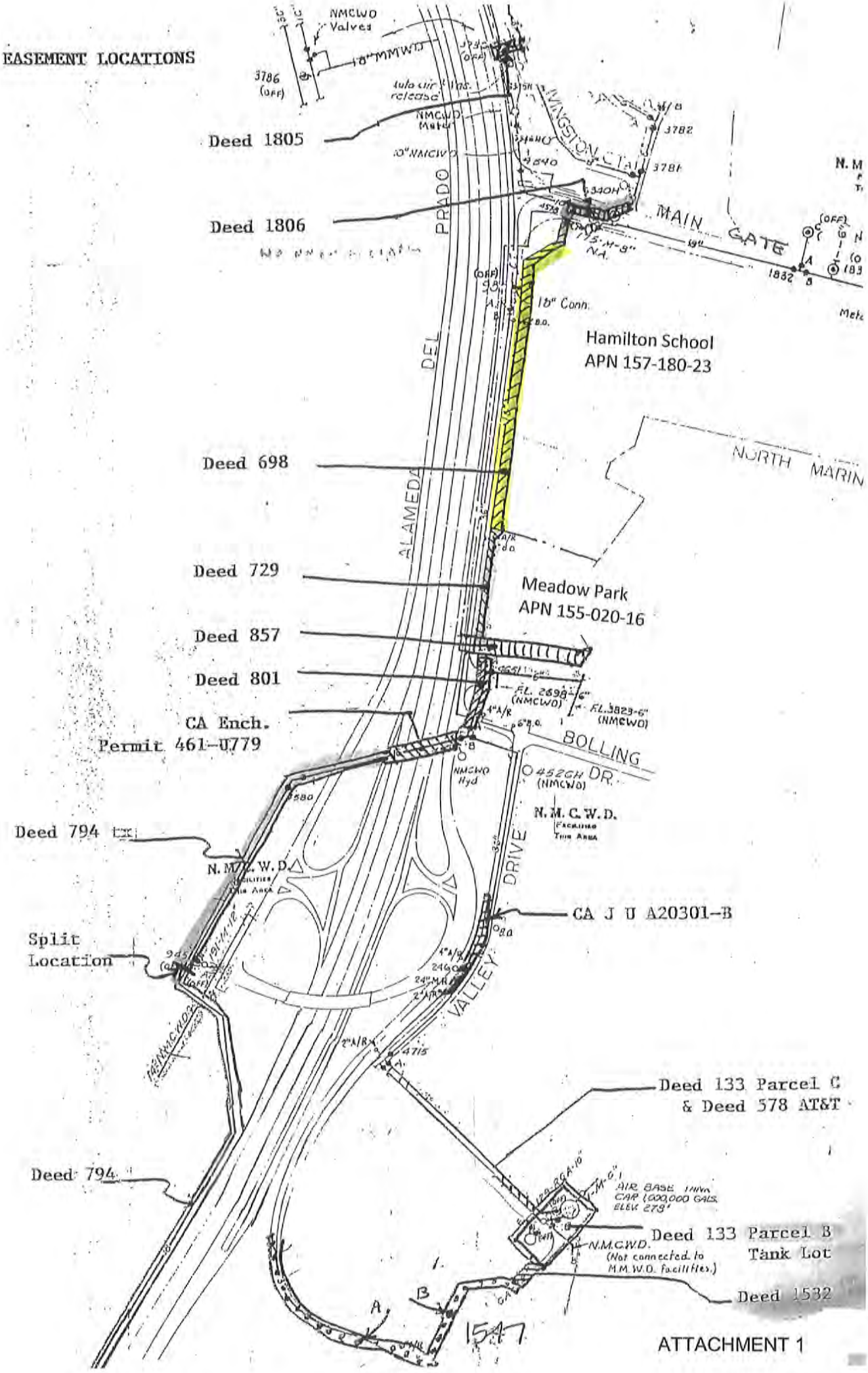
The North Marin Water District acquired a portion of Marin Municipal Water District (MMWD) pipelines (and easements) as part of the 2001 Hamilton Boundary Reorganization including MMWD Deed 698 for 1,100 feet of 18-inch diameter water transmission main paralleling Nave Rd immediately south of Main Gate Road (Attachment 1). This pipeline is on private property owned by the Novato Unified School District (NUSD) and includes a 10 foot wide easement. During construction of the 2011 Hamilton Gym and Administrative Offices Project (Job No. 1 2754.00) on the subject property new easements were prepared that included said 18-inch pipeline, Hamilton Gym pipelines and other pipelines installed in 2008 as part of the NUSD Fire Hydrant project (Job No. 1 2713.00). The new 20 foot wide replacement easements have been executed by NUSD and subsequently recorded at the County in August 2013.

The resolution and new quitclaim deed are provided in Attachment 2.

RECOMMENDATION

Board approve quitclaim and authorize General Manager to execute said quitclaim for an obsolete pipeline easement for APN 157-180-23.

EASEMENT LOCATIONS



ATTACHMENT 1

RESOLUTION NO. 13-

AUTHORIZATION OF EXECUTION OF QUITCLAIM DEED TO

BE IT RESOLVED by the Board of Directors of NORTH MARIN WATER DISTRICT that the President and Secretary of this District be and they hereby are authorized and directed for and on behalf of this District to execute that certain Quitclaim Deed to providing for the release of a pipeline easement (APN 157-180-23) which is not required for District purposes.

* * *

I hereby certify that the foregoing is a true and complete copy of a resolution duly and regularly adopted by the Board of Directors of NORTH MARIN WATER DISTRICT at a regular meeting of said Board held on the this 19th day of November 2013, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAINED:

_____

Secretary of North Marin
Water District

(SEAL)

R:\Folders by Job No\EASEMENT\QUITCLAIMS\2700s\2754 157-180-23 Quitclaim Resolution.doc

ATTACHMENT 2

Recording requested by:

NORTH MARIN WATER DISTRICT

When Recorded Mail To:

North Marin Water District
P. O. Box 146
Novato, CA 94948-0146

A.P.N. 157-180-23 J-1 2754.00 Space above this line for Recorder's use

FOR BENEFIT OF THE DISTRICT

QUITCLAIM DEED

FOR A VALUABLE CONSIDERATION (less $100), receipt of which is hereby acknowledged,

NORTH MARIN WATER DISTRICT, A Public Corporation

does hereby remise, release, abandon, and forever quitclaim to the Novato Unified School District all of said District's right, title, and interest in that certain "Easement for Right of Way (pipeline)" recorded on April 22, 1960 in Book 1361 at page 537, Marin County Official Records.

Which quitclaim deed in trade for a waterline easement all as described in Document No. 2013-0052420.

NORTH MARIN WATER DISTRICT

Date: _____

_____

Chris DeGabriele, General Manager

_____

Katie Young, District Secretary

9

Item #9

MEMORANDUM

To: Board of Directors November 15, 2013

From: Drew McIntyre, Chief Engineer

Subject: Approve – Quitclaim Obsolete MMWD Deed 729 for Novato Unified School District Acquired Easement in Trade for New Easement (APN 155-020-16)
R:\Folders by Job No\EASEMENT\QUITCLAIMS\2700s\2754 Quitclaim 155_020_16 Resolution BOD memo.doc

RECOMMENDED ACTION: The Board approve authorization of this quitclaim.

FINANCIAL IMPACT: None

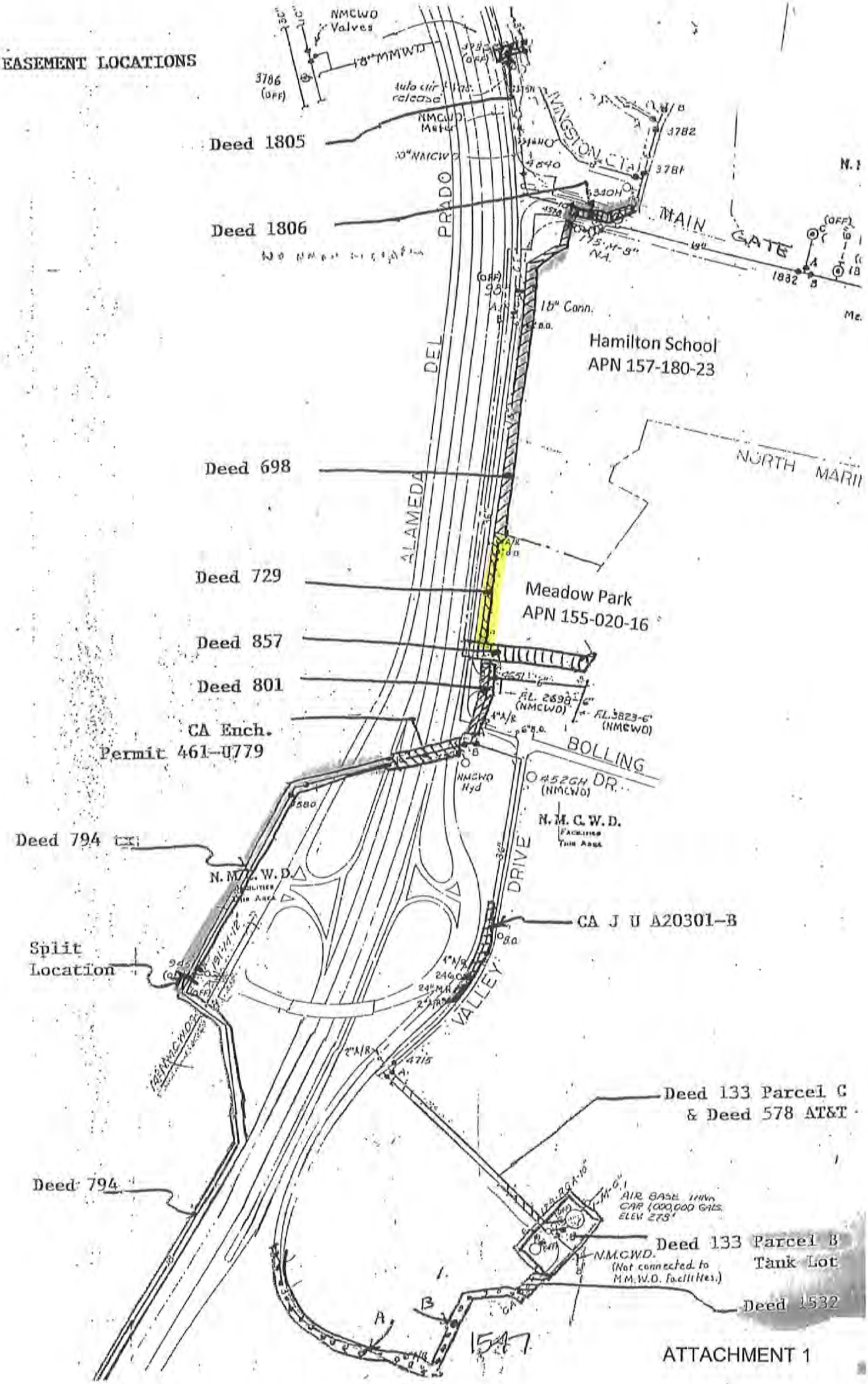
The North Marin Water District acquired a portion of Marin Municipal Water District (MMWD) pipelines (and easements) as part of the 2001 Hamilton Boundary Reorganization including MMWD Deed 729 for 400 feet of 18-inch diameter water transmission main paralleling Nave Drive north of Bolling Drive (Attachment 1). This pipeline is on private property owned by the Novato Unified School District (NUSD) and includes a 10 foot wide easement. During construction of the 2011 Hamilton Gym and Administrative Offices Project (Job No. 1 2754.00) on the subject property a new easement was prepared for the 18-inch pipeline. The new 20 foot wide replacement easement has been executed by NUSD and subsequently recorded at the County in August 2013.

The resolution and new quitclaim deed are provided in Attachment 2.

RECOMMENDATION

Board approve quitclaim and authorize General Manager to execute said quitclaim for an obsolete pipeline easement for APN 155-020-16.

EASEMENT LOCATIONS



ATTACHMENT 1

RESOLUTION NO. 13-

AUTHORIZATION OF EXECUTION OF QUITCLAIM DEED TO

BE IT RESOLVED by the Board of Directors of NORTH MARIN WATER DISTRICT that the President and Secretary of this District be and they hereby are authorized and directed for and on behalf of this District to execute that certain Quitclaim Deed to providing for the release of a pipeline easement (APN 155-020-16) which is not required for District purposes.

* * *

I hereby certify that the foregoing is a true and complete copy of a resolution duly and regularly adopted by the Board of Directors of NORTH MARIN WATER DISTRICT at a regular meeting of said Board held on the this 19th day of November 2013, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAINED:

_____

Secretary of North Marin
Water District

(SEAL)

R:\Folders by Job No\EASEMENT\QUITCLAIMS\2700s\2754 155-020-16 Quitclaim Resolution.doc

ATTACHMENT 2

Recording requested by:

NORTH MARIN WATER DISTRICT

When Recorded Mail To:

North Marin Water District
P. O. Box 146
Novato, CA 94948-0146

A.P.N. 155-020-16 J-1 2754.00 Space above this line for Recorder's use

FOR BENEFIT OF THE DISTRICT

QUITCLAIM DEED

FOR A VALUABLE CONSIDERATION (less $100), receipt of which is hereby acknowledged,

NORTH MARIN WATER DISTRICT, A Public Corporation

does hereby remise, release, abandon, and forever quitclaim to the Novato Unified School District all of said District's right, title, and interest in that certain "Resolution No. 7/60-61" "Resolution of the Governing Board of the San Jose School District Granting a Non-Exclusive Easement to Marin Municipal Water District" recorded October 21, 1960 in Book 1408 at page 424, Marin County Official Records.

Which quitclaim deed in trade for a waterline easement all as described in Document No. 2013-0052420.

NORTH MARIN WATER DISTRICT

Date: _____

_____

Chris DeGabriele, General Manager

_____

Katie Young, District Secretary

10

Item #10

MEMORANDUM

To: Board of Directors November 15, 2013

From: Pablo Ramudo, Water Quality Supervisor PR

Subject: First Quarter FY 13/14 – Water Quality Report
P:\LAB\WQ Supv\WQ Reports\2014\1st Qtr FY14 WQ Rpt.doc

RECOMMENDED ACTION: Information

FINANCIAL IMPACT: $0

The water served to the communities of Novato and Point Reyes met federal and state primary and secondary water quality standards during the first quarter of fiscal year 2013-2014.

Following is a review of the activities and water quality issues in regards to:

- Source Water
- Treatment Performance
- Distribution System Water Quality
- Novato Recycled Water

NOVATO SYSTEM

Source Water: Stafford Lake

Stafford Lake water was used as a source of drinking water during the 1st quarter. Water quality was monitored on a weekly basis for chemical and mineral components as well as microbiological activity.

Algae from the raw water intake were identified and enumerated. There were three distinct blooms and diversity of algal species present was high. Fourteen species of algae were recorded in high numbers including several species which produce compounds that cause adverse taste and odor.

Total organic carbon (**TOC**) ranged from 6.9 – 8.0 mg/L marking a return to normal trends after a record high 10.3 mg/L was observed in September of 2012.

Treatment Performance: Stafford Treatment Plant

Total organic carbon removal remained above the 35% requirement of the Enhanced Surface Water Treatment Rule. Operators were able to achieve from 67-74% removal throughout the quarter. Finished water TOC concentration was near the districts goal of 2.0 mg/L, ranging between 2.1 and 2.8 mg/L. The majority of TOC removal was accomplished through optimized coagulation and filtration.

Taste and odor affecting compounds produced by algae in Stafford Lake resulted in some difficulty in producing aesthetically pleasing drinking water in August and September. The plant's capacity for removal of these compounds, geosmin in particular, was diminished by the age of granular activated carbon (**GAC**). Additionally, one of four GAC cells was refilled with regenerated

carbon which began **Treatment Performance: Stafford Treatment Plant (continued)** to release manganese in excess of the secondary maximum contaminant limit and imparting color to the water. This cell was removed from service, further straining the remaining 3 cells' ability in taste and odor control. Flow was slowed through the plant in order to maximize the contact time in the GAC filters in an attempt to remove all of the taste and odor but this was unsuccessful and the plant did not produce any water between August 26th and September 5th. The taste and odor came under control once the GAC was finally fully replaced in mid-September.

Staff then conducted a survey of available strategies for controlling taste and odor and will be investigating these in the next few months.

Distribution System: Novato

Of the 251 samples collected for compliance with the Total Coliform Rule- there were no coliform positive samples this quarter. Chlorine residual concentrations throughout our distribution system were good.

Disinfection byproducts were moderate for the quarter and within standards of the Stage 2 Disinfection By-Product Rule.

There were several taste and odor complaints in areas served by Stafford Lake treatment plant during times when algae blooms impacted raw water quality.

POINT REYES SYSTEM

Source Water: Coast Guard Wells

Raw water quality was good throughout the quarter. Water quality parameters affected by salt water fluctuated during the quarter and were punctuated by two separate intrusion events corresponding to high tides in Tomales bay. The sodium concentration ranged from 24-51 mg/L, chloride ranged from 31-220 mg/L, hardness ranged from 81-326 mg/L, and bromide ranged from 0.11- 0.80 mg/L.

Treatment Performance: Point Reyes Treatment Plant

Treatment was optimal throughout the quarter and finished water quality was good. Iron and Manganese removal was excellent; neither of the metals was detected in the treated water.

Distribution System: Point Reyes

Of 23 routine samples collected there were no coliform positive samples this quarter. Chlorine residual concentrations throughout our distribution system were good.

Disinfection byproducts were high in this quarter as a result of salinity intrusion. The sample

Distribution System: Point Reyes (continued)

collected at the location representing the maximum residence time for water in the system was just below the maximum contaminant level (**MCL**). Compliance with the Stage 2 Disinfection By-Product Rule is achieved by calculating a running annual average for each location. This means that although an individual sample may have a concentration above the MCL, there is no violation of the standard if the location running annual average is below the MCL.

NOVATO RECYCLED WATER

Deer Island Recycled Water Facility

The Deer Island plant produced water from August 9th through August 14th. There were coliform bacteria present in one sample but the plant remained in compliance with the standards.

NORTH MARIN WATER DISTRICT

North Marin Water District- 1st Quarter FY2013/2014

Bacteriological Quality Monitoring

Novato: 251 Samples Analyzed. No samples positive for coliform bacteria.

Point Reyes: 23 Samples Analyzed. No samples positive for coliform bacteria.

Chemical Quality Monitoring

Constituent	Units	Maximum Contaminant level	SCWA North Marin Aqueduct	Stafford Treatment Plant	Point Reyes Treatment Plant
Conductivity	umhos/cm	900 *	238	443	448
TDS	mg/L	500 *	161	221	265
Hardness	mg/L	-	98.7	103	113
Alkalinity	mg/L	-	118	79.7	92.9
Calcium	mg/L	-	19.5	19.5	15.2
Magnesium	mg/L	-	11.8	13.3	18.9
Copper	mg/L	1.0*	ND	ND	ND
Iron	mg/L	0.3*	ND	ND	ND
Manganese	mg/L	0.05 *	ND	ND	ND
Zinc	mg/L	5.0 *	ND	ND	ND
Sodium	mg/L	-	19	32	47
Chloride	mg/L	250 *	7.02	67.8	83.2
Sulfate	mg/L	250 *	10.1	11.3	13.3
Fluoride	mg/L	2.0 (1.4-2.4)	0.111	0.14	0.094
Nitrite as N	mg/L	1.0	ND	ND	ND
Nitrate as N	mg/L	10	0.161	0.109	0.091
pH	pH units	8.5 *	8.63	8.34	7.28
Turbidity	NTU	5	0.16	0.09	0.06
Color	PCU	15	<2.5	<2.5	<2.5
Free Chlorine	mg/L	4.0	0.68	1.68	1.2
Total Chlorine	mg/L	4.0	0.73	1.78	1.23
Temperature	° C	-	21.4	20.6	18
Odor	TON	3	<1	<1	<1

*Indicates secondary drinking water standard

ND = Not Detected
NA = Not Analyzed

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Item #11

MEMORANDUM

To: Board of Directors November 15, 2013

From: Robert Clark, Operations / Maintenance Superintendent

Subject: First Quarter 2013/14 Update
X:\MAINT SUP\2014\BOD\Q1 13-14 O&M Update.doc

RECOMMENDED ACTION: Information

FINANCIAL IMPACT: None

Safety Summary

After the Customer Service Supervisor received a threatening phone call from a customer which required us to call the Novato Police Department, all staff participated in a Hostile Customer/Workplace Violence training session presented by a representative from the Novato Police Department.

District employees who work in loud or noisy environments (above 75dB) had a hearing test performed in July, and all staff participated in CPR First Aid. No lost time incidents were recorded during the period.

Maintenance Summary

Staff stayed on schedule with routine maintenance tasks, completing 17 unplanned work orders, most of which were in response to the Aqueduct Energy Efficiency Project contractor damaging telemetry lines.

Work on the Point Reyes Treatment Plant controls and communications system was completed resulting in a much more consistent link to our Novato offices and improved efficiency of valve operations during start-up and backwashes.

Staff worked with the Novato Fire Department on District-owned property fire roads' access by removing overgrowth and rut repairs at our Oleander property, Little Mountain, and at the end of Commander Webster Dr. in West Marin. Additional access protection signs were installed on the Stafford Lake watershed to enhance security around the lake.

The mechanic has been able to work with the Electrical/Mechanical staff to cover for vacations and has gained a good understanding of pump station operation and control requirements.

Staff started up 26 new recycled water customers, performing cross connection tests, customer training and monthly report tracking.

Operations Summary

As part of our staffing balance efforts, Dan Garrett was only able to provide a few days of cross-connection control testing, and no assistance was available for the valve and hydrant maintenance program.

Taste and odor issues required staff to replace all four cells of granular activated carbon at Stafford Treatment Plant this summer. Because of the high numbers of algae in the lake, the new carbon was unable to treat all the foul tastes, and subsequently, the plant was forced to shut down for a few days.

Due to the number of new recycled water customers coming online during the period, staff evaluated the customer accounts to ensure all were being billed correctly and recycled water production matched sales figures.

Staff worked with the Grossi dairy on a waste management plan to help reduce the amount of nutrients being spread on the immediate Stafford Lake watershed.

Staff worked with the PES Environmental, Inc consultants to develop and execute a flow test at the Gallagher Well site in West Marin. Results of the test should be available later this month and will be presented to the Board at a future meeting.

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Item #12

MEMORANDUM

To: Board of Directors November 15, 2013

From: Robert Clark, Operations / Maintenance Superintendent RC

Subj: Review of Draft Revision for Regulation 6
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RECOMMENDED ACTION: Information

FINANCIAL IMPACT: None

Staff has been working to update the District's Regulation 6 – Cross-Connection and Backflow Protection for Potable Water Service. In addition staff has developed a Cross-Connection and Backflow Protection Manual to better define how the District's backflow prevention program is executed. A draft copy of the proposed Regulation 6 revisions and the manual have been sent to the District's attorney for review and comment, and are also attached hereto for your review.

The proposed updates include a reference to Title 17 of the California Department of Public Health Code of Regulations, to help explain to our customers and contractors both why a backflow protection program exists, as well as the District's authority to require backflow prevention devices on services within the Novato distribution system. A discussion of customer responsibilities to make necessary repairs is being added so that the District may more quickly resolve any cross-connections found in the potable water distribution system. In the past, there have been many customers in noncompliance, (some for over six months) with the District's requests to install or repair a failed backflow prevention device. Updated installation costs are included in Regulation 6 to reflect current costs.

RECOMMENDATION

Staff is requesting the Board's comments for inclusion in the revised regulation so that the final revised document can be presented to the Board for approval at the regular Board meeting scheduled for December 17th.

NORTH MARIN WATER DISTRICT

REGULATION 6

CROSS-CONNECTION AND BACKFLOW PROTECTION

FOR POTABLE WATER SERVICE

a. General

North Marin Water District furnishes potable water service under permits issued by the State of California Department of Public Health. In order to comply with the terms of these permits and all State regulations intended to protect the potable public water supply from contamination, an appropriate backflow preventer shall be installed at every service connection where one is required by the Department of Public Health Title 17 Code of Regulations. Some examples of State-mandated sites needing devices are: locations with an auxiliary water supply (such as a private well), locations handling pressurized fluids, locations served by recycled water, and locations with plumbing connections to non-potable piping. Specific requirements are found in the District's Cross-Connection Control and Backflow Protection Manual.

This regulation supplements and does not supersede local plumbing regulations, codes or ordinances, or State regulations related to water supply.

b. Type of Backflow Preventer Required

The District shall determine the general type of preventer to be installed, giving consideration to the likelihood of backflow occurring, the type of contamination that may occur and applicable State regulations. The general type of backflow preventers the District may require in decreasing order of protection are: Air Gap (AG), Reduced Pressure Principle device (RPP) and double check valve (DCV). The District shall approve of the specific model of device prior to installation.

c. Installation

The manner and location of installation shall be in accordance with District standards and specifications, and shall be subject to District approval. Backflow prevention devices may be installed by the District or others at the discretion of the customer. The District shall inspect all installations. Installation and inspection of all backflow devices shall be at the customer's expense.

d. Inspection and Testing of Backflow Preventers

A certified inspection and performance test of all backflow preventers shall be performed annually or more often in those instances where successive inspections indicate repeated failure or on such other schedule approved by the Department of Public Health. Installed devices may be tested by the District or others at the sole discretion of the District. Inspection and testing will be at the customer's expense. Inspections will be conducted only by individuals certified by AWWA (American Water Works Association) as backflow prevention testers.

A report of a certified inspection will be submitted to the District within 30 days of notice that an inspection is due.

e. Repairs or Replacement of Backflow Prevention Devices

Backflow devices that fail a performance test will be repaired or replaced by the customer, except in the case of 3/4", 1" and 1½" double check valve assemblies installed by the District. These assemblies (3/4", 1" and 1½ ") installed by the District will be repaired or replaced by the District. Repairs shall be made within 45 days of notice of device failure.

If a customer fails to make the necessary repairs within the 45-day notice period as required, District staff will make said repairs and invoice the customer for the actual cost of the District's work.

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f. Charges for Installation Performed by District

The customer shall pay a charge for installation of backflow prevention devices in accordance with the following table:

If installed at time of initial meter set:

Size	Device	Charge	Charge (7/2013)
¾"	DCV	$234.00	$321.00
1"	DCV	$258.00	$352.00
1½"	DCV	$293.75	$402.00
¾"	RPP	$330.00	$451.00
1"	RPP	$402.00	$549.00
1½"	RPP	$487.50	$667.00

If installed on existing meter, additional installation costs will be added.

Charges for larger assemblies shall be based on the actual cost of each installation.

Each customer having a backflow prevention device serviced by the District shall pay a bimonthly fee for servicing the device as shown in Regulation 54.

g. Noncompliance

If a customer fails to comply with this regulation by failure to install, test or correct deficiencies or by removal, tampering with or modifying a preventer, the District shall have the right to refuse or discontinue water service and, if it deems necessary, physically disconnect the customer's piping from the District's distribution system.

Any customer who willfully fails to install a BFPA as required herein, or who willfully bypasses or alters such an assembly, will be subject to prosecution and, upon conviction thereof, shall be punishable by a fine not exceeding $500.00 or by the imprisonment in the County jail for a period not exceeding six months or by both fine and imprisonment (California Health and Safety Code 116820).

h. Access for Inspection

North Marin Water District personnel and representatives of any governmental health agency shall have the right of ingress to and egress from the customer's premises at all reasonable hours without prior notification for the purpose of investigating compliance with this regulation and State Department of Public Health requirements.

i. Liability

The District shall not be liable for any injury to persons or damage to property which may result directly or indirectly from the installation, malfunction, testing or repair of any backflow preventer.

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DRAFT

NORTH MARIN WATER DISTRICT

CROSS CONNECTION CONTROL AND BACKFLOW PROTECTION MANUAL

Amended: XXXXXXXXXX

Sections

Appendices

A. Authority and Purposes

1. Title 17, sections 7583 through 7605 of the California Code of Regulations, entitled "Protection of Public Water System at Service Connection," provides rules and regulations governing cross-connections and backflow protection.

2. Title 17, section 7584 of the California Code of Regulations provides in part: "The water supplier shall protect the public water supply system from contamination by the implementation of a cross-connection control program." North Marin Water District (District) is a water supplier as defined under Title 17, Section 7583 of the California Code of Regulations.

3. In order to provide for an orderly and adequate means of protection of the District's potable water system from cross-connection and backflow, the requirements set forth herein are reasonable and necessary for the protection of the District's potable water system and the public's health and welfare. New service connections shall be installed and existing service connections shall be modified to conform to the requirements herein.

4. The District furnishes potable water service under permits issued by the State of California Department of Public Health (CDPH). In order to comply with the terms of these permits and all state regulations intended to protect the potable public water supply from pollution and / or contamination, an appropriate backflow prevention assembly (BFPA) shall be installed at every service connection where one is required by regulations of the CDPH.

5. This manual is consistent with and observes the current practice outlined in the University of Southern California (USC) Foundation for Cross-Connection Control and Hydraulic Research Manual of Cross-Connection Control.

6. This manual supplements District Regulation 6, but does not supersede local plumbing regulations, codes or ordinances, or state regulations related to water supply.

B. Definitions

"Approved backflow prevention assembly" (BFPA) means a backflow preventer that has passed laboratory and field evaluation tests performed by a recognized testing organization, which has demonstrated their competency to CDPH to perform such testing and is used to prevent backflow or back-siphonage into the District's potable public water system. The type of assembly used shall be based on the existing or potential degree of hazard and backflow condition..

"Auxiliary water supply" means any water supply on, or available to the premises other than the District's potable water supply. Auxiliary water supply may include water from another purveyor's potable water system, water held in storage tanks, or any natural source(s), e.g., a well, river, harbor, recycled water, pipeline; grey water; or industrial fluids. These waters may be contaminated, polluted, and objectionable or constitute an unacceptable water source over which the District does not have sanitary control.

"AWWA" means the American Water Works Association.

"Backflow" means the undesirable reversal of the flow of water, liquids, gases, mixtures or other substances into or towards the District's water system from any source or sources (USC).

"Backpressure" means a form of backflow that occurs when pressure in the downstream piping system (caused by pump, elevation of piping, steam and/or air pressure) is above the supply pressure at the point of consideration resulting in a reversal of the normal flow.

"Back-siphonage" means the form of backflow due to a reduction in system pressure that causes a negative or subatmospheric pressure to exist at a site in the District's potable water system.

"CCR Title 17" means the California Code of Regulations, Administration Code, Title 17, Public Health, which requires the establishment of a cross-connection control and backflow protection program.

"Certified tester" means any individual who holds a current American Water Works Association (AWWA) backflow prevention assembly general tester certification

"Contaminant" or "contamination" means an impairment or degradation of the quality of potable water by the introduction of sewage, industrial fluid, grey water, foreign material or auxiliary water from an unapproved source to a degree that it may create an acute hazard to the public health through poisoning, the spread of disease or which may impair the usefulness or quality of the water.

"Controlled cross-connection" means a connection between the Distrtict's potable water system and a nonpotable water system with an approved BFPA properly installed and maintained so that it will continuously afford the protection commensurate with the degree of hazard.

"Cross-connection" means any active or potential connection or structural arrangement between a public or a consumer's potable water system and any other source or system through which it is possible to introduce into any part of the potable system any used water, industrial fluid, gas, or substance other than the intended potable water with which the system is supplied. Bypass arrangements, jumper connections, removable sections, swivel or change-over devices and other temporary or permanent devices through which or because of which backflow can occur are considered to be cross connections.

"Customer," "consumer," or "user" means the owner or operator of a private water system served by the District's water system.

"Customer's potable water system" means that portion of the customer-owned potable water system lying between the metered point of service and the point of use, including all pipes, conduits, tanks, receptacles, fixtures, equipment and appurtenances used to produce, convey, store or use potable water.

"Customer's water system" means any water system located on the consumer's premises, whether supplied by the District's potable water system or an auxiliary water supply. The customer's water system may be either a potable water system, an industrial piping system or an irrigation system.

"Degree of hazard" means the hazard derived from an evaluation of the conditions within a system that may be classified as either a pollution (non-health) or contamination (health) hazard.

"District" means the North Marin Water District.

"District personnel" means any current employee of the North Marin Water District.

"District potable water system" means the District-owned water pipelines, tanks, pump stations and all appurtenances operated to furnish potable water for domestic purposes and/or consumption.

"Double check detector backflow prevention assembly (DCDA)" means a specifically-designed assembly composed of an approved double check valve assembly with a bypass containing a water meter and an approved double check valve assembly. The meter shall register accurately for rates of flow up to 2 gpm (gallons per minute) and shall show a registration for all rates of flow. DCDA assemblies shall only be used to protect against a non-health hazard. The DCDA is primarily used on fire sprinkler systems.

"Double check valve backflow prevention assembly (DC)" means an assembly composed of two independently-operating, approved check valves, including tightly-closing resilient seated shut-off valves attached on each end of the assembly and fitted with properly-located resilient seated test cocks for testing that each check valve is watertight. DC assemblies shall only be used to protect against a non-health hazard.

"Hazardous substances" means any hazardous waste or hazardous substance as defined in any federal, state or local ordinance, rule or regulation including, without limitation, the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (Title 42 United States Code Section 9601, et seq.); the Carpenter-Presley-Tanner Hazardous Substance Account Act (California Health and Safety Code Section 25300, et seq.); and the Hazardous Waste Control Law (California Health and Safety Code Section 25100, et seq.). Hazardous substances shall also include asbestos, or asbestos-containing materials, radon gas, and petroleum or petroleum fractions, whether or not defined as hazardous substance in any such statute, ordinance, rule or regulation.

"Health agency" means either the state of California Department of Public Health or the Marin County Department of Health and Human Services.

"Objectionable substance" means a substance introduced into the District's water supply that may not necessarily pose a threat to public health, but may adversely affect the taste, appearance or other aesthetic qualities of the potable water supply.

"Point of service" means the terminal end of the District's water system where ownership, jurisdiction and sanitary control become the consumer's responsibility. In general, the point of service is typically the service connection downstream of the customer meter.

"Pollutant" or "pollution" means any foreign substances (organic, inorganic or biological) present in water that tends to degrade its quality so as to constitute a nonhealth hazard or may impair the usefulness or quality of the water to a degree that does not create an actual hazard to the public health but which adversely and unreasonably affects such waters for domestic use."

"Premises" means any and all areas on a customer's property which are served or have the potential to be served by the District's water system.

"Reduced pressure principle backflow prevention assembly (RP)" means an assembly containing two independently-operating approved check valves together with a hydraulically-operating, mechanically-independent pressure differential relief valve located between the check valves and at the same time below the first check valve. The unit shall include properly-located resilient seated test cocks and tightly-closing, resilient-sealed shut-off valves at each end of the assembly. At cessation of normal flow, the pressure between the two check valves shall be less than the pressure on the public water supply side of the assembly. In case of leakage of either of the check valves, the differential relief valve shall operate to maintain this reduced pressure by discharged to the atmosphere. This assembly is designed to protect against a non-health hazard or a health hazard. This assembly shall not be used for backflow prevention of sewage or recycled water.

"Recognized testing organization" means the Foundation for Cross-Connection Control and Hydraulic Research of the University of Southern California or other laboratory having equivalent capabilities for both the laboratory and field evaluation of backflow prevention assemblies.

"Reduced pressure principle detector backflow prevention assembly (RPDA) means a specifically-designed assembly composed of an approved reduced pressure principle backflow prevention assembly with a bypass containing a water meter and an approved reduced pressure principle backflow prevention assembly. The meter shall register accurately for rates of flow up to 2 gpm and shall show a registration for all rates of flow. This assembly shall be used to protect against a non-health hazard or a health hazard. The RPDA is primarily used on fire sprinkler systems.

"Service connection" means the District's water service pipeline and appurtenances from the District's water main to the customer's water system; in particular, the point where jurisdiction for sanitary control over the water passes from the District to the customer. If a customer meter is installed at the end of the service connection, then "service connection" shall mean the downstream end of the meter. There shall be no unprotected connections from the service line upstream of any meter or backflow prevention assembly located at the point of delivery to the customer's water system. The term "service connection" shall also include a water service connection from a fire hydrant and all other temporary or emergency water service connections from the District's potable water system.

"Service protection" or "meter protection" means the installation of an approved BFPA at the water service connection to any customer's premises, where it is physically and economically impracticable to find and permanently eliminate or control all actual or potential cross-connections within the customer's water system. It shall also mean the installation of an approved BFPA on the service line leading to and supplying a portion of a customer's water system where there are actual or potential cross-connections that cannot be effectively eliminated or controlled at the point of the cross connection.

C. Backflow Prevention Assemblies Required

An approved BFPA shall be installed on each service connection of every premise described below. The placement of the BFPA shall be as close as practical to the service connection as determined by the District. In all cases, the BFPA shall be installed before the first branch line leading off the service line, with no outlet, tap, tee or connection between the meter and backflow prevention device.

BFPAs are required at the service connection are as follows:

1. Premises having an auxiliary water supply; for example, recycled water, well(s), tank system(s), cistern(s), etc.
2. Premises on which any substance, including water originating from the District's water system, is pressurized so as to permit the substance's possible entry into the District's potable water system.
3. Premises where the customer's system has more than one service connection or a separate irrigation meter(s).
4. Premises which contain a cross-connection or the potential for a cross-connection that could result in the pollution or contamination of the District's potable water system in the event of a backflow incident.
5. All commercial/industrial service connections serving non-residential parcels, including irrigation services, and any residential parcels used for business purposes as determined by the District.
6. Premises which contain intricate plumbing and piping arrangements where entry to all portions of the premises is not readily accessible for inspection purposes.
7. Premises with multi-unit buildings or residences with three or more units from a single water service where water is provided.

D. Installation, Inspection, Testing and Repair of Backflow Prevention Assemblies

1. Requirements

Where required by the District, installation of a BFPA shall be a permanent condition of water service.

2. Ownership

All BFPAs installed on single-family residences, duplexes, mobile homes and second units shall be owned, tested and maintained by the District. All other BFPAs shall be owned and maintained by the customer. All BFPAs shall be tested by the District.

3. Standards

a. BFPAs may be installed either by the customer, any contractor with a California License A, B, C16 or C36, and must be tested by someone who holds a current American Water Works Association (AWWA) backflow prevention assembly general tester certification ("certified tester"), or by District personnel.

b. BFPA type and installation shall be in compliance with the District's standards (attached hereto).

4. Inspection

a. Newly-installed or upgraded BFPAs must be inspected by the District and have passed performance testing by a certified tester. The District will not provide water service to a customer with a failed assembly.

b. BFPAs shall be tested annually by District personnel or licensed plumbing contractor with a certified tester. Charges for testing and maintenance of BFPAs performed by the District are included in the customer's bi-monthly backflow service charge, as established in District Regulation 54.

c. If a BFPA fails inspection and/or testing, the District will notice the customer with a letter of non-compliance. Said notice will include a list of qualified contractors and certified testers. The District will allow a 30-day period during which the failed BFPAs shall be repaired or replaced and pass testing. In a situation which, in the District's sole discretion, constitutes an immediate hazard to the public water distribution system, the District may suspend water service until repairs have been made.

d. All premises using recycled (tertiary) water provided by the District shall comply with Title 22 of the California Code of Regulations, section 60316 which states that the recycled water system shall be tested for possible cross-connections at least once every four years. The District will also conduct annual surveys on recycled water systems that do not include a complete shut-down test. These surveys and testing shall be performed by District personnel, for which charges are included in the bi-monthly backflow service charge.

5. Existing Service

If the District determines an existing service connection requires a BFPA or must be upgraded to meet a higher degree of hazard, and the customer fails to install said BFPA within 45 days as set forth in a written notification from the District, the District may suspend water service to the premises being served. Alternatively, at the District's option and upon notification to the customer, the District may install the BFPA and charge the customer for the actual cost of installation and initial testing.

6. Freeze Protection

It is the responsibility of the customer to install freeze protection on the BFPA. If the freeze protection hinders District access to the BFPA for the purposes of testing and/or inspection, said freeze protection shall be removed. The District shall not be responsible or liable for reinstallation of freeze protection. The relief port at the bottom of an RP device must not be covered by any freeze protection. All test ports on any assembly must be easily accessible, along with the serial and model numbers.

7. Exceptions

The City of Novato, the Novato Unified School District, and California Department of Transportation own, test and maintain their BFPAs and conduct annual cross-connection control testing and repair programs, as approved by the District.

The District shall notify these entities each year when testing procedures should commence, and request that copies of all test results be submitted to the District in a timely fashion.

E. Noncompliance

If, for any reason, a consumer fails to comply with the requirements set forth herein by failure to install, test, or correct deficiencies or by removal, tampering with or modifying a BFPA, the District shall have the right to refuse or discontinue water service and, if it deems necessary, physically disconnect the consumers piping from the District's distribution system.

Any customer who willfully fails to install a BFPA as required herein, or who willfully bypasses or alters such a assembly, will be subject to prosecution and, upon conviction thereof, shall be punishable by a fine not exceeding $500.00 or by the imprisonment in the County jail for a period not exceeding six months or by both fine and imprisonment (California Health and Safety Code 116820).

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Item #13

MEMORANDUM

To: Board of Directors November 15, 2013

From: Chris DeGabriele, General Manager

Subject: Comparison of Water Action Plans for California
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RECOMMENDED ACTION: Information Only

FINANCIAL IMPACT: None

Director Baker requested I acknowledge the California Water Action Plan public review draft released on October 31. The Governor requested a multi-agency working group comprised of the California Natural Resources Agency, Cal Environmental Protection Agency (Cal/EPA), and the California Department of Food and Agricultural prepare this California Water Action Plan. Governor Brown charged these state agencies to identify key actions for the next 1-5 years that address urgent needs and provide the foundation for sustainable management of California Water Resources (Attachment 1).

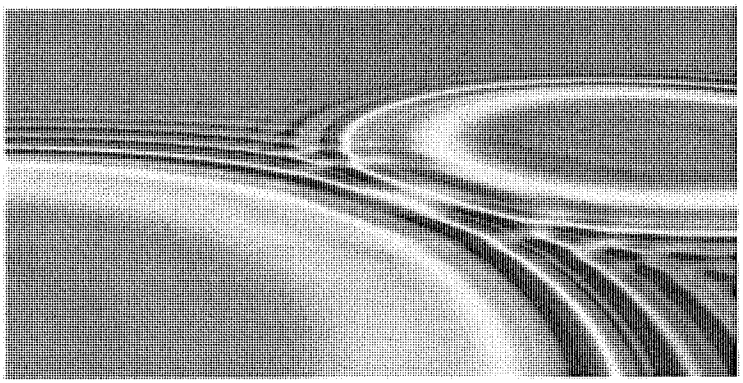
Coincident with the California Water Action Plan, the Association of California Water Agencies (ACWA), released its Statewide Water Action Plan for California (Attachment 2). At the same time, the Department of Water Resources California Water Plan Update 2013 (DWR plan) is now available for public review. The DWR plan is typically updated every five years (excerpts included as Attachment 3).

Each plan uses its own nomenclature but in essence covers the same playing field. The DWR plan has a long history and is more in depth and does address current conditions and plans in reports for 12 California hydrologic regions. North Marin Water District is addressed in the North Coast Hydrologic Region Report, which includes detailed discussion about the Russian River, including the Potter Valley project, Lakes Mendocino and Sonoma, the Petaluma Aqueduct and the North Marin Aqueduct. NMWD's Stafford Lake and the Deer Island Recycled Water Facility are mentioned here as a result of NMWD's comments on prior versions of the DWR plan. Expansion of the Novato Recycled Water System in conjunction with Novato and Las Gallinas Valley Sanitary Districts is covered in the San Francisco Bay Hydrologic Region Report, since the North Bay Water Reuse Authority territorial boundary is within this region.

A comparison of the plans is included in the attached table (Attachment 4) for your further information.

Public Review Draft

California Water Action Plan



CALIFORNIA natural resources AGENCY

cdfa
CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY (CAL/EPA)

ATTACHMENT 1

Dear Stakeholder,

We have reached a critical juncture for water policy in California. Climate change, drought and population growth pose significant challenges to our state. In May, Governor Brown directed our agencies to put together a multi-agency working group and identify key actions for the next one to five years that address urgent needs and provide the foundation for sustainable management of California's water resources.

The set of actions outlined in this document begin to deal with our challenges. While this won't resolve them all, it can put California on a firm path to sustainability. In order for this effort to be effective there must be collaboration between state, federal and local governments, regional agencies, Native American tribes, the private sector and members of the public.

This plan builds on the ideas and recommendations of a wide range of industry, government and non-governmental organizations, who understand the urgency of the task before us. We must work together and seize the opportunity to lay the foundation for sustainable water management in the coming decades.

Over the next several weeks, we will work to collect input on this public review draft of the California Water Action Plan. From this effort, we hope to drive participation in the many venues the state of California has for policy development and regulation for water. For more information about this water action plan or to submit comments and questions please email wateraction@water.ca.gov.

Sincerely,

John Laird
Secretary, California Natural Resource Agency

Matthew Rodriquez
Secretary, California Environmental Protection Agency

Karen Ross
Secretary, California Department of Food and Agriculture

Contents

California Water Action Plan: Actions for Reliability, Restoration and Resilience

Introduction

After two years of dry weather and shrinking reservoir supplies, we are reminded once again that nothing focuses Californians' attention on our limited water resources like drought.

There is broad agreement that the state's water system is currently unable to satisfactorily meet both ecological and human needs, too exposed to wet and dry climate cycles and natural disasters, and inadequate to handle the additional pressures of future population growth and climate change. Solutions are complex and expensive, and they require the cooperation and sustained commitment of all Californians working together. Thoughtful, decisive action is needed now to put California's water resources on a safer, more sustainable path.

This report identifies actions that, in the next five years, will move California toward more sustainable water management by providing reliable water supply for our farms and communities, restoring important wildlife habitat and species, and helping the state's water systems and environment become more resilient. These actions are organized around long-term objectives. Some of the actions are new proposals. Some are being planned and should be completed more rapidly, implemented in a better way, or on a larger scale. Success will require the cooperation of many partners; the state's role is to lead, help others, and remove barriers to action. These actions will not address all of our challenges; nor should they distract from other important efforts being developed and implemented across the state. But, the actions described here are critical to moving the state forward now.

Risks to California's Water Resources

Water has always been a scarce resource in California. Most precipitation falls in the northern and eastern mountains, yet most of the population and irrigated farmland is located in the drier west and south. Precipitation is highly variable year-to-year, but the long warm summers are always dry. In the mid-20th century, state, federal, and local agencies built a vast system of reservoirs, canals, pumps and pipelines to store water and deliver it to agricultural and urban users in dry areas. This system has resulted in unintended impacts on the natural world. In general, there is broad consensus about our challenges:

- ***Uncertain water supplies*** – Reductions in water from major sources like the Colorado River and the Sacramento-San Joaquin Delta (Delta)—due to hydrologic and declining environmental conditions—have made these water supplies less reliable. Moreover, climate change impacts to these sources and the Sierra headwaters further strains supply reliability from north to south. These sources are foundational supplies around which their communities develop and manage local resources, such as water use efficiency, recycled water and groundwater recharge. The unreliable nature of these supplies threatens local, regional and statewide economies. The combined benefits of all of the actions in this plan will contribute to more reliable water supplies.

- ***Water scarcity/drought*** – California's hydrology has always had extended dry periods. Much of California's water system was originally planned to withstand a seven-year dry period without severe damage to the economy and environment. That original vision was not sustainable, and today some regions and many communities struggle to maintain adequate water supplies after only a year or two of dry conditions. Climate change will make this situation even more challenging. Improving our ability to manage scarce water supplies and better coordinate operations of major reservoirs is essential to economic and environmental sustainability. Taking action to address drought is especially urgent for agriculture where crops wither without water, and the world's population growth and food demand creates food security concerns. Effective state preparedness reduces impacts of shortages and lessens the costs of state response actions. The actions identified throughout this plan are specifically designed to help secure more reliable water supplies and consequently improve drought preparedness.

- ***Declining groundwater basins*** – Groundwater accounts for more than one-third of the water used by cities and farms—much more in dry years, when other sources are cut back. Unfortunately, much of California's groundwater is not sustainably managed. Climate change is exacerbating ongoing problems with groundwater resources in California, including overdraft, seawater intrusion, land subsidence, and water quality degradation. Taking more than is returned lowers groundwater levels which makes pumping more expensive and energy intensive. It also serves to mobilize toxins that impair water quality and causes land subsidence, which damages infrastructure and permanently diminishes the capacity to store water for the future. Land subsidence due to groundwater overdraft is impossible to reverse. Well-managed groundwater has the potential to buffer against the impacts of climate change on our water resources. The actions identified in this plan will move California toward better management of our groundwater resources.

- ***Poor water quality*** – Millions of Californians rely, at least in part, on contaminated groundwater for their drinking water. While most water purveyors blend or treat the water to meet public health standards, many disadvantaged communities cannot afford to do so. In addition, domestic wells are rapidly drying up. All Californians have a right to safe, clean, affordable and accessible water adequate for human consumption, cooking, and sanitary purposes. Safe water is necessary for public health and community prosperity. The actions in this plan will improve the organization of our water quality programs and create new tools to help ensure that every Californian has access to safe water.

- ***Declining native fish species and loss of wildlife habitat*** – California's once robust native fish populations are at or near historic lows. Federal and state fish agencies now list many species of salmon and other fish as endangered and threatened. Wildlife habitat is also being lost at a rapid pace. California's diverse and unique ecosystems are irreplaceable and are part of the complex system that provides and protects California's water resources. Tourism and fishing, reliant on healthy ecosystems, also provide economic benefits to local communities and to the state. The actions defined in this plan include aggressive ecosystem restoration and other actions that will restore fish populations and benefit other wildlife.

- ***Floods*** – Over 7 million Californians live in a floodplain. Our state's capital, Sacramento, has one of the lowest levels of flood protection of any major city in the nation. Climate change will exacerbate this problem because more precipitation will fall as rain rather than snow, snowmelt will be faster and earlier and there will be more extreme weather events. There is a great deal to be done to improve flood protection for existing communities and infrastructure. The actions in this plan will coordinate and streamline flood projects and identify new sources of funding.

- ***Supply disruptions*** – Many parts of California's water system are vulnerable to earthquakes and flooding, particularly the Delta, which serves as the conveyance hub for a substantial percentage of all water supplies in the Bay Area, the San Joaquin Valley, and Southern California. A large earthquake along any of five major faults or a major storm-induced levee failure could render this water supply unusable for urban and agricultural needs for months. The combined benefits of all of the actions in this plan will better prepare us to manage through potential disruptions in the system.

Population growth and climate change further increase the severity of these risks. The state's population is projected to grow from 37 million to 50 million by 2049.[1]

The effects of climate change are already being felt and will worsen. Rising air temperatures and air pollution may already be decreasing the Sierra snowpack, reducing natural water storage, and altering winter and spring flood flows. Higher river and ocean water temperatures will make it harder to maintain adequate habitat for native fish species. Higher ocean temperatures will alter the already changing weather patterns. Sea level rise threatens coastal communities and islands in the Delta. Sea level rise also amplifies the risk that the pumps that supply cities and farms with Delta water will be inundated with sea water in a large earthquake or storms that breach levees. More frequent and more severe dry periods will threaten the health of our natural systems and our ability to meet our diverse water supply and water quality needs.

Fortunately, despite these challenges, there is good progress to report. State, regional, and local agencies have increasingly been pursuing a strategy of making regions more self-reliant by developing new or underused water resources locally. In the future, most new water will come from a combination of improved conservation and water use efficiency, conjunctive use (coordinated management of local surface and groundwater), recycled water, drinking water treatment, groundwater remediation, and desalination. Agencies are also focusing on projects with multiple benefits, such as stormwater capture and floodplain reconnection, that can help simultaneously improve the environment, flood management, and water supplies. These diversified local water portfolios will relieve pressure on foundational supplies and make communities more resilient against drought and climate change.

[1] http://www.dof.ca.gov/research/demographic/reports/projections/view.php California's population will cross the 50 million mark in 2049 and grow to nearly 52.7 million by 2060.

Reliability, Restoration, and Resilience

The actions outlined here are based on three broad objectives: more reliable water supplies, the restoration of important species and habitat, and a more resilient, sustainably managed water system and environment that can better withstand inevitable pressures in the coming decades. These actions reflect an integration of new ideas with the important work that state agencies are already engaged in. Together, these actions address the most pressing water issues that California faces while laying the groundwork for a sustainable and resilient future. All of these actions require coordination and collaboration across levels of government. Together, in the next five years, we must:

1. Make conservation a California way of life;
2. Invest in integrated water management and increase regional self-reliance;
3. Achieve the co-equal goals for the Delta;
4. Protect and restore important ecosystems;
5. Manage and prepare for dry periods;
6. Expand water storage capacity;
7. Provide safe drinking water and secure wastewater systems to all communities;
8. Increase flood protection;
9. Improve operational and regulatory efficiency;
10. Identify sustainable and integrated financing opportunities.

This list is not comprehensive. There are thousands of important projects that are being planned or implemented by all levels of government as well as by conservationists, farmers, water agencies, and others. This fact underscores the breadth and complexity of managing our water resources. But, these are essential actions that California can take in the next five years to set the state on the right course. These actions will, in many cases, require collaboration between state, federal and local governments, regional agencies, Native American tribes, the public, and the private sector. The Legislature is also a key partner. Water has always been among California's most contentious issues. Only by working together, can we improve the state's water future for generations to come.

Actions

1. MAKE CONSERVATION A CALIFORNIA WAY OF LIFE

Californians cannot take their water supply for granted, and must adopt conservation as part of their daily lives. In 2009, the state adopted the Water Conservation Act, through the passage of Senate Bill 7x7, which requires that we achieve a 20 percent reduction in urban per capita water use by December 31, 2020, promotes expanded development of sustainable water supplies at the regional level, and requires agricultural water management plans and efficient water management practices for agricultural water suppliers. The Water Conservation Act also requires that we make incremental progress towards this goal by reducing per capita water use by at least 10 percent by December 31, 2015. We must continue to build on our existing efforts to conserve water, and promote the innovation of new systems for increased water conservation.

- **Expand Agricultural and Urban Water Conservation and Efficiency to Exceed SB7X7 Targets**
  The Administration will expand existing programs to provide technical assistance, shared data and information, and incentives to urban and agricultural local water agencies, as well as local governmental agencies, to enable agricultural and urban water conservation in excess of the amounts envisioned by SB 7X7.

- **Provide Funding for Conservation and Efficiency**
  The administration will work with the Legislature to expand funding for urban and agricultural water use efficiency research, development and implementation through existing programs. The administration will give priority to funding integrated management plans that include robust existing or proposed water conservation measures. Conservation programs must include numeric targets.

- **Increase Coordinated Water-Energy Efficiency**
  The administration will promote regional and local projects that improve the efficiency of how water is pumped, transported, treated, and used. These actions will save water, energy, and money.

- **Promote Local Conservation Ordinances**
  The City of Los Angeles prohibits certain types of water use for all of its citizens in an effort to conserve water. Examples of the prohibited water use include: watering of any hard surfaces such as sidewalks, walkways, driveways or parking areas; outdoor watering during periods of rain; and serving water to customers in restaurants unless specifically requested. Other cities should follow this example and consider ways their communities can reduce water usage.

2. INCREASE REGIONAL SELF-RELIANCE AND INTEGRATE WATER MANAGEMENT ACROSS ALL LEVELS OF GOVERNMENT

While California has a vast state and federal managed infrastructure to store and deliver water miles from its origin, the majority of infrastructure, management, and investment reside at the local and regional levels. Sometimes that management comes in the form of regional multi-issue agencies dealing with flood control, water supply, and water quality. Other times, individual agencies deal with those issues separately. Over the past decade, the state has assisted regions in coming together in what is known as Integrated Water Management Planning, where multiple entities create a regional plan that integrates local agency water management infrastructure and operations to create new efficiencies and serve multiple purposes. State grants are provided to incentivize both regional integration and to leverage local financial investment.

Ensuring water security at the local level includes efforts to conserve and use water more efficiently, to protect or create habitat for local species, to recycle water for reuse, to capture and treat stormwater for reuse, and to remove salts and contaminants from brackish or contaminated water or from seawater. But, mostly it requires integrating disparate or individual government efforts into one combined regional commitment where the sum becomes greater than any single piece.

- **Support and Expand Funding for Integrated Water Management Planning and Projects**
  The administration will work with the Legislature to enhance the Integrated Water Management Planning program. Providing funding for locally-driven, multi-benefit projects is critical. The administration will target funding to local projects that increase regional self-reliance and result in integrated, multi-benefit solutions for ensuring sustainable water resources.

- **Update Land Use Planning Guidelines**
  The Governor's Office of Planning and Research will engage local land use authorities and water agencies and amend the general plan guidelines to promote local land use decisions that are consistent with local sustainable water management.

- **Legislation for Local Self Reliance**

The administration will work with the Legislature to encourage local governments to adopt or amend local ordinances that enhance local water supply reliability and conservation, such as ordinances that establish minimum requirements for infiltration of water into the groundwater table, detection and prevention of utility system leaks, landscaping measures, and indoor/outdoor water use efficiency standards.

- **Demonstrate State Leadership**

All state agencies should take a leadership role in designing new and retrofitted state owned and leased facilities to increase water efficiency, use recycled water, and incorporate stormwater runoff capture and low-impact development strategies.

- **Provide Assistance to Disadvantaged Communities**

The administration will provide technical assistance, tools, and allocate dedicated funds for grant administration, project development and stakeholder collaboration to under-represented and economically-disadvantaged communities to promote greater participation and success in regional grant programs.

- **Encourage State Focus on Projects with Multiple Benefits**

The administration will direct relevant agencies and departments to evaluate existing programs and propose modifications to incentivize, recognize, and co-fund multi-benefit projects and integrated water management planning, such as stormwater permitting for cities and counties.

- **Increase the Use of Recycled Water**

California needs more high-quality water and recycling is the key to getting there. The state will adopt uniform water recycling criteria for indirect potable reuse of recycled water for groundwater recharge, and develop criteria for direct potable reuse (surface water augmentation).

- **Streamline Permitting for Local Water Reuse or Enhancement Projects**

The administration will review and propose measures to streamline permitting for local projects that make better use of local water supplies such as recycling, stormwater capture, and desalination of brackish and sea water.

3. ACHIEVE THE CO-EQUAL GOALS FOR THE DELTA

The Delta is California's major collection point for water, serving two-thirds of our state's population and providing irrigation water for millions of acres of farmland. The region supports farming, wetland and riparian habitats, as well as numerous fish and wildlife species. In recent years, important fish populations have declined dramatically, leading to historic restrictions on water supply deliveries. Moreover, the current system relies on water flowing through a network of fragile levees from the northern part of the Delta to the pumps in the south, where two out of three fish trapped near the pumps die. These levees were not designed to resist a significant seismic event, the probability of which is greater than 60 percent over the next 50 years. They are also vulnerable to major floods and rising sea levels, all of which puts unacceptable risk on the people who live in the Delta as well as the water supply for 25 million people and 3 million acres of farmland. Plans are underway to address these problems. The issues are contentious and have been for decades. But, the status quo in the Delta is unacceptable and it would be irresponsible to wait for further degradation or a natural disaster before taking action.

The Delta Stewardship Council was created in legislation to achieve the state-mandated co-equal goals of providing a more reliable water supply for California and to protect, restore, and enhance the Delta ecosystem. Those two goals are to be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place. The council recently adopted its Delta Plan and will establish a high-level interagency coordinating body to commence implementation of a suite of actions designed to achieve the co-equal goals. The Implementation Committee can play a strong role in moving forward on the actions included in this plan, which include and build on many of the priorities included in the council's Delta Plan.

- **Begin Implementation of the Delta Plan**

The administration directs all of its relevant agencies to fully participate in the Implementation Committee established by the Delta Stewardship Council.

- **Complete Comprehensive Plans to Recover Populations of Threatened and Endangered Species in the Delta and Improve Water Supply Reliability for Users of Delta Water**

State and federal agencies will complete planning for a comprehensive conservation strategy aimed at protecting dozens of species of fish and wildlife in the Delta, while permitting the reliable operation of California's two biggest water delivery projects. The Bay Delta Conservation Plan (BDCP) would help secure California's water supply by building new water delivery infrastructure and operating the system to improve the ecological health of the Delta. It would also restore or protect approximately 145,000 acres of habitat to address the Delta's environmental challenges. The BDCP is made up of specific actions, called conservation measures, to improve the Delta ecosystem. It includes 22 conservation measures aimed at improving water operations, protecting water supplies and water quality, and restoring the Delta ecosystem within a stable regulatory framework. The project will be guided by 214 specific biological goals and objectives, improved science, and an adaptive management approach for operating the water conveyance facilities and implementing other conservation measures including habitat restoration and programs to address other stressors. As the Delta ecosystem improves in response to the implementation of the conservation measures, water operations would become more reliable, offering secure water supplies for 25 million Californians, an agricultural industry that feeds millions, and a thriving economy.

State and federal agencies will complete the state and federal environmental review documents; seek approval of the BDCP by the state and federal fishery agencies; secure all permits required to implement the BDCP; finalize a financing plan; complete the design of BDCP facilities; and, begin implementation of all conservation measures and mitigation measures, including construction of water conveyance improvements. Once the BDCP is permitted, it will become part of the Delta Plan.

- **Restore Delta Aquatic and Intertidal Habitat**

In coordination with restoration proposed by the BDCP, a specific set of projects or acreage for restoration will be identified in the six priority areas listed in the Delta Plan: (1) Yolo Bypass; (2) Cache Slough Complex; (3) the confluence of the Cosumnes and Mokelumne rivers; (4) the lower San Joaquin River floodplain; (5) Suisun Marsh; and, (6) western Delta/eastern Contra Costa County. The Department of Water Resources, in consultation and coordination with the Department of Fish and Wildlife, the Delta Science Program, and the Delta Plan Implementation Committee will initiate projects to restore 8,000 acres of intertidal and associated subtidal habitat in the Delta and Suisun Marsh.

- **Implement Near-Term Delta Improvement Projects**

In coordination with restoration proposed in BDCP, the Department of Water Resources will initiate a project to remove fish passage barriers within the Yolo Bypass and modify the Fremont Weir to increase the amount and quality of fish rearing habitat by improving access to seasonal floodplain habitat.

- **Maintain Important Infrastructure**

The Department of Water Resources will continue implementation of the Delta Levees Subventions, Delta Special Projects, and Floodway Corridor Programs to provide financial assistance to local agencies for repair and improvement of levees and other multipurpose projects in the Delta.

- **Bay Delta Water Quality Control Plan**

The State Water Resources Control Board (State Water Board) will complete its update of the Water Quality Control Plan for the Delta and its upstream watersheds. The plan establishes both regulatory requirements and recommended actions. The State Water Board's action will balance competing uses of water including, municipal and agricultural supply, hydropower, fishery protection, recreation, and other uses.

4. PROTECT AND RESTORE IMPORTANT ECOSYSTEMS

Streams and rivers once ran freely from high in the mountains to downstream reaches, meandering naturally through lowland and floodplain habitats, connecting with coastal estuaries and the Pacific Ocean. The variability of natural water flows in this complex system created vibrant and resilient habitat for many species and functioned to store water, recharge groundwater, naturally purify water, and moderate flooding. Over 80 percent of the Central Valley's historical floodplain, riparian, and seasonal wetland habitats have been lost in the last 150 years. This loss affects the physical and ecological processes of the Central Valley and beyond, contributes to the decline of salmon and steelhead, restricts habitat for waterfowl and other species, and impacts water supply, flood protection, and sediment control. In watersheds around the state, fish and wildlife no longer have access to habitat or enough cold, clean water at key times of the year. In response to these losses and ecological challenges, as well as in anticipation of the effects of climate change on the timing, volume and temperature of water flows, activities to protect and restore the resiliency of our ecosystems will help support fish and wildlife populations, improve water quality, and restore natural system functions. This effort will increase collaboration and transparency and ensure that management decisions are supported by the best available science.

- **Restore Key Mountain Meadow Habitat**

The Department of Fish and Wildlife in coordination with other state resource agencies will restore 10,000 acres of mountain meadow habitat in strategic locations in the Sierra Nevada and Cascade mountain ranges, which can increase groundwater storage and provide habitat for more than 100 native species, many of which are at risk as threatened or endangered.

- **Bring Back Salmon to the San Joaquin River**

The Department of Fish and Wildlife and the Department of Water Resources will lead the effort to achieve the state goal of restoring flows to the San Joaquin River from Friant Dam to the confluence of the Merced River, and bringing back a naturally-reproducing, self-sustaining Chinook salmon fishery while reducing or avoiding adverse water supply impacts. Chinook will be reintroduced pursuant to the San Joaquin River Restoration Program, and the Department of Fish and Wildlife will complete construction of the conservation hatchery and research facility. The administration will work with the Legislature and others to secure further funding as necessary to achieve these activities and the restoration goal.

- **Protect Key Habitat of the Salton Sea Through Local Partnership**

The Natural Resources Agency, in partnership with the Salton Sea Authority, will coordinate state, local, and federal restoration efforts and work with local stakeholders to develop a shared vision for the future of the Salton Sea. The Salton Sea is one of the most important migratory bird flyways in North America and is immediately threatened with reduced inflows and increasing salinity. The Department of Fish and Wildlife and the Department of Water Resources will begin immediately to implement the first phase of this effort with the construction of 600 acres of near shore aquatic habitat to provide feeding, nesting, and breeding habitat for birds. This project is permitted to increase to 3,600 acres and could be scaled even greater with additional resources. Concurrently, the Natural Resources Agency and the Salton Sea Authority are developing a roadmap for the Salton Sea that will evaluate additional restoration projects and identify economic development opportunities through renewable energy development.

- **Continue Restoration Efforts in the Klamath Basin**

The Department of Fish and Wildlife and the Natural Resources Agency will continue to work with diverse stakeholders to implement the Klamath Basin restoration and settlement agreements. Those agreements include measures to improve water quality in the Klamath River, restore anadromous fish runs, including Chinook and Coho salmon, and improve water reliability for agricultural and other uses by providing a drought planning mechanism for low water years. The administration will work with Congress to secure the necessary federal authorizations for the agreements and secure the necessary funding for removal of four hydroelectric dams on the Klamath River and funding for the necessary basin restoration.

- **Restore Coastal Watersheds**

The Department of Fish and Wildlife in coordination with other state resource agencies will develop at least 10 off-channel storage projects, modernize at least 50 stream crossings, and implement at least 10 large-scale habitat projects along the California coast in strategic coastal estuaries to restore ecological health and natural system connectivity, which will benefit local water systems and help defend against sea level rise.

- **Water for Wetlands and Waterfowl**

The Department of Fish and Wildlife in coordination with other state resource agencies will develop and implement a water acquisition, management, and water use efficiency strategy in coordination with the U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, Central Valley Project Improvement Act refuge water program, and Central Valley Joint Venture to secure reliable and affordable water for managed wetlands statewide. The administration will work with the Legislature, and others, to secure funding to acquire water and to replace or repair the most in need conveyances for delivering water for wetlands.

- **Eliminate Barriers to Fish Migration**

This action has three parts. First, in coordination with the Central Valley Project Improvement Act Anadromous Fish Screen Program, the Department of Fish and Wildlife will create and publish a Priority Unscreened Diversion List in the Central Valley area. Second, the administration will work with the Legislature, and others, to secure funding to install or repair the top 10 unscreened diversions on the priority list described above. Third, in smaller watersheds around the state, the Department of Fish and Wildlife will complete a comprehensive analysis, working with other state resources agencies, to optimize barrier removal projects and river and stream priorities, and then complete 10 culvert and bridge improvement and small dam removal projects annually to provide anadromous fish species access to historic spawning and rearing habitat.

- **Assess Fish Passage at Large Dams**

The Department of Fish and Wildlife, in coordination with state and federal resource agencies, will develop a strategic evaluation process for addressing fish passage for California's rim dams and develop six rim dam solution plans. Rim dams are the large dams at the base of most major river systems in California. They are too integral to California's water infrastructure to consider removing, but, where feasible, passage around the rim dams may be necessary to recover salmon and steelhead, because 95 percent of the historical habitat for these fish is above the dams.

- **Enhance Water Flows in Stream Systems Statewide**

The State Water Board and the Department of Fish and Wildlife will implement a suite of individual and coordinated administrative efforts to enhance flows statewide in at least five stream systems that support critical habitat for anadromous fish. These actions include developing defensible, cost-effective, and time-sensitive approaches to establish instream flows using sound science and through a publicly transparent process, taking actions necessary to maintain fish in good condition through authorities such as Fish and Game Code section 5937, and promoting off-stream water storage.

5. MANAGE AND PREPARE FOR DRY PERIODS

Water supply reliability is critical to maintaining California's economy. Temporary shortages caused today by extended, severe dry periods will become more frequent with climate change. Effective management of water resources through all hydrologic conditions will reduce impacts of shortages and lessen costs of state response actions. Many actions will help to secure more reliable water supplies and consequently improve drought preparedness. The actions identified below are specifically designed to address drought conditions and make California's water system more resilient.

- **Revise Operations to Respond to Extreme Conditions**

State natural resources and water quality agencies, in collaboration with their federal counterparts, will implement a series of administrative solutions through a transparent process to make water delivery decisions and propose options to address water quality and supply objectives in extreme conditions. Through these state agencies, the administration will exercise the maximum administrative discretion and flexibility possible to address the current dry conditions now and into 2014. Especially in drought conditions, adaptive management can have substantial fishery, water quality, and water supply benefits. The identification of such opportunities requires continued improved water forecasting and prompt inter and intra agency coordination and communication. It also requires an effective coordination mechanism involving the Department of Water Resources, the Bureau of Reclamation, the State Water Project and the Central Valley Project contractors, the state and federal fishery agencies, and the State Water Board, at a minimum.

- **Streamline Water Transfers**

State agencies, in collaboration with their federal counterparts, will take all feasible steps to streamline water transfer processes to address both extreme situations and normal system operations. These include refining the schedule for the water transfers process; improving outreach in support of local water transfer programs; forming work groups to prioritize technical issues and define specific objectives to address real water supply, cumulative impacts, and third party impacts; preparing a technical information guide for those intending to propose water transfer proposals; and, identifying and evaluating measures to simplify the transfer process and reduce the cost of transfers. This action will not focus solely on additional process at the expense of implementing simple measures such as identifying a single agency point of contact, assigning dedicated staff to a multi-agency review team, and regular coordination with transfer applicants to resolve conflicts.

6. EXPAND WATER STORAGE CAPACITY

On average, the state receives about 200 million acre-feet of water per year in the form of rain and snow. In reality, the average rarely occurs, as California has the most variable weather conditions in the nation and climate change may increase the variability. To deal with this challenge, storage, whether surface storage or groundwater storage, is a method to save water when it flows heavily for use at times when it does not and create greater flexibility in the system. Above ground, or surface storage, can be in the form of large on-stream dams and reservoirs, or smaller on-stream and off-stream reservoirs. Groundwater storage consists of replenishing groundwater basins either directly through injection, or by allowing water to percolate into the ground naturally or from constructed spreading basins. Constructing surface storage can be challenging for environmental or financial reasons. Developing groundwater storage can be challenging because many basins are contaminated and this method of storage also requires an ability to measure and withdraw water.

The bottom line is that we need to expand our state's storage capacity, whether surface or groundwater, whether big or small. Today, we need more storage to deal with the effects of drought and climate change on water supplies for both human and ecosystem needs. Climate change will bring more frequent drought conditions and could reduce by half our largest natural storage system—the Sierra snowpack—as more precipitation falls as rain rather than snow, and as snow melts earlier and more rapidly. Moreover, we must better manage our groundwater basins to reverse alarming declines in groundwater levels, leading to land subsidence, which is irreversible once it occurs, poor water quality, ecosystem impacts, and the permanent loss of capacity to store water as groundwater.

For over a decade, we have been working on feasibility studies for large surface storage projects that are due to be completed by year's end. These projects face both environmental challenges and financial challenges. But, the biggest obstacle may be finding committed financial partners who will benefit from the projects to share in their cost.

Public water agencies have been reluctant to partner with the federal and state government to build new water storage projects in part because of the uncertainty involved in moving water across the Delta. The new conveyance system proposed in the Bay Delta Conservation Plan would provide more water project operational flexibility, which in turn would eventually eliminate some of that uncertainty and increase the feasibility of additional water storage. Partnerships to build additional water storage presumably would follow.

Demand for water goes well beyond water supply and flood control, the traditional purposes for which California's major reservoirs were built. Today, water storage is also needed to help provide widespread public and environmental benefits, such as seasonal fish flows, improved water quality, water cool enough to sustain salmon, and increased flexibility to meet multiple demands. The financing of additional water storage in California must reflect not just specific local benefits, but also those broader public benefits.

- **Support Funding Partnerships for Storage Projects**

The administration will work with the Legislature to make funding available to share in the cost of storage projects if funding partners step forward. The state will facilitate among willing local partners and stakeholders the development of financeable, multi-benefit storage projects.

- **Update Bulletin 118, California's Groundwater Plan**

The Department of Water Resources, in consultation with the Bureau of Reclamation, U.S. Geological Survey, the State Water Resources Control Board, and other agencies and stakeholders should update Bulletin 118 information using field data, California Statewide Groundwater Elevation Monitoring (CASGEM), groundwater agency reports, satellite imagery, and other best available science, so that this information can be included in the next California Water Plan Update and be available for inclusion in future urban water management plans and agricultural water management plans. The Bulletin 118 update should include a systematic evaluation of major groundwater basins to determine sustainable yield and overdraft status; a projection of California's groundwater resources in 20 years if current groundwater management trends remain unchanged; anticipated impacts of climate change on surface water and groundwater resources; and recommendations for state, federal, and local actions to improve groundwater management. In addition, the Bulletin 118 update should identify groundwater basins that are in a critical condition of overdraft.

- **Support Distributed Groundwater Storage**

The administration will support a comprehensive approach to local and regional groundwater management by funding distributed groundwater storage projects that are identified in groundwater management plans and removing barriers to implementation.

- **Improve Sustainable Groundwater Management**

When well-managed, groundwater has the potential to be a buffer to the impacts of climate change on our water system. The administration will work with the Legislature to ensure that local agencies have the incentives, tools, authority, and guidance to develop and enforce local and regional management plans that protect groundwater elevations and quality. The administration will take steps, including sponsoring legislation if necessary; to define local responsibilities and to give local agencies the authority necessary to manage groundwater sustainably and ensure no groundwater basin is in danger of being permanently damaged by over drafting. When a basin is at risk of permanent damage, and, after having been provided the needed authority, local agencies do not make sufficient progress to correct the problem in a timely manner; the state should have carefully-defined authority to protect the basin and its users until an adequate local program is established.

- **Accelerate Clean-up of Contaminated Groundwater and Prevent Future Contamination**

Throughout the state, groundwater basins are contaminated by historic manufacturing and farming practices. This water is an important resource in itself for the future, and these basins will be critical storage repositories in the future. The Department of Toxic Substances Control and the State Water Board will develop recommendations to prevent the spread of contamination, accelerate cleanups and protect drinking water.

7. PROVIDE SAFE WATER FOR ALL COMMUNITIES

All Californians have a right to safe, clean, affordable and accessible water adequate for human consumption, cooking, and sanitary purposes. Disadvantaged communities, in particular, often struggle to provide an adequate supply of safe, affordable drinking water. The reasons for this are numerous: changes in drinking water quality standards, pollution, aging infrastructure, lack of funding for basic infrastructure, lack of funding for ongoing operation and maintenance, and unreliable supplies resulting in service interruptions are among the most common. Programs designed to protect the quality of our waters for drinking and other uses are housed in multiple agencies, reducing their effectiveness and ability to meet communities' needs.

- **Consolidate Water Quality Programs**

The administration is pursuing consolidation of the drinking water and surface and groundwater quality programs into a single agency to achieve broader program efficiencies and synergies that will best position the state to respond to existing and future challenges. This initiative will also better restore and protect water quality and public health for disadvantaged communities.

- **Provide Funding Assistance for Vulnerable Communities**

The administration will work with the Legislature to establish a stable, long-term funding source for provision of safe drinking water and secure wastewater systems for disadvantaged communities. The funding will be made available through a framework of statutory authorities for the state, regional organizations, and county agencies that will assess alternatives for providing safe drinking water and wastewater, including regional consolidation, and to develop, design, implement, operate, and manage these systems for small disadvantaged communities impacted by contaminated drinking water and lack of sanitary wastewater infrastructure.

- **Manage the Supply Status of Community Water Systems**

The state will identify drought vulnerable public water systems and monitor the status of these systems to help prevent or mitigate any anticipated shortfalls in supply and to secure alternative sources of water for the communities when needed. The state will also work with local governments and agencies to identify drought vulnerable areas served by domestic wells and collaborate to prevent or mitigate any anticipated shortfalls.

8. IMPROVE FLOOD PROTECTION

California's exposure to flood risk presents an unacceptable threat to public safety, infrastructure, and our economy. More than 7 million people and $580 billion in assets are exposed to flood hazards in the state and the lack of sufficient and stable funding for flood control exacerbates the state's risk. When California floods, public safety and health is endangered, critical infrastructure is damaged, vital services become isolated or interrupted, vast agricultural areas are rendered unproductive, and water supplies are threatened or impacted. The effects of climate change on the state's water runoff patterns will only magnify these challenges. Actions by state, local and regional governments, however, can reduce flood risks and improve the state's preparedness and resiliency when flooding inevitably occurs. Flood projects done in an integrated, regionally-driven way can also achieve multiple benefits.

- **Funding to Reduce Flood Risk and Improve Flood Response**

An estimated $50 billion is needed to reduce flood risk statewide. The administration will focus on the highest risk areas and develop proposals to fund projects through a combination of financing options.

- **Remove Barriers to Local and Regional Funding for Flood Control Projects**

The administration will review changes needed to the 1996 Right to Vote on Taxes Act (Proposition 218) to include certain flood management agencies as exempted public safety utilities to enable these agencies to assess the funds needed for flood planning and the construction, operation, and maintenance of flood control infrastructure.

- **Streamline and Consolidate Permitting**

The administration will convene a task force of federal, state, and local permitting and flood management agencies, to develop a programmatic regulatory permitting process to replace current site-by-site mitigation requirements and expedite permitting of critical flood system improvement projects. The effort to streamline and consolidate will also incorporate regional advanced mitigation as a means to expedite planning.

- **Create a Delta Levee Assessment District**

The administration will sponsor legislation establishing a Delta levee assessment district with authority to collect fees needed to repair and maintain more than a thousand miles of Delta levees, many of them privately constructed before modern engineering standards were in place.

- **Improve Access to Emergency Funds**

The administration will sponsor legislation revising the California Disaster Assistance Act to enhance the Governor's Office of Emergency Services' ability to advance funds for flood response efforts and establish an emergency flood response fund maintained by the Department of Water Resources.

- **Better Coordinate Flood Response Operations**

The Governor's Office of Emergency Services, working in coordination with the Department of Water Resources, the U.S. Army Corp of Engineers, and others, will develop and implement a common interagency protocol that all jurisdictions and agencies at all levels of government operating in the Delta in an emergency will use to establish joint field incident commands for flood operations and other emergency response functions.

- **Identify State Funding Priorities for Delta Levees**

The Delta Stewardship Council, in consultation with the Department of Water Resources, the Central Valley Flood Protection Board, the Delta Protection Commission, local agencies, and the California Water Commission, should develop funding priorities for state investments in Delta levees by January 1, 2015. These priorities will be consistent with the provisions of the Delta Reform Act in promoting effective, prioritized strategic state investments in levee operations, maintenance, and improvements in the Delta for both levees that are a part of the State Plan of Flood Control and non-project levees. The priorities should identify guiding principles, constraints, recommended cost share allocations, and strategic considerations to guide Delta flood risk reduction investments.

9. INCREASE OPERATIONAL AND REGULATORY EFFICIENCY

Efficiently operating the State Water Project and Central Valley Project, while complying with the requirements of state and federal endangered species acts and operating consistent with the conditions of water rights, contracts and other entitlements, is a delicate balancing act. Current coordination efforts, while longstanding and intended to cover a broad range of conditions, are not reflective of the entire Delta watershed nor are they effective at integrating all of the activities that other agencies and organizations are undertaking to improve the ecosystem.

- **Prepare for 2014 and Beyond Through Better Technology and Improved Procedures**

The administration will work with our federal and regional counterparts to improve coordination of operations of all major water supply (storage facilities and direct diversions), flood control, hatchery facilities, and habitat restoration projects to improve water supply and fishery conditions. The goals are to improve water project near-term operational flexibility for water year 2014 and build upon those actions in subsequent years. Better technology can result in improved coordination and more accurate data for decision making. Examples of better technology and improved coordination include but are not limited to the following:

  - Improve data availability, communication procedures, and analytical methods used to monitor and communicate risks to listed fish species and to water supplies when making regulatory decisions associated with implementation of incidental take provisions in the existing biological opinions.
  - Develop a pilot project to test if a new index for Old River and Middle River reverse flows enables compliance with biological opinion requirements.
  - Develop and employ new turbidity models to improve real-time turbidity management in the south Delta.
  - Analyze through the South Delta Science Collaborative associated operational approaches for minimizing loss of salmon in the area of the Old River barrier and effects of the operations on water supply.
  - Develop a Delta smelt life cycle model to help manage operations to avoid entrainment of smelt at the water projects' intakes.
  - Implement a 3.5-year study to enhance and modernize Delta smelt monitoring (fish abundance and geographic distribution in the Delta), to improve the ability to protect fish populations while minimizing the impacts of fish protective measures on water project operations.
  - Work with federal agencies to improve coordination of hatchery fish releases with hydrologic conditions and water project operations to improve fish survival.
  - Improve state and federal interagency coordination and water contractor coordination on real-time forecasting and management associated with meeting water quality control objectives, to optimize project operations and avoid redirected fishery impacts.
  - Fund and revive the National Hydrological Dataset for California to improve high-quality framework geospatial data and the precision and accuracy of mapping and scientific studies.

- **Improve and Clarify Coordination of State Bay Delta Actions**

  The problems affecting the Delta need to be addressed on multiple fronts, including habitat loss, export conveyance, water projects operations, pollution control, and flows. The principal state entities charged to address these issues are the Delta Stewardship Council, Department of Water Resources, Department of Fish and Wildlife, and the State Water Resources Control Board. Several federal agencies exercise regulatory authority related to these issues. There are also multiple water districts, private parties, and nongovernmental organizations with a profound stake in these issues.

  A coordinated approach to managing the Delta is essential to serve the needs of California's residents. State agencies will commit to using collaborative processes to achieve water supply, water quality and ecosystem goals. This approach embraces enhanced sharing of data, consistent use of peer-reviewed science, coordinated review under CEQA, improved integration of related processes, and encouragement of negotiated resolutions.

- The Delta Stewardship Council, Department of Water Resources, Department of Fish and Wildlife, and the State Water Resources Control Board will ensure all relevant information is shared and will assist each other, as appropriate, to complete respective efforts to improve Delta conditions.
- State entities will encourage negotiated agreements among interested parties to implement flow and nonflow actions to meet regulatory standards and support all beneficial uses of water. State staff will participate in these processes when requested.
- The Delta Stewardship Council's Implementation Committee, which includes leaders from all the affected state entities, and will meet regularly to review progress in coordination.

- **Achieve Ecological Goals through Integrated Regulatory and Voluntary Efforts**

The San Francisco Bay and Sacramento-San Joaquin River Delta are some of the most studied ecosystems in the nation. Similarly, many scientific and management plans exist concerning the decline of salmon and steelhead in California. A fundamental ecological principle is that aquatic species and estuarine ecosystems need enough cold, clean water at the right times of year to ensure species abundance and health and ecological function. Too often, regulatory processes overlook the value of voluntary programs to achieve ecological goals. Too often, different regulatory processes are not integrated, connected, or even cognizant of each other. Integration across and between all voluntary and regulatory efforts may be necessary to truly achieve basic ecological outcomes.

As a goal, the state must continue to consider how to provide water flows necessary to meet current state policy, such as significantly increasing salmon, steelhead, and trout populations while also supporting viable, self-sustaining populations of a broad range of other native aquatic species, and ensure sustainable river and estuary habitat conditions for a healthy, functional Bay Delta ecosystem. The administration, with the involvement of stakeholders, will build on the work in tributaries to the Sacramento and San Joaquin rivers, analyze the many voluntary and regulatory proceedings underway related to flow criteria, and make recommendations on how to achieve the salmon and steelhead and ecological flow needs for the state's natural resources through an integrated, multi-pronged approach.

10. IDENTIFY SUSTAINABLE AND INTEGRATED FINANCING OPPORTUNITIES

California has a long history of making sound financial investments in water resources. However, our current investments are not keeping pace with the need. Our infrastructure is aging, levees are in need of repair, communities are without safe water, and our environment, farms, and economy are suffering from unreliable and degraded water supplies. This plan includes actions that will require multiple funding sources. We have access to a variety of funding sources including federal grants and loans, general obligation bonds, revenue bonds, rate payer dollars, local initiatives, user fees, beneficiary fees, local and statewide taxes, private investment, public-private partnerships, and more. A better understanding of the variety and types of funds and financing available for water investment will help us to make the best, most efficient and sustainable uses of the funding available.

- **Develop Water Financing Strategy**

The administration will develop a water financing strategy that leverages various sources of water-related project funding and proposes options for eliminating funding barriers, including barriers to co-funding multi-benefit projects. The strategy will identify all potential funding sources for water-related projects including auction revenue, energy efficiency funds, user and beneficiary fees, polluter fees, local measures, and other sources and will establish principles to guide the use of these funding sources.

- **Remove Barriers to Local and Regional Funding for Water Projects**

The administration will review changes needed to the 1996 Right to Vote on Taxes Act (Proposition 218) to better enable water management agencies to assess the funds needed to protect public health and maintain safe, secure and sustainable water resources for their rate payers.

- **Analyze User and Polluter Fees**

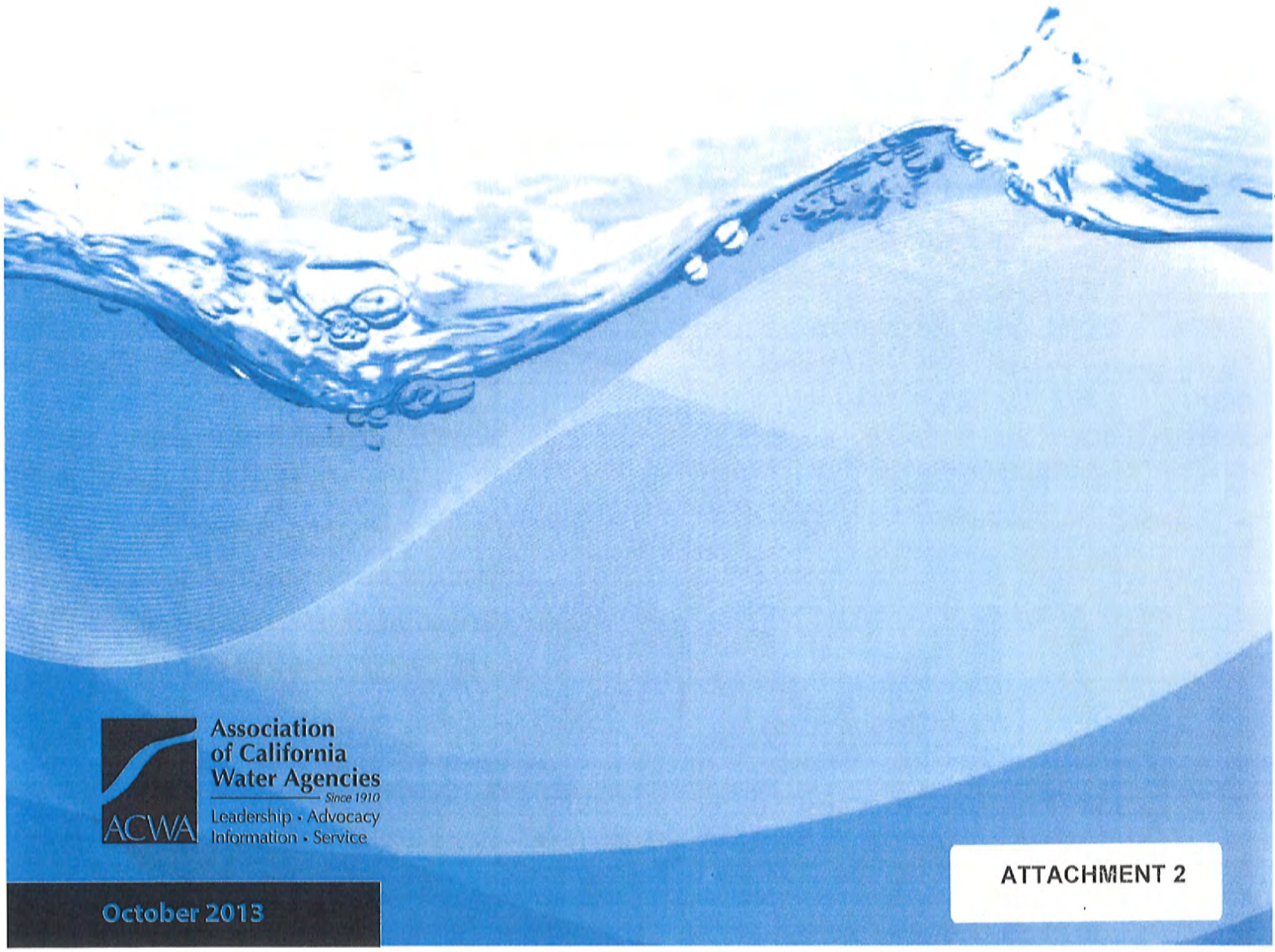
The administration will direct agencies to identify areas where user and/or polluter fees may be appropriate. The agencies will assess the following: Areas where users may not be fully funding the costs or impacts associated with their use, instances where polluters are not able to diminish their pollution and have not adequately accounted for the impacts of that pollution, and opportunities to use fees to incentivize positive behavior. The agencies will provide recommendations on fees, who would pay them, how they would be collected, and how they would be used.

Conclusion

All Californians have a stake in our water future. These actions set us on a path toward reliability, restoration, and resilience in California water. California's impending water crisis requires that we adapt to this "new normal" and recapture California's resource management leadership and our economic and environmental resilience and reliability. There are no silver bullets or single projects that will "fix the problem." We must have a portfolio of actions to comprehensively address the challenges this state faces. Some actions must be taken immediately to address current risks such as the looming drought and inadequate safe drinking water. Additionally, over the next five years we must address fundamental changes in our approach to water resource management and be prepared for the changes the future holds.

ASSOCIATION OF CALIFORNIA WATER AGENCIES

STATEWIDE WATER ACTION PLAN FOR CALIFORNIA



Association of California Water Agencies
Since 1910
Leadership • Advocacy
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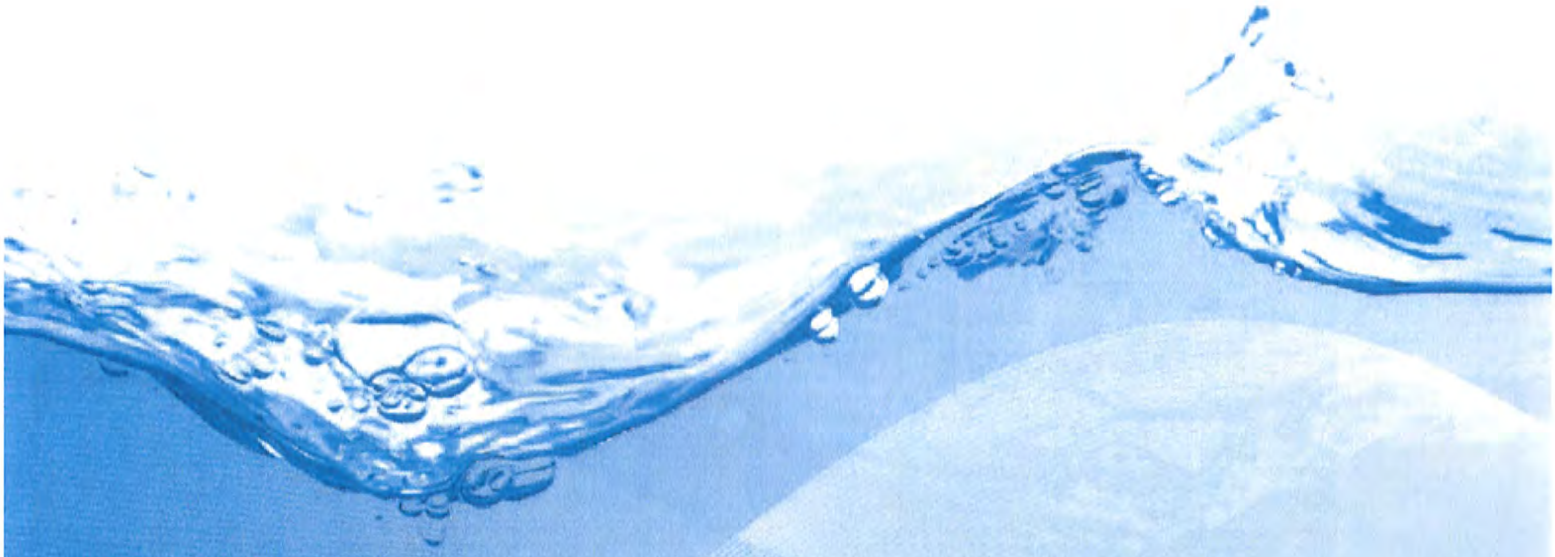
ATTACHMENT 2

October 2013

About the Statewide Water Action Plan

The Association of California Water Agencies (ACWA) convened a broad cross-section of member water interests in spring 2013 to develop a statewide plan addressing the state's overall water supply reliability and ecosystem health. The goal was to craft a specific plan that could be broadly supported by water interests throughout the state and serve as a sustainable path forward for California.

The resulting Statewide Water Action Plan was completed in September and unanimously approved by the ACWA Board of Directors on Sept. 27, 2013. ACWA submitted the Statewide Water Action Plan to California Governor Edmund G Brown Jr. on Oct. 2, 2013, as the water community's recommendations for developing the Administration's water plan for the state.



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ACWA's mission is to assist its members in promoting the development, management and reasonable beneficial use of good quality water at the lowest practical cost in an environmentally balanced manner.

ASSOCIATION OF CALIFORNIA WATER AGENCIES

STATEWIDE WATER ACTION PLAN FOR CALIFORNIA

Introduction

California's complex water management system is facing unprecedented challenges. Local investments in water supply reliability and ecosystem health have built upon the legacy infrastructure projects that served us well in the past, but the backbone water supply system we rely on today no longer satisfies the state's needs. California's statewide water system cannot respond effectively to our growing population, changing ecosystem needs, increasing flood risks and consecutive years of drought. Climate change and its impacts on public safety and long-term water supply reliability also pose a significant challenge to this generation of water and flood managers.

These problems are extraordinary, and their solutions will require an extraordinary commitment from state, local and federal agencies. They also will require a more evolved regulatory approach that will allow the system to operate efficiently and predictably to meet 21st century water supply and ecosystem needs.

The state has recognized the need for action in venues and initiatives such as the Department of Water Resources' (DWR) California Water Plan, the Delta Stewardship Council's Delta Plan, and the multi-agency Bay Delta Conservation Plan (BDCP). Now California's public water agencies are stepping forward to recommend this set of principles and actions to enhance these individual efforts and integrate them in a comprehensive Statewide Water Action Plan. Our recommended plan, submitted to the Governor for his consideration, provides context for a Delta solution and other critical actions as components of a broader set of strategies to address overall water supply reliability and ecosystem health in California.

When implemented together, this suite of statewide actions will serve as a sustainable path forward for California. Governor Brown's leadership and commitment will be central to the success of this action plan and to moving water policy forward in California.

Guiding Principles for Implementation of the Statewide Water Action Plan

1. **Long-term water supply reliability and improved ecosystem health** are the core objectives of this statewide water action plan. In the course of achieving them, however, we must ensure that one region's increased reliability does not adversely affect another's near- or long-term water supplies.

2. **A new regulatory approach** is essential to reflect today's realities and better serve the needs of California water users and the ecosystem. This is critical if we are to reduce scientific uncertainty and incorporate new understanding of operational and ecosystem dynamics. Under the current approach, regulatory agencies tend to focus only on their specific goals, resulting in duplicative and contradictory requirements that fail to deliver benefits to our water supply, water quality or ecosystem. To combat this, state agencies should commit to using collaborative processes as extensively and transparently as possible to achieve regulatory goals in a way that satisfies water supply, water quality, and ecosystem needs. This new approach should embrace enhanced sharing of data, consistent use of peer-reviewed science (including climate change models), coordinated review under the California Environmental Quality Act (CEQA), and improved integration and coordination of all related processes. This approach will help ensure continued ecosystem protections and increase the water community's confidence that regulatory investments will achieve benefits.

3. **The best available science** should be used to support every action, report or decision made as part of this Statewide Water Action Plan. The science should be inclusive, objective, transparent, and peer reviewed.

4. **Water rights and contract terms**, including area-of-origin protections, are foundational to our water system and should be respected and adhered to whenever projects and initiatives are implemented. State and federal facilities should be operated consistent with the conditions of water rights, contracts, and other entitlements.

5. **Bold actions guided by strong leadership** at the state, federal and local levels are essential for the successful implementation of this action plan. In particular, increased commitments by federal partners are needed to ensure the plan moves forward. The Department of Water Resources should provide leadership and support for these efforts from the department's highest level.

6. **Financing:** The state should fund investments that provide broad public benefits such as improved water supply reliability, water quality and ecosystem health. The state should also incentivize local projects that advance statewide water priorities and require public assistance to be cost effective.

Statewide Actions

To be most effective, the following suite of statewide actions should be implemented as a comprehensive package. Indeed, many elements — including a Delta conveyance solution — are much more likely to succeed if they are part of a broader action plan. Statewide support for the action plan is essential. Advancing all elements of the plan simultaneously will help secure and maintain that support and build a statewide coalition capable of achieving these ambitious goals.

1. Storage

California's water infrastructure has proven inadequate to meet the state's needs in a two-year drought, let alone a multi-year drought. This deficiency, coupled with the already measurable effects of climate change, makes construction of new storage facilities and expansion of existing storage imperative. A wide range of options should be on the table, including new surface water projects; re-operation and expansion/enlargement of existing storage projects; groundwater and conjunctive use; and development of other local and regional storage facilities. Additional storage will add flexibility to the water management system and help ensure a more reliable water supply to serve California's diverse needs, including drought resilience and ecosystem protection (e.g., improved temperatures and flows for fish).

Actions

- **Studies.** In coordination with DWR, the responsible state, federal or local water agency proponents of projects should complete storage studies by June 2014 and formally determine whether a particular project is environmentally and economically sound and will provide benefits for water supply and the ecosystem.

- **Permitting.** Within six months of a local determination based on these studies, DWR and the California Department of Fish and Wildlife (CDF&W) should begin coordinating with local agencies to expedite permitting and CEQA compliance for new storage facilities. For storage projects found to have statewide benefit, DWR and CDF&W should take the lead in expediting the permitting process. The state also should coordinate with federal agencies as needed on permitting, the National Environmental Policy Act (NEPA), water rights issues and potentially construction.

- **Financing.** Under comprehensive water legislation enacted in 2009, the California Water Commission is tasked with defining and quantifying the public benefits of water storage projects eligible for funding with state dollars. By June 2014, local water agencies that would receive identifiable water supply benefits from water storage projects should provide a plan outlining their commitment and steps they will take to pay for those benefits. This Statewide Water Action Plan recommends that any water bond that moves forward in 2014 provide for continuous appropriation of funding for the public benefits of storage as outlined in the bond measure currently slated for the November 2014 ballot.

- **Construction.** By January 2018, construction should commence for new groundwater and surface water storage projects with an initial target of 1.5 million acre-feet of new storage capacity, as documented in the 2000 CALFED Record of Decision.

- **Local Construction.** As soon as practicable, construction of local facilities with a target of 1 million acre-feet should be completed.

- **Reoperation.** DWR should complete its study of reservoir reoperation by June 2014, including reoperation of existing reservoirs and integration of new storage into system operations.

2. Water Use Efficiency

Water conservation and water use efficiency are central elements of the state's strategy to enhance water supply reliability, restore ecosystems and respond to climate change and a growing population. It should continue to be the state's policy to encourage investments in water conservation and water use efficiency by ensuring that the right to conserved water remains with the conserving entity. Local and regional water agencies have made significant multi-decade investments in water conservation and water use-efficiency activities and continue to do so under new state requirements

enacted in law. The state should acknowledge that local agencies are in the best position to determine compliance with these requirements and should respect local determinations as sufficient.

Actions

- The state should provide funding for water use efficiency activities in disadvantaged communities and support programs that are not locally cost effective but contribute broad benefits to California.
- DWR and local water agencies should coordinate with groundwater management agencies where applicable to enhance conjunctive use opportunities and minimize potential impacts on groundwater recharge that may result from water use efficiency and conservation efforts.

3. Water Supply Assurances

California law establishes a goal of improving water supply reliability throughout the state. Water supply reliability in regions that rely on water conveyed across the Delta is of obvious importance to the California economy. A BDCP is being developed in part to improve and protect water supply reliability for the agencies that will benefit from its completion. However, it is important that these improvements be accomplished in a manner consistent with this principle.

When the Central Valley Project (CVP) and the State Water Project (SWP) were built, assurances were incorporated in their authorizing statutes that water needed to meet present and future beneficial uses in the areas of origin (i.e., the Sacramento Valley, the east side of the San Joaquin Valley and the Delta) would be available to those areas when needed. All of California has benefited from these fundamental assurances. The state should commit to implementing an action plan that augments storage and modifies regulatory approaches to ensure that positive storage balances can be maintained at all times to provide for improved water supply reliability and ecosystem health and protection of the state's economy.

Actions

- As the state implements this plan, all relevant agencies should adhere to water rights protections in state law and comply with existing water rights and contractual requirements.
- The Administration should continue to affirm through its policies and actions that the implementation of a BDCP will not adversely affect existing water rights of those in the watershed of the Delta, nor will it impose any obligations on area-of-origin water users, including in the Delta, to supplement flows in and through the Delta.
- Those seeking to secure permits for a BDCP will be responsible for meeting all applicable conditions in their BDCP permits, including any obligations in those permits for Delta flow, which as required by law must avoid redirected impacts to area-of-origin water users, including in the Delta, unless provided for in voluntary agreements or settlements.

4. Operational Assurances

Recent modeling indicates that, in the driest 10% of years, some major reservoirs will hit "dead pool," the condition in which water levels fall below a dam's lowest outlets and no operable storage exists to deliver water for supply, environmental, and power generation purposes. The ramifications of hitting dead pool at that frequency could be catastrophic for water users who rely on these facilities for a portion of their supply, for the environment, and particularly for affected water agencies that do not have another viable source of water supply for their customers.

Allowing reservoirs to reach dead pool is not sound policy and is at odds with overall efforts by the state and federal governments to address California's water supply reliability and ecosystem health. Adaptive strategies that address this issue are critical to ensure that the operational rules for California's water delivery system will provide the water supply assurances needed by water users throughout the state. It should be the policy of the state to adopt regulations, develop operating rules, or take other actions that will ensure that reservoirs are not drawn to dead pool conditions, even in multiple dry years.

Actions

- The Administration should develop a strategy in coordination with state agency leadership and federal agency partners by January 1, 2015, to ensure reservoirs are not driven to dead pool levels. This strategy should identify needed regulatory changes, infrastructure improvements including increased storage capacity, and changes in reservoir operations, as well as support for additional local resources development.

- Initial actions identified through this process that can be implemented prior to January 1, 2015, should be included as part of the report outlined in the Governmental Coordination section of this Statewide Water Action Plan.

- As part of this strategy, the Governor should direct state agencies to implement new and existing water management and water quality programs in a manner that will help ensure California's reservoirs do not reach dead pool conditions.

5. Improved Regional Self-Reliance

In addition to water use efficiency and water conservation, California's water agencies utilize a variety of methods to increase local water supplies and reliability for water users and the environment. The state should continue to support development of local and regional water resources that improve each region's water supply reliability and, where applicable, augment imported water supplies. This includes surface water diversions for in-basin uses, conjunctive use, stormwater capture, recycled water, desalination, and groundwater cleanup. Projects and programs that achieve multiple benefits should be a priority.

Actions

- Local agencies should improve self-reliance by planning and implementing projects consistent with decisions made by local and regional water agencies.

- DWR should consult with local and regional agencies to develop a statewide strategy to improve regional supplies, in accordance with the Sacramento-San Joaquin Delta Reform Act.

- The state should continue to support Integrated Regional Water Management Plan (IRWMP) efforts that successfully provide for regional and local needs.

- DWR should work with existing IRWMP programs and stakeholders to evaluate the state's Integrated Regional Water Management program and identify areas for improvement, including streamlining the application process, developing specific criteria to determine successful plan implementation, and reducing transaction costs. This effort should include ways to enhance the program's effectiveness in serving disadvantaged communities in IRWMP-eligible areas.

6. Headwaters

Because nearly all of the state's water supplies originate in California's headwaters, more effectively managing these areas is integral to optimizing the water supplies that nature provides. Adapting to climate change and improving watershed resiliency to reduce the likelihood of catastrophic wildfires and increase water yield and quality will require substantial investments by the state.

Actions

- State land and resource management agencies with jurisdiction in headwaters areas should draft a joint report to the Governor and the Legislature analyzing the impacts of climate change on headwaters. The report should identify the benefits that headwaters currently provide, identify models to assess the impacts of climate change on these resources and outline strategies to adapt to those impacts. The appropriate state agencies should invite their federal agency partners to participate in the development of the report.

- The Natural Resources Agency, in consultation with the Sierra Nevada Research Institute (UC Merced) and the U.S. Departments of Agriculture and the Interior, should provide a report to the Governor outlining and prioritizing investments that can be made on public lands to improve the condition and functions of California's headwaters to benefit water supply reliability for the state.

- Working with local agencies, the state should assess and support solutions for legacy issues affecting water quality and supply to improve the condition of affected watersheds.

- The state should seek to partner with the U.S. Forest Service in meadow restoration projects that can control excessive soil erosion and sediment delivery in California's watersheds to help maintain reservoir storage capacity, reduce flood risks and increase conjunctive use capability.

7. Water Quality

Protecting water quality is a critical aspect of water management in California. The state should continue to pursue actions to protect, maintain and enhance surface water and groundwater quality for all applicable beneficial uses, consistent with meeting all applicable standards, agreements and regulatory requirements.

Actions

- The Department of Public Health should fund the development and use of new analytical methods and cost-effective treatment technologies to better detect and remove chemical and microbial contaminants from drinking water supplies.
- The state should provide funding support for local water agencies to develop and implement salt and nutrient management plans that will reduce salinity in surface and groundwater supplies and provide enhanced conjunctive use opportunities.
- The State Water Resources Control Board and the Regional Boards should review and better match water quality standards to the locally appropriate and demonstrated use of the water. Water quality program expenditures should be focused where they will provide the greatest water quality benefits. Source water quality for municipal uses should continue to be protected.
- The state should continue to develop solutions for assisting disadvantaged communities that do not have safe drinking water.

8. Bay Delta Conservation Plan

A Delta solution, including a BDCP, is a critical component of a broader set of actions that will address water supply reliability and ecosystem health in California.

Actions

- Within the scope of existing regulatory statutes, all state agencies involved in developing a BDCP should exercise their discretion and authority to ensure the final project is consistent with the principles of this Statewide Water Action Plan.
- A Delta solution is expected to provide substantial public benefits, which will be funded from public sources including a revised 2014 water bond. The state should work with its federal partners to secure long-term, non-reimbursable federal funding to pay for the federal share of these public benefits.
- Any large construction project, including a BDCP, may have adverse impacts related to the project's "footprint." Where feasible, a BDCP should be designed to avoid or minimize adverse impacts in the first place. When adverse impacts cannot be avoided, the permittees of a BDCP should mitigate project-related environmental impacts, including water supply impacts, in accordance with existing law.
- The permittees of a BDCP, including the Central Valley Project and State Water Project contractors, should work collaboratively with other water users in good faith on all statewide water issues to find mutually acceptable solutions on the broader statewide water issues.

9. Levee Improvement and Maintenance

Levees in the Delta and throughout California are key features of the state's water system and are subject to many risks, including those associated with earthquakes and floods. To protect against and prepare for future levee failures, the state should continue to support and prioritize the maintenance of levees in accordance with state law, including critical near-term actions and the Central Valley Flood Protection Plan.

Actions

- The Delta Stewardship Council should complete its prioritization plan by July 1, 2014.
- The state should continue to support DWR's Delta Levee Maintenance and Special Projects programs and provide support for local flood protection measures throughout the Central Valley by partnering with local agencies in projects that can incorporate public benefits.

10. Emergency Preparedness and Public Safety

Recent events in California and other states have demonstrated that water-related emergencies can have significant impacts and put public safety at risk. A robust emergency response plan is essential for minimizing disruption due to floods, earthquakes, wildfires, power outages or contamination of drinking water supplies. The state, working with federal partners, should continue efforts to improve response strategies to enhance public safety during these unforeseen events.

Actions

- DWR should implement pertinent recommendations of the Sacramento-San Joaquin Delta Multi-Hazard Coordination Task Force Report of 2012.

- To reduce the risk of catastrophic wildfires, the California Department of Forestry and Fire Protection (CAL FIRE) should review and, if necessary, revise relevant state regulations to better accommodate and effectuate the use of forest management tools such as forest thinning, biomass removal and controlled burns that reduce fuel loading.

- DWR should coordinate with the California Governor's Office of Emergency Services and the U.S. Army Corps of Engineers to ensure public safety in the Delta and upstream will not be compromised by actions that might otherwise degrade the performance of flood management facilities; create or redirect hydraulic impacts; or, interfere with or impede flood facility improvements, operations or maintenance.

- DWR should implement the pathway strategy adopted in its draft Delta Flood Emergency Preparedness and Response Plan and supported by the U.S. Army Corps of Engineers. This effort includes all measures to facilitate restoration of an emergency freshwater pathway to water export facilities in approximately six months.

11. Bay-Delta Water Quality Control Plan

Multiple regulatory agencies, including, but not limited to, the State Water Resources Control Board (State Water Board), National Oceanic and Atmospheric Administration (NOAA) Fisheries, U.S. Fish and Wildlife Service (USFWS), CDF&W, U.S. Environmental Protection Agency (USEPA), DWR, Army Corps of Engineers, and the Delta Stewardship Council are tasked with making decisions affecting California's water supplies. Continued coordination among these agencies is essential to avoid duplicative and possibly conflicting policies and regulations, and to make the most efficient use of the state's resources. Negotiated programs and planning efforts have been and likely will be the most effective tools to protect beneficial uses in the Bay-Delta. The State Water Board has the opportunity to lead this coordination through its review and update of the 2006 Water Quality Control Plan (Bay-Delta Plan). In its review of the Bay-Delta Plan, the State Water Board should:

Actions

- Encourage and facilitate negotiated programs, planning efforts and settlements that will implement flow and non-flow actions consistent with the need to protect beneficial uses and public trust balancing.

- Require a tri-annual review of water quality objectives and implementation accountability through annual reports by local agencies, state offices, departments and boards with responsibility to implement the Bay-Delta Plan.

12. Water Bond

Significant investments in California's water infrastructure, water management improvements and ecosystem health are critically needed and long overdue.

Actions

- The water bond currently set for the November 2014 ballot should be modified, consistent with the ACWA Board of Directors' Water Bond Policy Principles, in early 2014 to ensure its placement on the November ballot. An appropriately crafted general obligation bond can fund broad public benefits associated with investments identified in this Statewide Water Action Plan. Priorities for funding should include new surface and groundwater storage; local and regional projects that support greater regional self-sufficiency; investments in Delta ecosystem restoration; safe drinking water projects and water quality improvements; water conservation and water use efficiency; and watershed management.

13. Groundwater Resources

Many regions of the state rely on groundwater for a significant portion of their water supply. In recent years, climate change, regulatory restrictions on surface water supplies, and increased demands have forced greater reliance on groundwater as a principal or supplemental supply for urban, agricultural and environmental uses. More sustainable management of groundwater is needed, but in order to succeed the state must invest in improvements to its water storage and Delta conveyance infrastructure to optimize both surface and groundwater supplies. Consistent with ACWA's strategic policy document, *Sustainability from the Ground Up: A Framework for Groundwater Management in California*, the state should support and incentivize effective local and regional groundwater management, resolve conflicting state regulatory requirements and streamline its policies to optimize and increase surface and groundwater storage opportunities.

Actions

- DWR should convene a multi-agency workgroup with participation by local groundwater agencies to coordinate, review and facilitate implementation of local and regional groundwater management performance objectives.
- Groundwater recharge, banking and conjunctive use projects are critical to the future sustainability of California's groundwater resources. DWR and State Water Board (and Regional Boards) should support and facilitate these activities when programs are implemented as part of an IRWMP or legally recognized groundwater management plan.
- DWR, in consultation with other agencies that gather data, should develop a single data portal on a publicly accessible website for groundwater quality information. DWR also should continue to expand the CASGEM database for groundwater quantity.
- The state, through the Regional Boards, should support and incentivize local agencies' efforts to develop long-term, sustainable solutions for cleanup of existing groundwater contamination and prevention of future contamination.

14. Water Transfers

Water transfers can provide much-needed flexibility in meeting water supply and environmental needs and have proven invaluable in dry years and droughts. A well-defined set of policies and procedures that provide certainty to transferring parties is essential to facilitate future transfers and promote local and statewide economic, social and environmental sustainability.

While federal and state laws promote transfers, DWR's current approval processes should be streamlined. These issues should be resolved as expeditiously as possible so water transfers can be implemented quickly — when they are needed — without adversely affecting third parties.

Actions

- DWR should convene stakeholder meetings, including with the U.S. Bureau of Reclamation, to identify and resolve, at a minimum, the following issues by December 1, 2013:
  - Identify a process to expedite transfers within a region;
  - Assess the role of CEQA in water transfers,
  - Review DWR and Reclamation processes and criteria that are used to determine what water is transferable; and
  - Investigate and review contracting practices within Reclamation and DWR for approving agreements to use conveyance and storage facilities of the Central Valley Project and the State Water Project.
- DWR also should review the 2002 SWRCB report, *Water Transfers Issues in California*, for background and relevant recommendations to further facilitate water transfers.

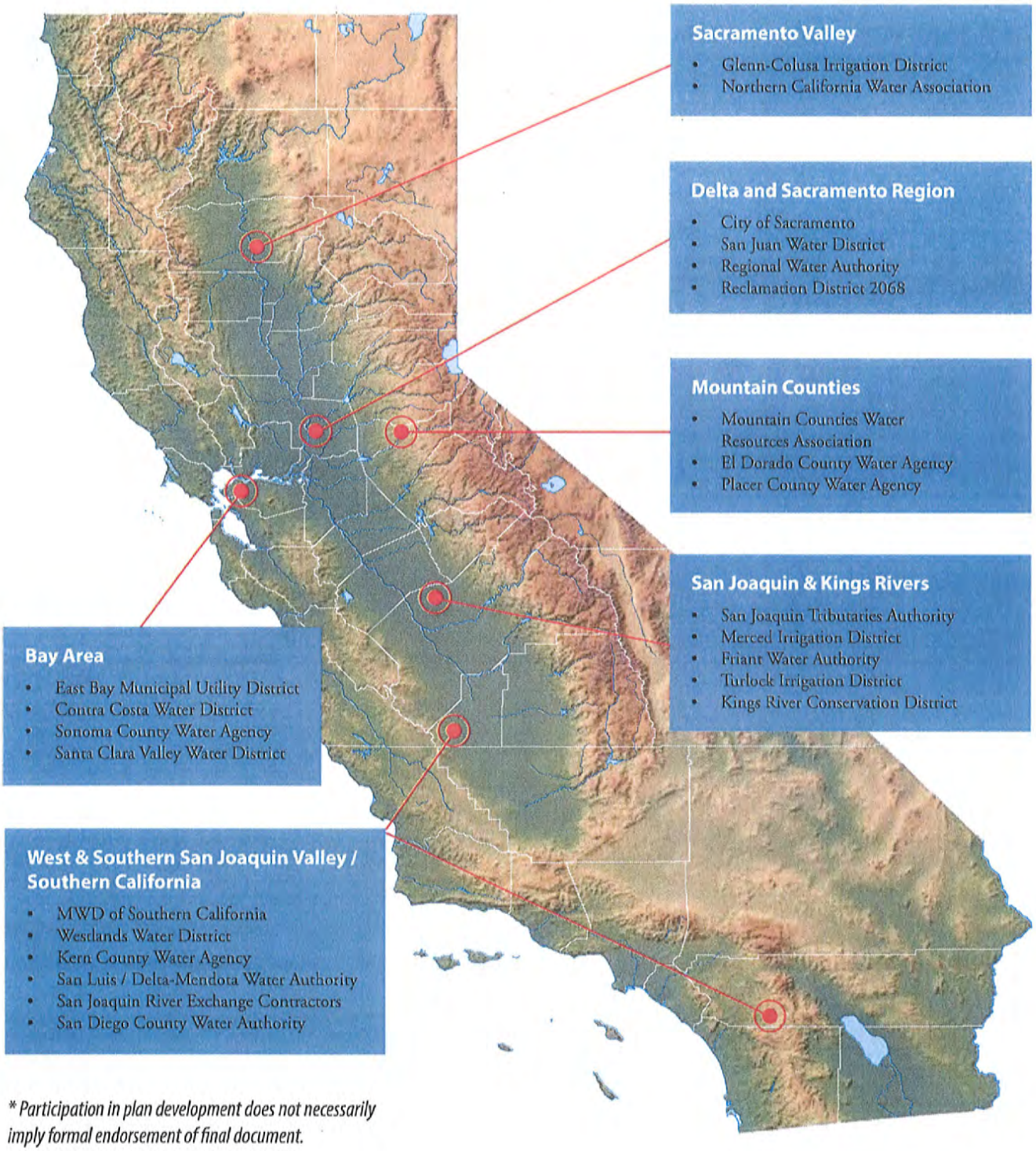
15. Governmental Coordination

For this plan to be successful, improved coordination among state agencies and between the state and federal government will be critical.

Actions

- The Governor and state agency leadership should follow up with their federal counterparts, including the President, to assess actions, policy direction and commitments in response to the memo from the President's Council on Environmental Quality (CEQ) to his cabinet directing that a BDCP be a priority for the Obama Administration. The state should further coordinate with federal agencies to advance other actions identified in the CEQ memo, including conservation and water use efficiency, enhancing water supplies and storage, and facilitating water transfers during times of shortage.
- The secretaries of the Natural Resources Agency, California Environmental Protection Agency and the Health and Human Services Agency, in coordination with their respective boards, departments, offices, councils, commissions and conservancies that have a role in implementation of this plan, should produce within 90 days of the Governor's approval of this plan a joint report that details how the agencies and entities they oversee will exercise their authorities to implement this plan in an expeditious and integrated manner.

Statewide Water Action Plan Participation



Sacramento Valley
- Glenn-Colusa Irrigation District
- Northern California Water Association

Delta and Sacramento Region
- City of Sacramento
- San Juan Water District
- Regional Water Authority
- Reclamation District 2068

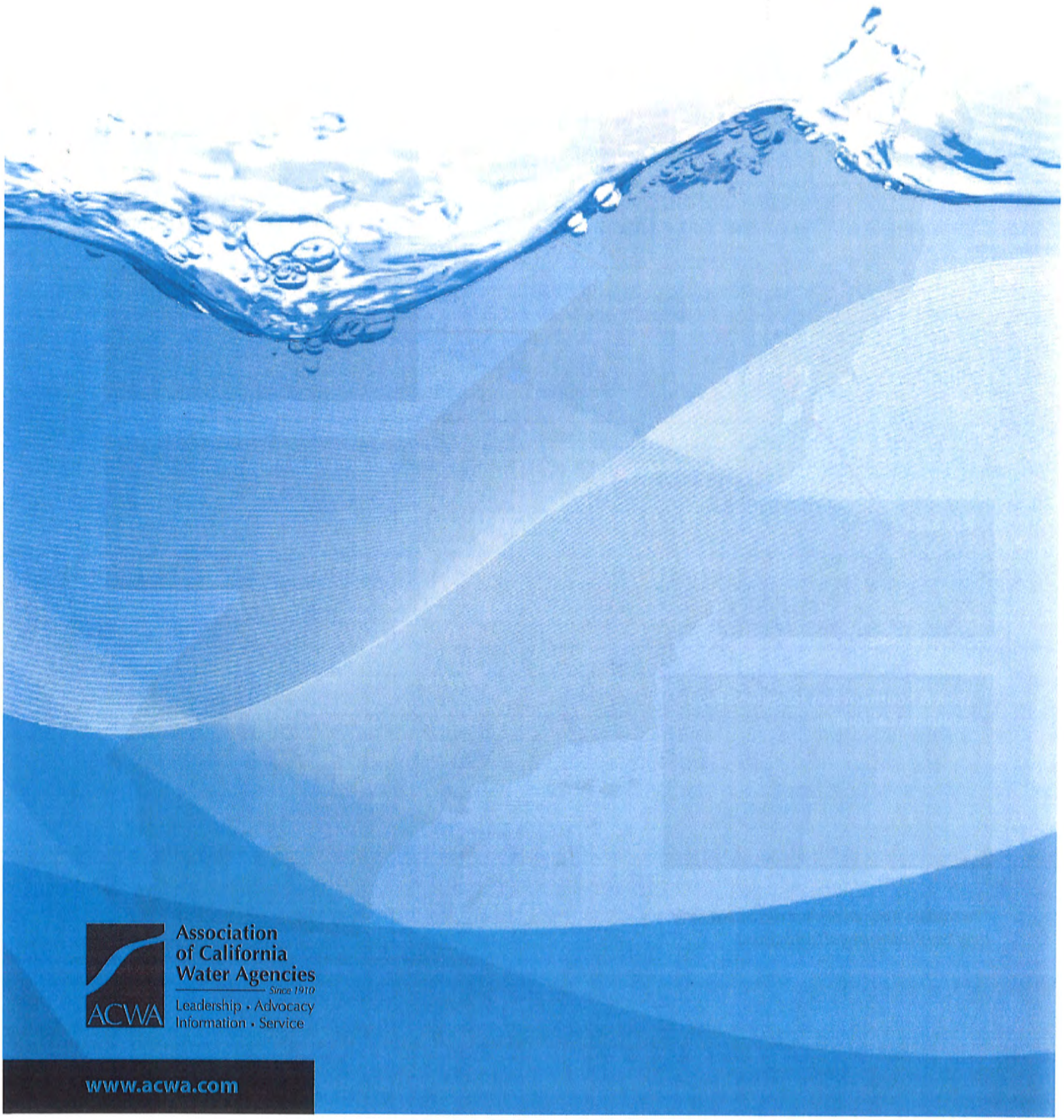
Mountain Counties
- Mountain Counties Water Resources Association
- El Dorado County Water Agency
- Placer County Water Agency

San Joaquin & Kings Rivers
- San Joaquin Tributaries Authority
- Merced Irrigation District
- Friant Water Authority
- Turlock Irrigation District
- Kings River Conservation District

Bay Area
- East Bay Municipal Utility District
- Contra Costa Water District
- Sonoma County Water Agency
- Santa Clara Valley Water District

West & Southern San Joaquin Valley / Southern California
- MWD of Southern California
- Westlands Water District
- Kern County Water Agency
- San Luis / Delta-Mendota Water Authority
- San Joaquin River Exchange Contractors
- San Diego County Water Authority

** Participation in plan development does not necessarily imply formal endorsement of final document.*



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The Natural Resources Agency
Department of Water Resources

California Water Plan

Update 2013

Investing in Innovation and Infrastructure

Volume 1 — The Strategic Plan

PUBLIC REVIEW DRAFT

October 2013

Edmund G. Brown Jr.
Governor
State of California

John Laird
Secretary for Resources
The Natural Resources Agency

Mark Cowin
Director
Department of Water Resources

ATTACHMENT 3

Navigating Water Plan Update 2013

California Water Plan Update 2013 (Update 2013) provides a wide range of information, from a detailed description of California's current and potential future conditions to a "Roadmap For Action" intended to achieve desired benefits and outcomes. Update 2013 applies at statewide, regional, and local scales, and serves to advise a diverse audience, including elected officials, planners and resource managers, tribal governments and communities, academia, and the general public. The plan is organized in five volumes. Volumes 1, 2, and 3 are outlined below. The *Highlights* booklet, Volume 4, *Reference Guide,* and Volume 5, *Technical Guide,* will be released with the Final Update 2013 document in March 2014.

Volume 1, The Strategic Plan

- Executive summary.
- Call to action, new features for Update 2013, progress toward implementation.
- Update 2013 themes.
- Comprehensive picture of current water, flood and environmental conditions.
- Strengthening government alignment and water governance.
- Planning (data, analysis and public outreach) in the face of uncertainty.
- Framework for financing the California Water Plan.
- Roadmap for Action – Vision, mission, goals, principles, objectives & actions.

Volume 2, Regional Reports

- State of the region — watersheds, groundwater aquifers, ecosystems floods, climate, demographics, land use, water supplies and uses, governance.
- Current relationships with other regions and states.
- Accomplishments and challenges.
- Looking to the future — future water demands, resource management strategies, climate change adaptation.

Volume 3, Resource Management Strategies

Integrated Water Management Toolbox
30+ management strategies to:
- Reduce water demand.
- Increase water supply.
- Improve water quality.
- Practice resource stewardship.
- Improve flood management.
- People & water.

Contents

Executive Summary

The California Water Plan: Investment in Innovation and Infrastructure

California water managers and elected officials are responsible for ensuring reliable and clean water supplies for a growing population, reducing flood risks to ensure public safety, and enhancing and restoring the state's ecosystems, all while safeguarding California's economy. These responsibilities exist at a time when the demands placed on natural resource-based assets and services are increasing and while funding for resource management is more and more limited. This necessitates doing more with less.

As mandated in the California Water Code, the California Water Plan (CWP) is the State's long-term strategic plan for guiding the management and development of water resources under these emerging conditions and expectations, and in the face of an uncertain future. *California Water Plan Update 2013* (Update 2013) provides a strategic vision and roadmap for California's water future that is informed and supported by hundreds of stakeholders; dozens of federal, State, and tribal entities; and nearly 40 other companion plans developed by myriad State agencies.

California Water Plan Vision

California has healthy, resilient watersheds and reliable and secure water resources and management systems. Public health, safety, and quality of life in rural, suburban, and urban communities are significantly improved as a result of advancements in integrated water management. The water system provides the certainty needed for quality of life, sustainable economic growth, business vitality, and agricultural productivity. California's unique biological diversity, ecological values, and cultural heritage are protected and have substantially recovered.

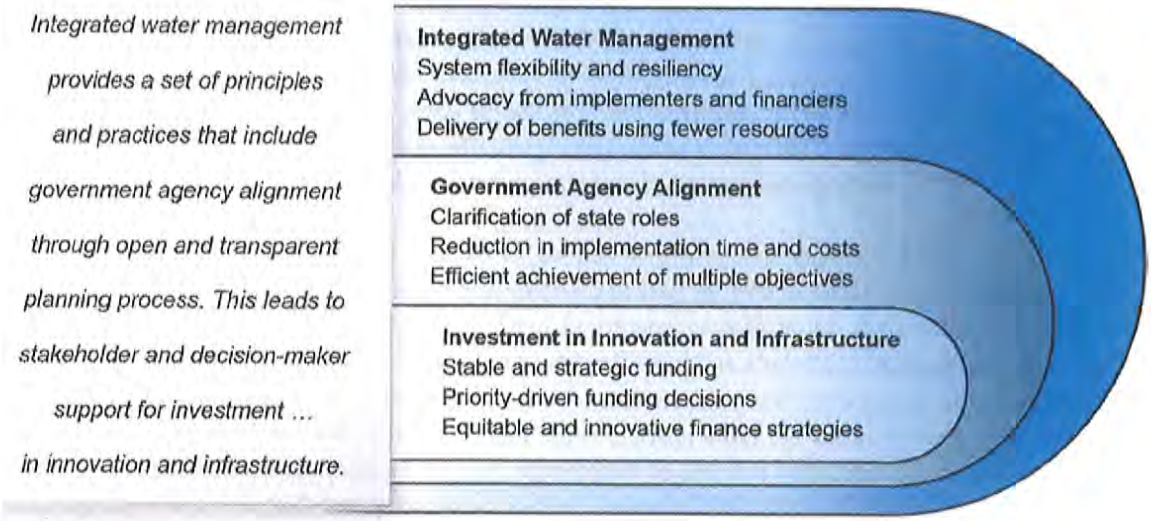
Update 2013 does not create mandates, prioritize actions, or allocate funding. Instead, it provides a roadmap that informs legislative action, as well as planning and decision-making, at all levels of government. It characterizes water resource conditions in the state today, describes the factors that are driving change, recognizes challenges and impediments to effective solutions, and lays out a comprehensive suite of potential future actions intended to move California toward more sustainable management of water resources and more resilient water management systems. Ultimately, sustainability and resiliency need to be measured in terms of improved public safety (societal benefits), environmental stewardship (environmental benefits), and economic stability (financial benefits).

A Call for Action: Integration, Alignment, and Investment

Despite significant investments made in management and improvement of the state's natural and human-made water resource infrastructure over the past few decades, Californians today face rising and unacceptable risks from flooding, water shortages, unhealthy water quality, and ecosystem degradation. These challenges will only intensify in the future without bold action backed by stakeholder support. Many of California's ecosystems and much of our water supply and flood protection infrastructure are no longer functioning properly or have exceeded their life cycles. For example, many communities depend on aging water supply and flood management infrastructure badly in need of maintenance or replacement; many essential species and ecosystems are rapidly declining; and some Californians do not have access to safe, clean drinking water. To compound the situation, such stressors as climate change, earthquakes, and lack of stable funding further threaten the integrity and reliability of the state's water supply, flood protection, and environmental systems.

Update 2013's strategies and actions promote three themes to address the challenges facing California today: 1) advance integrated water management (IWM); 2) strengthen government agency alignment; and 3) invest in innovation and infrastructure. The themes are interconnected and work together.

Themes of 2013 California Water Plan



Advance Integrated Water Management

With Update 2013, the State is renewing its commitment to IWM. IWM is a strategic approach to planning and implementing water management programs that combines flood management, environmental stewardship, and water supply actions to deliver multiple economic, environmental, and social benefits across watershed and jurisdictional boundaries. The IWM approach provides a set of principles and practices that strengthen government agency alignment and efficiencies through collaborative and transparent planning. This in turn promotes stakeholder and decision-maker support for cost-effective investments in multi-benefit projects and more diversified water portfolios. This support provides increased advocacy, as well as a greater number and variety of potential implementers and

financiers. The result is more efficient, effective, and regionally appropriate water resource planning and management that leads to higher returns on investment; actions with more sustainable outcomes; and greater water system resiliency and adaptability to future challenges, such as growth and climate change.

The previous updates to the CWP introduced IWM as an effective approach to achieving more sustainable management of the state's water resources. Update 2013 represents an important next step in advancing IWM by articulating the outcomes or types of benefits of greatest value to stakeholders, and further clarifying and defining the scope and focus of IWM as an outcome-based approach. Desired outcomes include improved system flexibility and resiliency; increased advocacy for multi-beneficiary projects from potential implementers and financiers; and delivery of benefits at a faster pace, using fewer resources than are typically required to implement single-benefit projects. IWM and integrated regional water management (IRWM) practices have made strides over the past 12 years, and Update 2013 encourages the expansion and enhancement of these practices.

Strengthen Government Agency Alignment

California has a wide variety of climates, landforms, and institutions, as well as a diverse, place-based range of cultures, which can be described as *anthrodiversity* (e.g., the human aspect of biodiversity that denotes the value of sustaining varied human habitats, such as rural, suburban, and urban communities). For example, there are more than 2,300 public resource management agencies at four primary levels of government (federal, State, regional, and local). Californians' disparate priorities, beliefs, practices, and resource consumption rates define and support California's rich social diversity. The most effective and efficient solutions are an amalgam of diverse input and data from a large variety of elected officials, opinion leaders, stakeholders, scientists, and subject experts. These circumstances necessitate that data management, planning, policy-making, and regulation occur in a more collaborative, regionally appropriate manner. Sustainable outcomes will rely on a blend of subject expertise and perspectives woven together into comprehensive place-based and regionally appropriate policies and projects.

Discussions regarding water management priorities, including how they should be funded, often devolve into conflict, often with stakeholders or decision-makers operating from different sets of information prepared for disparate purposes. In most cases, the information is accurate but can be incomplete, drawn out of context, or based on fundamentally different assumptions. The outreach and collaboration process of Update 2013 has attempted to translate these different perspectives into practical information to enable decision-making and expedite implementation. For example, the future scenarios described in Chapter 5, "Managing an Uncertain Future," provide a framework for making common assumptions and applying analytical tools to align understanding of possible future water conditions across diverse stakeholder interests. This type of collaborative planning has yielded well-supported, implementable recommendations.

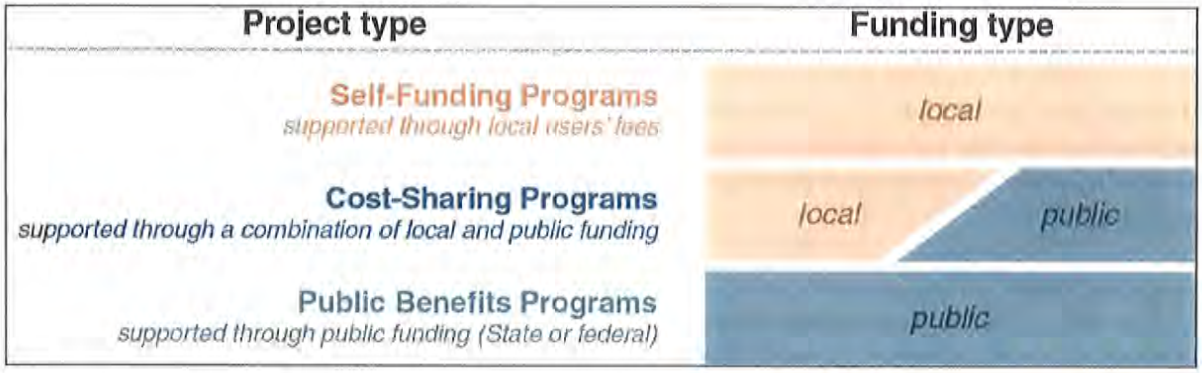
Update 2013 builds on strategies and actions to strengthen agency alignment from that presented in *California Water Plan Update 2009* (Update 2009). The primary purpose for improving alignment among and within federal, State, tribal, and local government agencies is to expedite implementation of resource management strategies and help assure efficient implementation of multi-benefit projects. (Refer to Volume 1, Chapter 4, "Strengthening Government Alignment," for a more detailed discussion.)

Invest in Innovation and Infrastructure

How California decides to prioritize and pay for necessary water resource management improvements is one of the most significant issues the state faces today. Past investments have provided a down payment and a good basis for further improvements; however, the financing methods of the past are no longer sustainable. The stakes are high as future investment decisions will significantly affect public safety, environmental stewardship, and economic stability. What is at stake includes flood risk to Californians' lives and assets; sustainability of natural resources, including the stewardship or extinction of species/habitats and the ecosystem services they can provide; and California's $2 trillion economy, which has significant value, both nationally and globally, and directly affects the fate of existing businesses, their employees, and their employees' families.

California has nearly $600 billion of assets and over 7 million people at risk of flooding. There are also over 10,000 projects identified within the 48 IRWM plans. In total, resource management actions will require up to $500 billion of future investment over the next few decades to reduce flood risk, provide reliable and clean water supplies, and enhance ecosystems and their services. The price tag is daunting, but failure to address these challenges will put more and more Californians at risk. We are beginning to integrate resource management and planning, but funding remains fragmented, unstable, and inefficient, which limits opportunities for further integration. In fact, many current funding practices/constructs, developed decades ago, drive investment priorities more so than emerging plans and stakeholder priorities (which have significantly changed over the last several decades). These rigid funding constricts also do not allow the adaptability necessarily to respond to emerging challenges.

Update 2013 calls for more strategic, disciplined, and aligned investments in innovation and infrastructure (both naturally occurring and human-made) and identifies shared stakeholder values and potential mechanisms for future financing. Moving forward, the State needs to clarify funding purposes, as well as assess and articulate the value of current and future expenditures, to secure the necessary investments that will deliver sustainable and resilient water resources. It will take decades to upgrade the aging water-related infrastructure and accomplish ecosystem improvements. However, we need to continue taking steps toward financing implementation of a diverse portfolio of water management actions with an equally diverse portfolio of funding sources, including self-funding, cost-sharing, and public benefit.



Self-Funding programs are primarily financed through revenue bond sales that are supported through users' fees. Many local major water-supply projects, including local and regional water-supply conveyance, treatment, distribution, and wastewater treatment, are included in this category. Some systemwide projects can also be included in this category. Small and isolated disadvantaged communities

are one exception, as many of their water supply systems need upgrades to provide adequate water supply and/or address their water quality issues. Typically, local/regional water purveyors' and wastewater agencies' user fees, with some exceptions, provide adequate funding for operation and maintenance of their water systems. Nonetheless, operation and maintenance of the flood management system by the State and local flood assessment districts is more challenging.

Cost-Sharing programs have local and regional benefits, as well as State and national benefits. Many of the proposed infrastructures fit within this category and are generally funded through a cost-shared agreement among the federal, State, and local agencies, depending on the program/project beneficiary. Examples of these types of projects include some regional water supply security projects and most flood protection projects. Many flood and community districts sell bonds secured by specific tax assessments to fund their capital improvements. Passage of Assembly Bill 218 in 1996 put new restrictions on this type of financing by requiring approval by two-thirds of voters. The result has been delays in some capital improvements and failure to approve others.

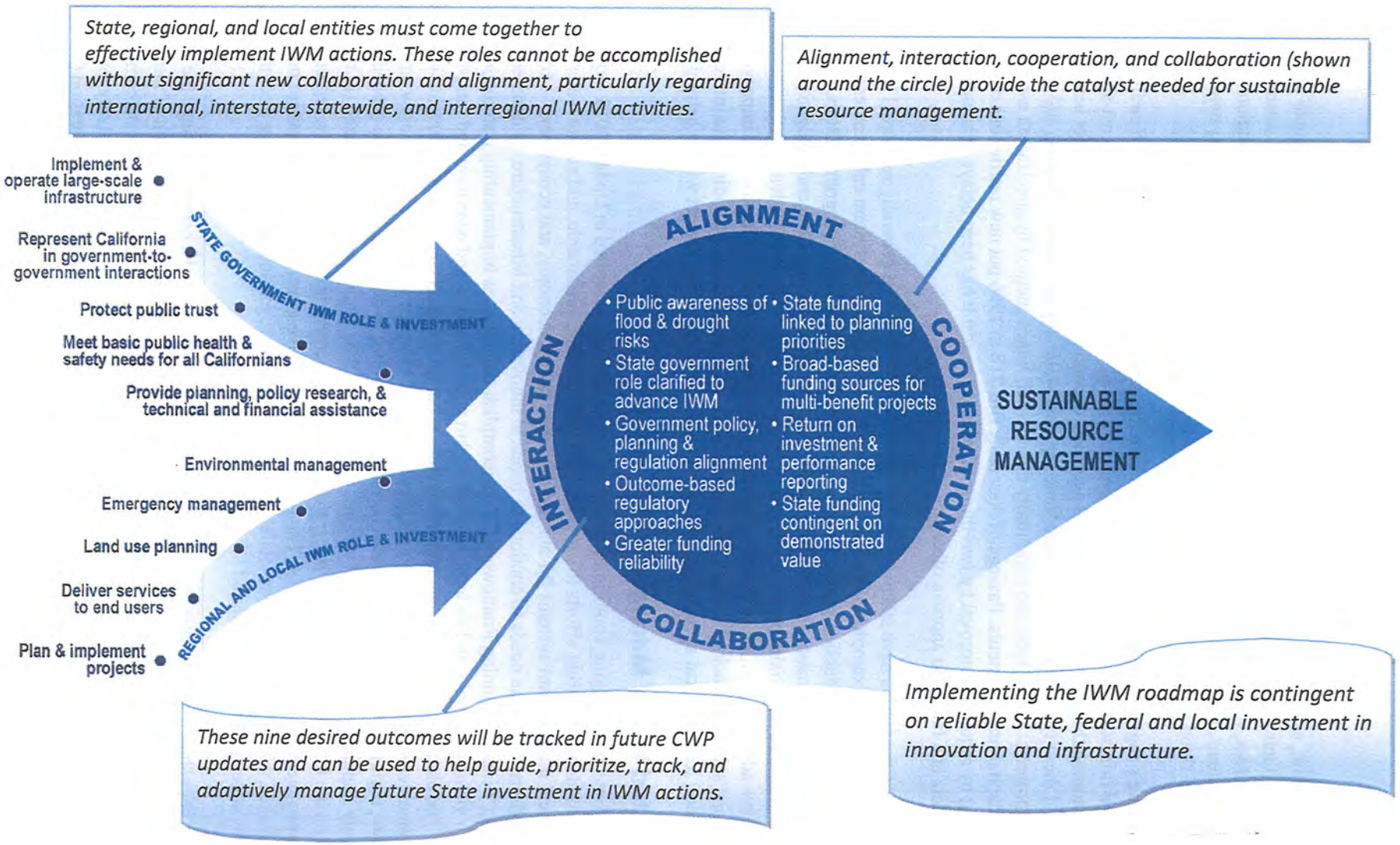
Public benefit programs have statewide and societal benefits. They are generally supported by State and federal public funding. Examples of these projects are the systemwide ecosystem enhancements, systemwide flood-risk reduction projects, and some watershed management programs. Cities, counties, and the State generally finance their capital improvement programs through General Obligation bonds, which are secured by full faith of the credit issuer. Many local agencies and disadvantaged communities may not have adequate funding or means of financing local shares of their infrastructure improvement through bond sales (i.e., lack of credit or high interest rates). In these cases, providing low-interest State and/or federal loans to local agencies to cover their local cost share of the project will be helpful.

Integrated Water Management in Action

The immediate and changing conditions, priorities, and challenges described in Update 2013 require that Californians step up existing efforts to provide integrated, reliable, sustainable, and secure water resources and management systems for our health, public safety, economy, and ecosystems — today and for generations. The State needs to continue to invest in innovation and infrastructure, as detailed in Chapter 7, "Finance Planning Framework." To accomplish this requires implementing a strategic water plan with vision and goals, and an implementation plan with objectives and near-term and long-term actions. The plan must build on State and stakeholder accomplishments since Update 2009, as well as the fundamental lessons of water resource management learned in recent years. The figure below emphasizes how State, regional, and local entities must come together (align) to deliver the resources needed to effectively implement (invest in) IWM actions. Several key IWM activities are summarized (in the arrows located on the left side of the figure, "Integrated Water Management in Action") for State, regional, and local government roles and investment. The roles of the respective government entities cannot be accomplished without significant new collaboration and alignment, particularly regarding international, interstate, statewide, and interregional IWM activities.

The outcomes shown in the circle represent key accomplishments that must occur to achieve the Update 2013 IWM vision and objectives. Volume 1, Chapter 8, lays out 17 objectives and a menu of more than 250 actions that can move California toward accomplishing the desired outcomes. These outcomes will be tracked in future CWP updates and can be used to help guide, prioritize, track, and adaptively manage future State investment in IWM actions. Alignment, interaction, cooperation, and collaboration (shown around the figure's circle) provide the catalyst needed for sustainable resource management.

Integrated Water Management in Action



Navigating the California Water Plan

While the entirety of Update 2013 is intended to inform the actions of water managers, the *Highlights* booklet (to be available in early 2014) and certain Volume 1 chapters are particularly helpful in advising future policies with a concise description of the water management needs facing California and with implementable recommendations to help accomplish the Update 2013 vision. Chapter 1, "Planning for Environmental, Economic, and Social Prosperity," provides a concise call for action from policy-makers, as well as a summary of major concepts that advance the State's commitment to IWM. Chapter 2, "Imperative to Invest in Innovation and Infrastructure," describes extensive conversations with stakeholders about the role of State government in IWM, the three themes for Update 2013, and how these themes can be used to support decisions. These conversations and the close collaboration with stakeholders, which used the vision, mission, goals, and principles as a compass, were instrumental in crafting the abovementioned 17 objectives and 250+ related actions discussed in Chapter 8, "Roadmap For Action." Chapter 8 also describes the vision and mission of Update 2013, IWM goals to help identify and prioritize future water management actions, and guiding principles to help planning and decision-making.

Even though the 17 objectives and the related actions are supported by hundreds of stakeholders and dozens of State agencies, they must be prioritized for implementation. These actions are intended to provide policy and lawmakers, resource managers and land use planners, communities and businesses, academia, and other water leaders with a foundation and framework for water planning and management, policies and practices, and public and private investments. They are also intended to inform legislative action for change.

To assist water managers with implementing these objectives and related actions, a "toolbox" of 30 resource management strategies is provided in Volume 3 of Update 2013. Federal, State, tribal, and local entities are encouraged to use these tools to advance IWM, strengthen agency alignment, and invest in innovation and infrastructure.

Integral to achieving the goals and objectives in Chapter 8, Chapter 7 provides a first-of-its-kind finance planning framework in which multiple requirements, perspectives, and previously non-integrated financing information can be considered. This framework is intended to be used as a cornerstone for stakeholders and policy-makers to work collaboratively through critical funding needs and issues, develop durable finance mechanisms, and identify reliable revenue sources.

The remaining chapters of Volume 1 (Chapters 3, 4, 5, and 6) provide the background and rationale for the actions described in Chapter 8.

Conclusion

Update 2013 provides a full description of California's planning backdrop and context, a call for action, and a recommended path toward sustainable water management. Update 2013 was crafted with extensive collaboration; it represents matters of most importance and urgency to stakeholders and several State agencies. The plan provides an actionable blueprint for California's water future. When combined with the planning backdrop and context, the Update 2013 "Roadmap For Action" provides practical, well-reasoned, and critical decision support that can be readily implemented by the governor, Legislature, and water leaders.

Chapter 8. Roadmap For Action — Table of Contents

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Boxes

Chapter 8. Roadmap For Action

About This Chapter

Chapter 8 provides the *California Water Plan Update 2013* (Update 2013) roadmap to implement Integrated Water Management (IWM) actions. The roadmap considers immediate and changing conditions and priorities, and the ongoing challenges described earlier in Volume 1, and particularly in Chapter 2, "Imperative to Invest in Innovation and Infrastructure." This chapter presents the elements of the roadmap, namely the vision of sustainable and reliable water resources and management systems. The mission statements herein describe collaborative efforts to prepare for California's most pressing statewide and regional water management issues and challenges, the seven goals that set forth the desired outcomes of the California Water Plan (CWP), and the 10 guiding principles that express the core values and philosophies for how the vision, mission, and goals will be achieved.

Update 2013 identifies seventeen objectives and their 250-plus related actions and sub-actions geared toward fulfilling the vision, mission, goals, and principles. Performance measures to gauge progress on those related actions are also specified. (For further discussion regarding these elements, see Box 8-1 and Volume 4, *Reference Guide*, the article "Strategic Planning Guidelines.") The Update 2013 roadmap builds on accomplishments since *California Water Plan Update 2009* (Update 2009), including ongoing implementation of the 2009 comprehensive water legislation, as well as fundamental water-resource management lessons learned. The roadmap includes near-term and long-term actions that describe how Californians can and should step up existing efforts and initiate new ones to provide integrated, reliable, sustainable, and secure water resources and management systems. These efforts will protect public health, public safety, and ecosystems, as well as ensure the stability of the state's economy, today and for future generations.

Background

Required by the California Water Code Section 10005(a), the CWP is State government's strategic plan for managing and developing water resources statewide. By statute the CWP cannot mandate actions or authorize spending for the related actions. Update 2013 makes neither project-specific nor site-specific recommendations; therefore, it does not include environmental review and documentation as would be required by the California Environmental Quality Act (CEQA).

Policy-makers and lawmakers must take definitive steps to authorize the related actions in this CWP and appropriate the funding needed for their implementation. At the same time, the plan must be embraced by agencies and voting bodies that can implement the related actions. This underscores the need to have broad public participation and support for the CWP to realize its objectives and related actions.

Update 2013 builds on and advances a planning transformation that began with the *California Water Plan Update 2005* (Update 2005) process. Update 2005 was the first of the CWP updates to explicitly include a strategic planning approach from preparation to presentation. Since then, the CWP has become a strategic planning document that more fully describes the entire role of State government and the growing role of California's regions in managing the state's water resources.

PLACEHOLDER Box 8-1 Elements of the Strategic Plan

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Elements of the Roadmap

The vision, mission, goals, guiding principles, and objectives and related actions are similar to those presented in Update 2009. In addition, Update 2013 includes four new objectives reflecting important water management topics. These include objectives that promote enhancing public access to waterways, lakes, and beaches; strengthening alignment between land use and water planning; strengthening government agency alignment; and improving water financing. While some related actions for the various objectives were carried over from Update 2009, many were revised or are new for Update 2013.

Vision

California has healthy, resilient watersheds and reliable and secure water resources and management systems. Public health, safety, and quality of life in rural, suburban, and urban communities are significantly improved as a result of advancements in IWM. The water system provides the certainty needed for quality of life, sustainable economic growth, business vitality, and agricultural productivity. California's unique biological diversity, ecological values, and cultural heritage are protected and have substantially recovered.

Mission

Updating the CWP provides federal, State, tribal, regional, and local governments and organizations with a continuous planning forum to collaboratively:

- Recommend strategic goals, objectives, and near-term and long-term actions that would conserve, manage, develop, and sustain California's watersheds, water resources, and management systems.
- Prepare response plans for floods, droughts, and catastrophic events that would threaten water resources and management systems, the environment, and property, as well as the health, welfare, and livelihood of the people of California.
- Evaluate current and future watershed and water conditions, challenges, and opportunities.

Goals

1. California's water supplies are adequate, reliable, secure, affordable, sustainable, and of suitable quality for beneficial uses to protect, preserve, and enhance watersheds, communities, cultural resources and practices, environmental and agricultural resources, and recreation.
2. State government supports integrated water resources planning and management through leadership, oversight, and public funding.
3. Regional and interregional partnerships play a pivotal role in California water resources planning, water management for sustainable water use and resources, and increasing regional self-reliance.
4. Water resource and land use planners make informed and collaborative decisions and implement integrated actions to increase water supply reliability, use water more efficiently, protect water quality, improve flood protection, promote environmental stewardship, and

ensure environmental justice and public access to water bodies, in light of drivers of change and catastrophic events.

5. California is preparing for climate uncertainty by developing adaptation strategies and investing in a diverse set of actions that reduce the risk and consequences posed by climate change, which make the system more resilient to change and increase the sustainability of water and flood management systems and the ecosystems they depend on.
6. Integrated flood management, as a part of IWM, increases flood protection, improves preparedness and emergency response, enhances floodplain ecosystems, and promotes sustainable flood management systems.
7. The benefits and consequences of water decisions and access to State government resources are equitable across all communities.

Guiding Principles

1. Manage California's water resources and management systems with ecosystem health and water supply and quality reliability as equal goals, with full consideration of public trust uses. Healthy, functioning ecosystems and reliable, quality water supplies are primary and equal goals for water management to help sustain water resources and management systems. Protect public trust uses whenever feasible, and consider public trust values in the planning and allocation of water resources. State government protects the public's rights to commerce, navigation, fisheries, recreation, ecological preservation, and related beneficial uses, including those of its Native American tribes and other communities that depend on these resources for subsistence and cultural practices.
2. Use a broad, stakeholder-based, long-view perspective for water management. Promote multi-objective planning with a regional focus, and coordinate local, regional, interregional, and statewide initiatives. Recognize distinct regional problems, resources, assets, and priorities. Emphasize long-term planning (30- to 50-year horizon) while identifying near-term actions needed to achieve the plan.
3. Promote sustainable resource management on a watershed basis. Wisely use natural resources to ensure their availability for future generations. Promote activities with the greatest multiple benefits regionally and statewide. Consider the interrelationship between water supplies, water conservation, water quality, water infrastructure, flood protection, energy, recreation, land use, economic prosperity, and environmental stewardship on a watershed or ecosystem basis.
4. Increase system flexibility and resiliency. Evaluate and implement strategies that reduce the impacts of droughts and floods in the region. In California, drought contingency planning and integrated flood management are important components of regional water planning.
5. Increase regional self-reliance. Implement resource management strategies that reduce dependence on long-term imports of water from other hydrologic regions for meeting additional future water demands and during times of limited supply, such as a drought or interrupted supply after a catastrophic event (e.g., an earthquake or fire). Reduce reliance on the Sacramento-San Joaquin Delta (Delta) in meeting California's future water demands. Increase regional self-reliance for water by investing in water use efficiency, water recycling, advanced water technologies, local and regional water-supply projects, improved regional coordination of local and regional water supplies, and other strategies. As part of a diverse water portfolio, short-term water transfers between regions that are environmentally, economically, and socially sound can also help increase regional self-reliance overall.

6. Determine values for economic, environmental, and social benefits; costs; and tradeoffs so as to base investment decisions on sustainability indicators. Evaluate programs and projects recognizing economic growth, environmental quality, social equity, and sustainability as coequal objectives. When comparing alternatives, determine the value of potential economic, environmental, and social benefits; beneficiaries; costs; and tradeoffs. Include a plan that avoids, minimizes, and mitigates for adverse impacts.
7. Incorporate future variability, uncertainties, and risk in the decision-making process. Use multiple future scenarios to consider drivers of change and emerging conditions, such as population growth and climate change, when making planning, management, and policy decisions.
8. Apply California's water rights laws, including the longstanding constitutional principles of reasonable use and public trust, as the foundation for public policy-making, planning, and management decisions on California water resources. Recognize that certain natural resources — including water, tides, and submerged lands; the beds and banks of navigable rivers; and fish and wildlife resources — are owned by the public and held in trust for present and future generations of Californians. Native American tribes also depend on these natural resources for subsistence and cultural heritage. Effectively applying existing water rights laws and the twin principles of reasonable use and public trust will provide water for future generations while protecting ecosystem values.
9. Promote environmental justice — the fair treatment of people of all races, cultures, and incomes. Include meaningful community participation in decision-making for State-sponsored or public-funded resource management projects, and consider such factors as community demographics, potential or actual adverse health or environmental impacts, and benefits and burdens of the project on stakeholder groups.
10. Use science, best data, and local and traditional ecological knowledge in a transparent and documented process. When appropriate and possible, use data, information, planning methods, and analytical techniques that have undergone scientific review.

Objectives and Related Actions

The objectives and related actions presented in this roadmap were developed in part from companion state plans and the Tribal Engagement Plan (refer to Chapter 4, "Strengthening Government Alignment"). Meeting the 17 objectives, shown in Box 8-2, will help achieve the CWP goals. Planning and investing in the more than 250 related actions and sub-actions will provide greater system resiliency and help California deal with climate conditions and other future uncertainties and risks. (Note that numbering of the objectives and related actions, below, is for ease of identification and does not represent priority.)

PLACEHOLDER Box 8-2 Update 2013 Objectives

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Objective 1 — Strengthen Integrated Regional Water Management Planning

Strengthen integrated regional water management planning to improve regional self-reliance, and maintain and enhance regional water management partnerships.

The broad purpose of integrated regional water management (IRWM) is to promote a regional planning and implementation framework to comprehensively address water supply, quality, flood, and ecosystem challenges. IRWM also seeks to implement integrated solutions through a collaborative multi-partner process that includes water managers; tribes; non-governmental organizations; federal, State, and local governments; and disadvantaged communities. Over the past 10 years, IRWM has profoundly improved water management in California, and looking ahead there are opportunities for even greater advancement.

The California Department of Water Resources (DWR) is currently exploring these opportunities by developing the Strategic Plan for the Future of Integrated Regional Water Management in California. This plan, expected to be completed in 2014, will help shape the desired future for IRWM and identify measures needed for that future to be achieved. Since the Strategic Plan for the Future of IRWM in California is a companion state plan for the CWP, these measures will likely be incorporated as related actions under this objective as part of Update 2013.

Additional information on the development of the Strategic Plan for the Future of IRWM in California is available at the following Web site: http://www.water.ca.gov/irwm/stratplan/.

Related Actions

[Note: These related actions are under development and will include actions and recommendations from the IRWM Strategic Plan, when available.]

PLACEHOLDER Table 8-1 Related Actions and Performance Measures for Objective 1 (Strengthen Integrated Regional Water Management Planning)

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Objective 2 — Use and Reuse Water More Efficiently

Use water more efficiently with significantly greater water conservation, recycling, and reuse to help meet future water demands and adapt to climate change.

Urban and agricultural water use efficiency are important tools for meeting current and future water demands and maximizing beneficial use of the state's water resources. To minimize the impacts on California's natural environment and support meeting statewide and local water demands, our cities and farms must continue to increase water use efficiency to maximize benefits from existing and future water supplies. Californians have been successful in increasing water-use efficiency measures, such as low water-use landscaping, water-efficient appliances, and municipal wastewater recycling; however, increasing population and climate change impacts require continued aggressive focus and investment in water-use efficiency efforts.

Key components of California's actions to increase water use efficiency are contained within the 2009 Comprehensive Water Package (Senate Bill [SB] X7-7), which requires urban water agencies to reduce statewide per capita water consumption 20 percent by 2020 and make incremental progress toward this goal by reducing per capita water use by at least 10 percent on or before December 31, 2015. The bill also requires agricultural water suppliers to measure water deliveries and adopt a pricing structure for water customers based in part on quantity delivered, and, where technically and economically feasible, to implement additional measures to improve efficiency.

Water use efficiency is a fundamental component of California water planning because it integrates and benefits key components of water supply planning and environmental stewardship. It is a key part of the water management portfolio of every water agency, city, county, farm, and business, including State and federal government agencies. Water use efficiency and conservation reduce water demand and, in turn, wastewater generation. This reduces water and wastewater treatment needs, thereby reducing energy demand and greenhouse gas (GHG) emissions. Efficient water use also includes the development of local water supplies, which has the dual benefit of reducing energy demands for water transportation and reducing reliance on water supplies that may be strongly influenced by fluctuating availability. Efficient water use also matches water quality to water use ("fit for use"), primarily to identify water reuse opportunities that minimize the need for high-level and energy-intensive treatment. While these water management issues have statewide impacts, they are primarily implemented at the local and regional levels.

The related actions identified below are specific measures that can be implemented during the term of Update 2013 to support this objective of using and reusing water more efficiently. They focus on increased water education to continue to raise awareness of the need for all Californians to be efficient with use of our shared resource, development of agricultural and urban water tools and metrics, and preparation of a statewide recycled water strategic plan.

Related Actions

2.1 The State should expand public information efforts to promote water conservation in both the urban and agricultural sectors to better inform all Californians about the importance and value of water and about ways to use water more efficiently. The expanded campaign should be designed with specific informational goals and objectives and should operate on a continuous basis in wet years as well as dry years. This campaign will assist local water suppliers and the State in achieving the 2020 water use targets.

2.2 DWR, with the California Urban Water Conservation Council (CUWCC) and the State Water Resources Control Board (SWRCB), should research and promote water rate structures that provide conservation price signal to customers while maintaining revenue stability for the water utilities.

2.3 DWR, with the SWRCB and California Department of Public Health (CDPH), should prepare a California Municipal Water Recycling Strategic Plan to guide expanded statewide use of recycled water to help sustain statewide water supplies. The strategic plan will include:

- 2.3.1 Review and status of implementation of the 2003 Recycled Water Task Force findings.
- 2.3.2 Regional assessment and quantification of current and proposed recycled water capacities and demands.
- 2.3.3 Evaluation of better alignment of the level of treatment required for recycled water use in agricultural and environmental applications to create more opportunities for recycled water use and reduce the energy required to produce recycled water.
- 2.3.4 Consideration of potential groundwater degradation issues and coordination with Salt and Nutrient Management Plan implementation.
- 2.3.5 Regional evaluation of barriers to additional recycled water use and proposing solutions, including indirect and direct potable reuse issues, to support continued expansion of recycled water use.

2.4 The State should establish a water use efficiency and alternative supply research program to speed the development, testing, and implementation of promising new technology and approaches to water management. The program should conduct studies in all sectors of water use, including agriculture, municipal and industrial, and in the alternative supply areas of recycling, greywater, stormwater capture, and desalination. The level of sponsored research should match that of the State's energy-use efficiency research programs.

2.5 DWR should research and assist water suppliers in using new tools to measure landscape area. The landscape area data can be used to establish water budgets for customer accounts. Water suppliers can use the water budget program to better focus their water conservation efforts toward customers who are using excess water.

2.6 DWR, in cooperation with urban water-use community, should conduct a study to identify the barriers, costs, and technical assistance required to establish standard urban water-use classifications for water use reporting. The standard classifications would allow for water supplier data to be more accurately aggregated at the regional and statewide levels and permit a more detailed and accurate reporting of California water use.

2.7 Agricultural and urban water suppliers should report water supply system leakage and spills in their water management plans. Agricultural suppliers should measure and report canal seepage and district outflows. Urban water suppliers should calculate and report unaccounted-for distribution system water.

2.8 All levels of government should establish policies and provide incentives to promote better urban runoff management and reuse. Urban and, where feasible, rural communities should invest in facilities to capture, store, treat, and use urban stormwater runoff, such as percolation to usable aquifers, underground storage beneath parks, small surface basins, in drains, or the creation of catch basins or sumps downhill of development. Depending on the source and application, captured stormwater may be suitable for use without additional treatment, or it may be blended to augment local supplies.

PLACEHOLDER Table 8-2 Related Actions and Performance Measures for Objective 2 (Use and Reuse Water More Efficiently)

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Objective 3 — Expand Conjunctive Management of Multiple Supplies

Advance and expand conjunctive management of multiple water supply sources with existing and new surface and groundwater storage to prepare for future droughts, floods, and climate change.

California can prepare for future droughts, flood, and climate change, as well as improve water supply reliability and water quality, by managing the extensive water storage capacity of groundwater basins in closer coordination with existing and new surface storage and other water supply sources when available. The other supply sources include, but are not limited to, recycled municipal water, surface runoff and

floodflows, urban runoff and stormwater, imported water, water transfers, and desalination of brackish and sea water.

Surface and groundwater resources must be managed much more conjunctively when feasible to meet the challenges of climate change. Additional water storage and conveyance improvements are also necessary to provide better flood management, water quality, and system reliability in response to daily and seasonal variations and uncertainties in water supply and use, and to facilitate water transfers within and among regions.

During droughts, California has historically depended on its groundwater. However, many aquifers are contaminated, requiring remediation if they are to be used as viable water banks. Moreover, groundwater resources will not be immune to climate change; in fact, historical patterns of groundwater recharge may change considerably as a result of climate change. Because droughts may be exacerbated by climate change, more efficient groundwater basin management will be necessary to minimize additional groundwater depletion and to utilize opportunities to store water underground and substantially reduce existing overdraft.

Along with more effective use of groundwater storage, better regional and systemwide water management and the reoperation of surface storage reservoirs and related infrastructure of flood and water management systems can provide many benefits in a changing climate. These include capturing higher peak flows to protect beneficial uses of water, such as protecting drinking water quality, providing cold water releases for fish, preventing seawater intrusion, generating clean hydroelectricity, providing recreational opportunities in a warmer climate, and offsetting the loss of snowpack storage by facilitating increased storage of water above and below the ground.

System reoperation of existing flood and water infrastructure will require the active cooperation of many agencies, local governments, and landowners. Successful system reoperation will require that the benefits are evident to federal, tribal, regional, and local partners. Systemwide operational coordination and cooperation need to occur in advance of responding to extreme hydrologic events that may become larger and more frequent with climate change.

Related Actions

3.1 Promote public education about California's groundwater.

3.2 Improve collaboration and coordination among federal, State, tribal, regional, and local agencies and organizations to ensure data integration, coordinate program implementation, and minimize duplication of efforts.

3.3 Increase availability and sharing of groundwater information.

3.4 Strengthen and expand the California Statewide Groundwater Elevation Monitoring (CASGEM) Program for its long-term sustainability.

3.5 Under the CASGEM Program, improve understanding of California groundwater basins by conducting groundwater basin assessments of CASGEM high-priority basins in conjunction with the CWP 5-year production cycle.

3.6 Conduct an assessment of all SB 1938 groundwater management plans and develop guidelines to promote best practices in groundwater management.

3.7 Develop analytical tools to assess conjunctive management and groundwater management strategies.

3.8 Increase statewide groundwater recharge and storage by two (2) million acre-feet (maf) (current average annual statewide groundwater use is about 16 maf).

3.9 Evaluate reoperation of the state's existing water supply and flood control systems.

3.10 DWR and the U.S. Bureau of Reclamation (USBR) should:

- 3.10.1 Complete the North-of-the-Delta Offstream Storage, Shasta Lake Water Resources, and Upper San Joaquin River Basin Storage investigations.
- 3.10.2 Complete the investigation of the further enlargement of the Los Vaqueros Reservoir.
- 3.10.3 USBR, in collaboration with DWR, should complete an investigation to enlarge/raise BF Sisk Dam and San Luis Reservoir.

PLACEHOLDER Table 8-3 Related Actions and Performance Measures for Objective 3 (Expand Conjunctive Management of Multiple Supplies)

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Objective 4 — Protect and Restore Surface Water and Groundwater Quality

Protect and restore surface water and groundwater quality to safeguard public and environmental health and secure California's water supplies for beneficial uses.

As California's population continues to grow and climate change impacts continue to occur, greater demands will be made on the available water supply, and threats to water quality from known and emerging pollutants will increase, potentially causing further impairments to the waters and their uses. When water quality is impaired, the state is deprived of critical water supplies needed to support its growing population, vital economy, and the environment. Protecting and restoring water quality ensures that water supplies are available for all beneficial uses and all communities. It is also a crucial element of IWM and essential to maintaining healthy watersheds.

Healthy watersheds, or drainage basins, that provide clean and plentiful surface water and groundwater, and support healthy riparian and wetland habitat, are essential to support California's resources and economic future. A watershed approach is hydrologically focused; recognizes the degree to which groundwater and surface water bodies are connected physically; is aware of the linkages between water quantity and water quality; and requires a comprehensive, long-term approach to water resources management that takes system interactions into account. State government efforts to protect and restore water quality are essential but alone cannot support a comprehensive watershed protection approach. Success depends on the integration of federal, State, tribal, regional, and local programs and projects, including land use decisions made by local officials, stakeholder involvement, and the actions of millions of individuals, which, when taken together, can have significant impacts and make a difference.

Related Actions

4.1 Protect and restore surface water quality by implementing strategies to protect the past, present, and probable future beneficial uses for all 2010-listed (Clean Water Act, Section 303[d]) water bodies by 2030.

- 4.1.1 Implement a statewide strategy to efficiently prepare, adopt, and implement total maximum daily loads (TMDLs), which result in water bodies meeting water quality standards, and adopt and begin implementation of TMDLs for all 2010-listed water bodies by 2019.
- 4.1.2 Manage urban runoff volume to reduce pollutant loadings, reduce wet weather beach postings and closures by 75 percent by 2020, eliminate dry weather beach closures and postings and, where applicable, promote stormwater capture and re-use for development of sustainable local water supplies.
- 4.1.3 Take appropriate enforcement actions and innovative approaches as needed to protect and restore the beneficial uses of all surface waters.

4.2 Protect and restore groundwater quality by improving and protecting groundwater quality in high-use basins by 2030.

- 4.2.1 Communities should implement an integrated groundwater protection approach to improve and protect groundwater in high-use basins that:
  - A. Evaluate and regulate activities that impact or have the potential to impact beneficial uses.
  - B. Recognize the effects of groundwater and surface water interactions on groundwater quality and quantity.
  - C. Encourage and facilitate local management of groundwater resources.
- 4.2.2 State government should identify strategies to ensure that communities with contaminated groundwater have a clean and reliable drinking water supply, which may include remediation of polluted or contaminated groundwater, surface water replacement, and/or groundwater treatment.
- 4.2.3 State government should implement the recommendations in the SWRCB's Report to the Legislature on addressing issues associated with nitrate contaminated groundwater.
- 4.2.4 The SWRCB and Regional Water Quality Control Boards (RWQCBss) should maintain high-quality groundwater basins through application of antidegradation directives using waste discharge requirements (WDRs) and the remediation of polluted or contaminated groundwater.
- 4.2.5 Regional and local stakeholders should prepare salt and nutrient management plans for each groundwater basin/subbasin in California by 2016. These salt/nutrient management plans should be prepared as outlined in the SWRCB's Water Quality Control Policy for Recycled Water adopted May 14, 2009, the purpose of which is to increase the use of recycled water from municipal wastewater sources that meets the definition in California Water Code section 13050(n), in a manner that implements State and federal water quality laws. The RWQCBs should incorporate salt and nutrient management plans into basin plans, where appropriate.

4.3 Comprehensively address water quality protection and restoration, and the relationship between water supply and water quality, and describe the connections between water quality, water quantity, and climate change, throughout California's water planning processes.

- 4.3.1 As part of the CWP, the SWRCB should prepare a comprehensive water quality policy to guide the State's water management activities, including protection and restoration of water quality through the integration of statewide policies and plans, regional water quality control plans (basin plans), and the potential effects of climate change on water quality and supply.

4.3.2 RWQCBs should consistently organize basin plans to provide a clear structure that readily conveys key elements (e.g., beneficial uses, potential impacts of climate change, water quality objectives, goals for watersheds, plans for achieving those goals, and monitoring to inform and adjust the plans) and that fully integrates other water quality control plans, such as the California Ocean Plan and Water Quality Control Plan for Enclosed Bays and Estuaries.

4.3.3 RWQCBs should adopt basin plan amendments through a collaborative process that involves third parties and incorporates SWRCB requirements and stakeholder interests. An example is the Santa Ana RWQCB's Basin Plan amendment initiated with funding assistance from stakeholders as required in the SWRCB's Recycled Water Policy.

4.3.4 State Government should continue to support efforts of the California Water Quality Monitoring Council to develop a centralized Geographic Information System (GIS) database (EcoAtlas) that displays watershed information, including watershed boundaries, TMDLs, monitoring data, water body types, assigned BUs, wetlands, California Rapid Assessment Method scores, vegetation types, and other data. A key component of effective water quality planning is access to pertinent watershed information so that regulatory actions can strategically protect and improve watershed aquatic resources.

4.4 To protect source water and safeguard water quality for all beneficial uses, State government should implement the recommendations from the following CWP Resource Management Strategies found in Volume 3: pollution prevention, matching water quality to use, salt and salinity management, urban stormwater runoff management, groundwater/aquifer remediation, recharge area protection, municipal recycled water, and drinking water treatment and distribution.

4.5 CDPH will continue to implement its Small Water System Program Plan to assist small water systems (especially those serving disadvantaged communities) that are unable to provide water that meets primary drinking water standards.

4.5.1 CDPH will share the Small Water System Program Plan with relevant federal, tribal, State, regional, and local agencies, as well as stakeholders, to foster additional opportunities for funding, coordinate construction projects in communities, and to assist in local and regional planning efforts.

4.5.2 CDPH will utilize GIS tools to identify large water systems in close proximity to targeted small water systems, and conduct targeted outreach to these large water systems to encourage them to consolidate the small systems into their service area.

4.5.3 CDPH will work with stakeholders to identify obstacles to consolidation (including financial, legal, and local issues) and develop possible actions to address these obstacles.

4.5.4 CDPH will participate in statewide planning efforts to address the water infrastructure needs of small water systems. CDPH should seek input from other states and the federal government on innovative, successful efforts to address the needs of small water systems, and should share its results on implementation of its Small Water System Program Plan.

PLACEHOLDER Table 8-4 Related Actions and Performance Measures for Objective 4 (Protect and Restore Surface Water and Groundwater Quality)

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Objective 5 — Practice Environmental Stewardship

Practice, promote, improve, and expand environmental stewardship to protect biological diversity and sustain natural water and flood management systems in watersheds, on floodplains, and in aquatic habitats.

California has lost more than 90 percent of the wetlands and riparian forests that existed before the Gold Rush. Successful restoration of aquatic, riparian, and floodplain species and natural communities ordinarily depends on at least partial restoration of physical processes that are driven by water. These processes include the flooding of floodplains, the natural pattern of erosion and deposition of sediment, the balance between infiltrated water and runoff, and large seasonal variation in stream flow. Reduction of these physical processes often leads to displacement of native species by exotic species, which presents another huge barrier to ecosystem restoration.

Water supply and flood management projects that preserve, enhance, and restore biological diversity and ecosystem processes are likely to be more sustainable — operating as desired with less maintenance — than those that do not. Projects are more sustainable when they work with, rather than against, natural processes that distribute water and sediment. To include ecosystem restoration in a project usually requires a degree of return to more natural patterns of erosion, sedimentation, flooding, and stream flow, among others. This, in turn, makes such projects less susceptible to the effects of catastrophic events and minimizes the cost and effort of maintenance.

Related Actions

5.1 Governments and the private sector should work together to create and maintain a network of protected reserve areas across the state that builds on existing conservation investments, and provides refuge areas and migration corridors that allow species to adjust to conditions associated with climate change. The network should include river corridors that connect high elevations to valleys and reestablish natural hydrologic connections between rivers and their historic floodplains. (California Natural Resources Agency 2009)

- 5.1.1 The California Natural Resources Agency should develop and implement a comprehensive tracking system to identify the lands that already are protected and lands that are a priority for protection.

5.2 All agencies that own and operate water and flood management systems should include actions in their respective natural resource management plans that restore natural processes of erosion and sedimentation in rivers and streams and increase the quantity, diversity, quality, and connectivity of riverine and floodplain habitats. Local planning activities, including integrated regional water management (IRWM), urban water management plans, watershed management plans, natural community conservation plans, habitat conservation plans, and other water resource or floodplain focused planning efforts, should include objectives to meet these goals.

- 5.2.1 Re-establish one million acres of contiguous natural riparian, wetland, and floodplain habitat that is subject to periodic flooding for at least 50 percent of the river miles in the regions. This can contribute to Assembly Bill (AB) 32 GHG reduction goals through enhanced carbon sequestration. IRWM and regional flood management plans that incorporate corridor connectivity and restoration of native aquatic and terrestrial habitats to support increased biodiversity and resilience to a changing climate should receive additional credits in State government water and flood grant programs. (See objectives 1, 2, and 6)

5.3 State and federal governments should encourage, prioritize, and identify financing for actions to protect, enhance, and restore at least one million acres of upper watershed forests and meadows that act as natural water and snow storage. These actions should include efforts to reduce the risks and impacts of catastrophic wildfire. This measure improves water supply reliability, protects water quality, safeguards high-elevation habitats, and supports carbon sequestration and forest-based economies. (See objectives 1, 3, and 4.) (Association of California Water Agencies 2013; California Air Resources Board 2008)

5.4 Governments and the private sector should develop and support programs that pay private landowners and managers to protect and improve habitat and nature's water-related services, including flood protection, water quality, groundwater recharge and storage, reversal of land subsidence, prevention of large wildfires, shading of rivers and streams, and reduced soil erosion.

5.5 Governments and the private sector should work to incorporate the economic value of nature's goods and services into natural resource management decisions. Such recognition should include development of ways to measure the economic value of those services and the financial return from investment in their protection and enhancement.

5.6 Federal, state, and local agencies should provide greater resources and coordinate efforts to control invasive species and prevent their introduction. (California Department of Fish and Game 2007)

5.7 State and federal government should work with dam owners/operators, tribes, and other stakeholders to evaluate opportunities and technologies to reintroduce anadromous fish to upper watersheds. Re-establishment of anadromous fish upstream of dams may provide flexibility in providing cold water downstream in conjunction with water and flood systems reoperation strategies. The State and federal governments should develop funding sources to support partnerships in constructing fish passage at dams and to assist removal of obsolete dams that pose a public safety and ecological risk.

5.8 State, federal, and local government should identify and prioritize protection of lands of San Francisco Bay and the Delta that will provide the habitat range for tidal wetlands to adapt to and shift with sea level rise. A climate change resilient San Francisco Bay and Delta should include creating greater flood capacity by construction of setback levees on islands and removal of strategic island levees that also creates opportunities for tidal wetland and riparian restoration. Such lands and actions can help maintain estuarine ecosystem functions and act as storm buffers, protecting people and property from flood damages. (San Francisco Estuary Partnership 2007)

5.9 State government should prioritize and expand Delta islands and Suisun Marsh subsidence reversal and land accretion projects to help reestablish equilibrium between land and estuary elevations. Sediment-soil accretion is a cost-effective, natural process that can help sustain the Delta and Suisun Marsh ecosystem, and reduce communities' risks from flooding, as well as sequester carbon and restore estuarine ecosystem functions.

5.10 State and federal government should fund natural resource protection agencies to continue work to determine fishery needs and provide funds for water right holders to meet those needs.

PLACEHOLDER Table 8-5 Related Actions and Performance Measures for Objective 5 (Practice Environmental Stewardship)

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Objective 6 — Improve Flood Management Using an Integrated Water Management Approach

> Promote and practice flood management that reduces flood risk to people and property and maintains and enhances natural floodplain functions using an IWM approach. An IWM approach utilizes a systemwide perspective and considers all aspects of water management, including public safety and emergency management, environmental sustainability, and economic stability (which includes water supply reliability, water quality, and system and community resiliency).

Flood management has traditionally had the single purpose of protecting people and property that could be harmed by flood waters by separating them from the flood. In contrast, flood management using an IWM approach seeks to protect people and property exposed to flooding, while also addressing the quality and functioning of ecosystems, the reliability of water supply and water quality, and economic stability (including both economic and cultural considerations). This shift changes the focus of flood management from managing flood water to managing floodplains, thus allowing for both a local and a systemwide context.

Today, one in five Californians live in a floodplain. There are more than 20,000 miles of levees, over 1,500 dams, more than 1,000 debris basins, and other facilities statewide that manage flood water and provide flood risk reduction. Traditionally, Californians have reduced the risk of flooding through actions like building dams, levees, and other facilities that constrain floodwaters and provide protection to people from the harmful aspects of flooding, but these facilities also diminish the natural benefits of floods. These facilities face a number of challenges, including reaching the end of their useful life, inadequate operations and maintenance, insufficient capacities, and stressors resulting from climate change. Climate change may cause sea levels to rise, produce higher tides, shift precipitation patterns toward more intense winter storms, and produce higher peak flows, thereby increasing the state's flood risk.

A collection of laws passed in 2007 and 2008 focused attention on flooding and the risks it poses. These laws intended to promote a new perspective for managing floods. Despite the amount of progress and improvements that have been made since the passage of these laws, Californians still face an unacceptable level of flood risk. Current infrastructure strains to meet existing objectives, and changing climatic conditions could exacerbate this situation. With climate change and other changing conditions, improving system flexibility and adaptability must be a fundamental tactic, especially with respect to water and flood system operations and management (see Objective 3).

Flood management is evolving from narrowly focused traditional approaches toward an IWM approach. This more integrated approach includes a mix of structural and non-structural approaches to reduce flood risk and enhance the ability of undeveloped floodplains and other open spaces to behave more naturally to absorb, store, and slowly release floodwaters during small and medium-size events. Flood management using an IWM approach considers land and water resources on a watershed scale to maximize the benefits

of floodplains; minimize loss of life and damage to property from flooding; recognize the benefits to ecosystems from periodic flooding; and provide other potential benefits, such as water supply reliability, water quality improvements, and increased recreation opportunities. Flood management using an IWM approach extends the range of resource management strategies that could be employed and leads to addressing a wide variety of needs. Using an IWM approach encourages an increased understanding of the cause and effect of different management actions. Additionally, the IWM approach is tailored to the physical attributes of a hydrologic region or watershed; the presence of undeveloped floodplains; the type of flood hazards (e.g., riverine, alluvial fan, coastal); and the areal extent of flooding.

An IWM approach requires unprecedented alignment and cooperation among public agencies, tribal entities, land owners, interest-based groups, and other stakeholders. This approach relies on blending knowledge from a variety of disciplines, including engineering, planning, economics, environmental science, public policy, and public information. It is not a one-time activity but rather an ongoing process. The following table of actions provides recommendations for improving flood management by using an IWM approach.

Related Actions

6.1 Agencies at all levels should utilize IWM principles that consider flood risk, mitigation, and protection of natural floodplain functions for planning and implementing flood management projects. Collaborate with planners, engineers, scientists, regulators, and other stakeholders to identify flood risk reduction and floodplain restoration strategies that can be used in local and regional planning efforts such as general plans, regional economic and transportation plans, resource conservation plans, floodplain management plans, and others. This should include best management practices (BMPs) for coastal zones, alluvial fans, headwaters, and riverine floodplains in urbanized and non-urbanized areas.

6.2 The State should prepare an update to the 2013 California's Flood Future Report: Recommendations for Managing the State's Flood Risk (California's Flood Future), which further advances the recommendations developed as part of the original California's Flood Future effort.

6.3 Local agencies should work together in regions to develop regional flood risk assessments to evaluate potential adverse impacts of flooding on life, property, infrastructure, the environment, and the economy. The risk assessments should be developed through regional collaboration among local, state, and federal stakeholders, and based on a consistent methodology, appropriate to the region, for flood risk assessment. This assessment should include a determined acceptable level of flood risk for people, property, and the environment within the region. The flood risk assessments should include a set of digital maps for planning and communication of flood risk to agencies, the public, elected officials, and other stakeholders.

6.4 The State should develop comprehensive economic evaluation guidance for flood risk assessment and other flood management activities. The economic evaluation guidance should include methods to evaluate ecosystem services and other IWM benefits and should be adaptable to different areas of the state.

6.5 Local agencies should work together regionally to develop regional flood risk management plans based on regional risk assessments and define short-term and long-term goals, objectives, actions, and

associated implementation strategies for reducing flood risk, as well as define opportunities to enhance natural floodplain functions and provide other IWM benefits. These plans should reflect a collaborative, stakeholder-based process addressing the unique regional and statewide interests, critical needs, and priorities. These plans should address, as appropriate: the locally identified level of flood protection; flood risk and flood damage reduction and mitigation strategies, including natural floodplain function; operations and maintenance; and local, regional and state IWM strategies.

6.6 The State should work with federal and local agencies to develop a statewide flood management investment approach. This approach would evaluate short- and long-term financing needs, as well as available investment strategies, and should lay out potential future investment alternatives for flood management statewide. This action will also be informed by the outcomes of Objective 17.

6.7 The State should take appropriate action to facilitate revenue generation and support regional flood risk management. This includes as evaluation of existing financing mechanisms and legal frameworks to facilitate the development of regional flood-risk reduction financing.

6.8 The State should work with stakeholders to develop BMPs for land use planning that achieve flood risk reduction and protection of natural floodplain functions. The State should collaborate with planners, engineers, scientists, regulators, and other stakeholders. BMPs should be developed for local planning (e.g., general plans, land use regulations) that is conducted by cities and counties and for regional planning (e.g., sustainable communities strategies and blueprint plans) that is conducted by regional planning agencies. Land use planning BMPs should be developed for coastal zones, alluvial fans, headwaters, and riverine floodplains in urbanized and non-urbanized areas.

6.9 The State should work with federal and local agencies to develop a comprehensive regional vulnerability analysis approach and set of regional adaptation strategies for climate change impacts on flood risk and floodplain ecosystems.

6.10 The State should create and coordinate statewide and regional environmental regulatory working groups to improve and streamline regulatory review processes that will address critical flood risk reduction projects, flood system maintenance, flood emergency response, and floodplain restoration (see Objective 16). State and federal environmental regulatory agencies, in collaboration with regional stakeholders, should take actions to streamline regulatory review while recognizing the unique differences among geographical regions of the state.

6.11 The State should develop a comprehensive set of materials and tools to assist public agencies in obtaining accurate information on flood risk and floodplain conditions and increase public awareness of flood risks and potential IWM solutions in that region. The State should develop regional and statewide indicators of flood risk and floodplain conditions and create online regional and statewide flood risk and floodplain information resources for government agencies and for the public. These resources should include regional maps with information on flood risk and floodplain conditions and indicators; outreach and communication tools, including tailored outreach materials as needed to meet the unique needs of each region; and materials that clarify the roles and responsibilities of local, state and federal agencies in flood risk reduction and floodplain restoration efforts, including emergency response.

6.12 The State should increase support for flood emergency preparedness, response, and recovery programs to reduce flood risk by identifying data and forecasting needs; conducting statewide flood emergency management (EM) exercises; working with locals to improve flood EM plans; and supporting increased coordination between flood EM responders, planners, facility managers, and resource agencies. (See Objective 8).

6.13 In June 2012, the Central Valley Flood Protection Board adopted the first Central Valley Flood Protection Plan (CVFPP). Prepared by DWR, the plan presents a long-term vision for improving integrated flood management in the Central Valley and achieving a more flexible, resilient, and sustainable flood management system over time. In implementing this vision, the State should take the following actions consistent with the goals of the CVFPP:

- 6.13.1 Update the CVFPP in years ending in 2 and 7.
- 6.13.2 Continue to work with local and regional entities and the federal government to plan and refine physical improvements to the State Plan of Flood Control.
- 6.13.3 Periodically update the Flood Control System Status Report (FCSSR), which provides information on the current status and conditions of State Plan of Flood Control facilities.
- 6.13.4 Continue to develop criteria and guidance to assist local cities and counties in demonstrating an urban level of flood protection consistent with State law.
- 6.13.5 Continue to develop policies, guidance, and funding mechanisms to implement flood management projects by using an IWM approach in the Central Valley.
- 6.13.6 Continue to develop guidance and take actions to support wise management of floodplains and residual flood risks present in floodplains protected by the State Plan of Flood Control.

6.14 In May 2013, the Delta Stewardship Council adopted the Delta Plan. The Delta Plan was developed to guide State and local agencies to help achieve the coequal goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. To support the implementation of the Delta Plan, the following flood-related actions should be taken:

- 6.14.1 The Legislature should establish a Delta Flood Risk Management Assessment District with fee authority (including over State infrastructure).
- 6.14.2 The Legislature should fund the State to evaluate and implement a bypass and floodway on the San Joaquin River near Paradise Cut.
- 6.14.3 The State should evaluate whether additional areas both within and upstream of the Delta should be designated as floodways and should include the consideration of the anticipated effects of climate change in these areas.
- 6.14.4 The State should develop criteria to define locations for future setback levees in the Delta and Delta watershed.
- 6.14.5 The Legislature should require adequate levels of flood insurance for residences, businesses, and industries in flood-prone areas.
- 6.14.6 The Legislature should consider statutory and/or constitutional changes that would address the State's potential flood liability.
- 6.14.7 The U.S. Army Corps of Engineers (USACE) should consider a variance that exempts Delta levees from the USACE's levee vegetation policy.
- 6.14.8 State and local agencies and regulated utilities that own and/or operate infrastructure in the Delta should prepare coordinated emergency response plans to protect the infrastructure from long-term outages resulting from failures of the Delta levees. The emergency procedures should consider methods that also would protect Delta land use and ecosystem.

PLACEHOLDER Table 8-6 Related Actions and Performance Measures for Objective 6 (Improve Flood Management Using an Integrated Water Management Approach)

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Objective 7 — Manage the Delta to Achieve the Coequal Goals for California

> Manage the Delta as both a critically important hub of the California water system and as California's most valuable estuary and wetland ecosystem. Achieve the two coequal goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place.

After years of slow decline, the condition of the Delta's watery ecosystem, as measured especially by the population of wild salmon and other native fishes, has gone critical. Today, all those who depend on or value the Delta are, in a word, afraid. Delta residents face the possibility of floods from the east when the rivers flow strongly and of salinity intrusion from the west if they flow feebly. Fishermen, both commercial and recreational, fret about the future of salmon and other species. Water suppliers that receive water from the Delta find those supplies insecure and subject to interruption by weather vagaries, levee failures, or pumping restrictions imposed in the desperate attempt to stem the decline of fish.

In 2009, the Legislature made its latest, most determined bid to find solutions, passing the Delta Reform Act and associated bills. First and foremost, it declared that State policy toward the Delta must henceforth serve two "coequal goals" (see Box 8-3):

- Providing a more reliable water supply for California.
- Protecting, restoring, and enhancing the Delta ecosystem.

These goals, the Legislature added, must be met in a manner that:

- Protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place.

By affirming the equal status of ecosystem health and water supply reliability, the Legislature changed the terms of the conversation. It changed them further with the following pronouncement: "The policy of the State of California is to reduce reliance on the Delta in meeting California's future water supply needs." Here was recognition that, for the sake of the water system and the Delta both, a partial weaning of the one from the other is required.

With the package of 2009 water bills, the Legislature also established the Delta Stewardship Council with a mandate to resolve long-standing issues and to develop a Delta Plan. The Delta Plan is California's plan for the Delta, prepared in consultation with, and to be carried out by, all agencies in the field: the SWRCB, which allocates water rights and protects water quality; DWR, which is the State's water planner and operator of the State Water Project; the California Department of Fish and Wildlife (DFW), which is responsible for the welfare of the living system of the Delta; the Delta Protection Commission, which oversees land use and development on low-lying Delta islands; and many more agencies, State and local.

PLACEHOLDER Box 8-3 Delta Policy on Coequal Goals

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Related Actions

7.1 State or local public agencies undertaking covered actions must file certifications of consistency with the Delta Stewardship Council. Certifications of Consistency must include detailed findings that demonstrate how the covered action is consistent with all the policies of the Delta Plan.

7.2 Provide a more reliable water supply for California by implementing the following:

7.2.1 All water suppliers should fully implement applicable water efficiency and water management laws, including urban water management plans; the 20 percent reduction in statewide urban per capita water usage by 2020; agricultural water management plans; and other applicable water laws, regulations, or rules.

7.2.2 DWR, in consultation with the Delta Stewardship Council, the SWRCB, and others, should develop and approve guidelines for the preparation of a water supply reliability element as part of the update of an urban water management plan, agricultural water management plan, integrated water management plan, or other plan that provides equivalent information about the supplier's planned investments in water conservation and water supply development. The expanded water supply reliability element should include the details recommended in the Delta Plan. Water suppliers that receive water from the Delta watershed should include an expanded water supply reliability element in their water management plans, starting in 2015.

7.2.3 DWR and the SWRCB should establish an advisory group with other state agencies and stakeholders to identify and implement measures to reduce impediments to achievement of statewide water conservation, recycled water, and stormwater goals. This group should evaluate and recommend updated goals for additional water efficiency and water resource development.

7.2.4 DWR, the SWRCB, the CDPH, and other agencies, in consultation with the Delta Stewardship Council, should revise State grant and loan ranking criteria to be consistent with Water Code section 85021 and to provide a priority for water suppliers that includes an expanded water supply reliability element in their adopted urban water management plans, agricultural water management plans, and/or IRWM plans.

7.2.5 DWR and the USBR will complete the Bay Delta Conservation Plan (both the Habitat Conservation Plan/Natural Communities Conservation Plan and the Environmental Impact Report/Environmental Impact Statement), a 50-year ecosystem-based plan designed to restore fish and wildlife species in the Delta in a way that protects California's water supplies while minimizing impacts on Delta communities and farms. Upon adoption of the BDCP and receiving the necessary permits by the regulating agencies, DWR and the USBR will implement the 22 proposed conservation measures in the BDCP to help wildlife and reverse the decline of native fish populations in the Delta.

7.2.6 DWR, in coordination with the SWRCB, CDPH, Public Utilities Commission, Energy Commission, USBR, California Urban Water Conservation Council, and other stakeholders, should develop a coordinated statewide system for water use reporting. Water suppliers that export water from, transfer water through, or use water in the Delta watershed should be full participants in the database.

7.2.7 DWR, in consultation with the SWRCB and other agencies and stakeholders, should evaluate and include in the next and all future CWP updates information needed to track water supply

reliability performance measures identified in the Delta Plan, including an assessment of water efficiency and new water supply development, regional water balances, improvements in regional self-reliance, reduced regional reliance on the Delta, and reliability of Delta exports, and an overall assessment of progress in achieving the coequal goals.

7.2.8 Immediately provide financial incentives and technical assistance through the IRWM plans and the Local Groundwater Assistance Program to improve surface water and groundwater monitoring and data management.

7.3 Water quality in the Delta should be maintained at a level that supports, enhances, and protects beneficial uses identified in the applicable SWRCB or RWQCB water quality control plans.

7.3.1 The SWRCB should update the Bay-Delta Water Quality Control Plan objectives as follows:

A. By June 2, 2014, adopt and begin to implement updated flow objectives for the Delta that are necessary to achieve the coequal goals.

B. By June 2, 2018, adopt, and as soon as reasonably possible, implement flow objectives for high-priority tributaries in the Delta watershed that are necessary to achieve the coequal goals.

7.3.2 The SWRCB and RWQCBs should work collaboratively with DWR, DFW, and other agencies and entities that monitor water quality in the Delta to develop and implement a Delta Regional Monitoring Program that will be responsible for coordinating monitoring efforts so Delta conditions can be efficiently assessed and reported on a regular basis.

7.3.3 DFW and other appropriate agencies should prioritize and implement actions for non-native invasive species from the *Conservation Strategy for Restoration of the Sacramento–San Joaquin Delta Ecological Management Zone and the Sacramento and San Joaquin Valley Regions* (California Department of Fish and Game 2011).

PLACEHOLDER Table 8-7 Related Actions and Performance Measures for Objective 7 (Manage the Delta to Achieve the Coequal Goals for California)

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Objective 8 — Prepare Prevention, Response, and Recovery Plans

Prepare prevention, response, and recovery plans for floods, droughts, and catastrophic events to help residents and communities, particularly disadvantaged communities, make decisions that reduce the consequences and recovery time of these events when they occur.

An overall purpose of this objective is to prepare prevention response and recovery plans that coordinate the actions by State agencies, local governments, business and industry, and citizens.

The State Multi-Hazard Mitigation Plan (SHMP) is the official statement of California's statewide hazard mitigation goals, strategies, and priorities. Hazard mitigation can be defined as any action taken to reduce or eliminate long-term risk to life and property by natural and human-caused disasters. The SHMP classifies hazards into a hierarchy of primary impacts (earthquake, flood, wildfire); secondary impacts (vulnerable levees, landslides, tsunamis); climate-related hazards (drought, heat, severe storms); and other (terrorism, hazardous materials release, dam failure).

The hazards of floods and droughts have an obvious nexus to water planning. Other hazards, such as earthquakes and wildfire, have a less obvious nexus, but they can have impacts on and from water. As California grows, it faces the dual challenges of addressing vulnerabilities in the built and natural environment while accommodating growth and change in ways that avoid or mitigate future vulnerabilities.

Of these hazards, drought differs in the timing of the impacts. The impacts of drought are typically felt first by those most reliant on annual rainfall — ranchers engaged in dry land grazing, rural residents relying on wells in low-yield rock formations, or small water systems lacking a reliable source. Drought impacts increase with the length of a drought, as carryover supplies in reservoirs are depleted and water levels in groundwater basins decline. However, unlike earthquakes, fires, or floods, drought onset is slow, allowing time for water suppliers to implement preparedness and response actions to mitigate reductions in normal supplies.

Related Actions

8.1 Communities in floodplains should consider the consequences of flooding and should develop, adopt, practice, and regularly evaluate formal flood emergency preparedness, response, evacuation, and recovery plans (see Objective 6).

8.1.1 State government should assist disadvantaged communities located in floodplains to prepare for and recover from flood emergencies.

8.2 Water shortage contingency plans prepared as part of the 2015 urban water management plans should increase drought planning from a 3-year drought to a 4-year drought, until more accurate information is available.

8.3 By December 2014, DWR will update the California Drought Contingency Plan, which includes:

A. Articulation of a coordinated strategy for preparing for, responding to, and recovery from drought.
B. Assessment of state drought contingency planning and preparedness.
C. Description of State government's role and responsibilities for drought preparedness.
D. Identification of needed improvements for drought monitoring and preparedness.
E. Identification of measures to mitigate the economic, environmental, and social risks and consequences of drought events.
F. Assessment of and adaptation to the impacts of drought under existing and future conditions, including climate change.
G. Identification of needed improvements to real-time surface water and groundwater monitoring programs.
H. Identification of needed research in drought forecasting.
I. Identification of needed research of the indices and metrics for assessing the levels of drought.

8.4 DWR will work with the California Governor's Office of Emergency Services (Cal OES) to develop preparedness plans to respond to other catastrophic events, such as earthquakes, wildfires, chemical spills, facility malfunctions, and intentional disruption, which would disrupt water resources and infrastructure.

8.5 Cal OES, the California Governor's Office of Planning and Research (OPR), and the California Natural Resources Agency should lead an effort to update the State Emergency Plan and State Multi-

Hazard Mitigation Plan to strengthen consideration of climate impacts to hazard assessment planning, implementation priorities, and emergency responses.

8.6 Cal OES, DWR, and the Delta counties should work together to develop a catastrophic flood response plan for the Delta region. This plan should support an integrated response within the Delta and increase communication efforts between stakeholders and federal, State, tribal, local, and private agencies.

8.7 Cal OES will work with appropriate agencies to update the San Francisco Bay Area Catastrophic Earthquake Response Plan and incorporate lessons learned from the 2013 Golden Guardian exercise.

PLACEHOLDER Table 8-8 Related Actions and Performance Measures for Objective 8 (Prepare Prevention, Response, and Recovery Plans)

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Objective 9 — Reduce the Carbon Footprint of Water Systems and Water Uses

Reduce the carbon footprint of water and wastewater management systems by implementing the water-related strategies in the AB 32 Scoping Plan to mitigate greenhouse gas emissions.

According to the California Energy Commission, the end use of water is the most energy-intensive portion of the water use cycle in California. Approximately one-fifth of the state's electricity is used for water conveyance and distribution. In December 2008, the California Air Resources Board (ARB) approved the Proposed AB 32 Scoping Plan, which included six measures for reducing the energy intensity and resulting GHG emissions of water uses and water and wastewater management systems. These six measures were included as related actions in Update 2009.

In early 2013, ARB initiated activities to update the AB 32 Scoping Plan to evaluate the mix of AB 32 policies to ensure that California is on track to achieve the 2020 GHG reduction goal. The AB 32 Scoping Plan update will define ARB's climate change priorities for the next five years and lay the groundwork to reach post-2020 goals set forth in Executive Orders S-3-05 and B-16-2012. The AB 32 Scoping Plan update will highlight California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan (2008). It will also evaluate how to align the State's longer-term GHG reduction strategies with other State policy priorities, such as for water, waste, natural resources, clean energy and transportation, and land use.

It is anticipated that the revised measures related to water in the AB 32 Scoping Plan update will be incorporated as related actions under this objective as part of Update 2013. ARB's timeline for the AB 32 Scoping Plan update is to release a preliminary draft for public review and comment in mid-August 2013, then provide an updated Scoping Plan document to ARB for consideration in November 2013. Additional information is available on the ARB's Web site at: http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm.

Related Actions

[Note: These related actions are under development and will include actions and recommendations from the updated Water-Energy Team of the Climate Action Team (WETCAT) strategy when available.]

PLACEHOLDER Table 8-9 Related Actions and Performance Measures for Objective 9 (Reduce Energy Consumption of Water Systems and Uses)

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Objective 10 — Improve Data, Analysis, and Decision-Support Tools

Improve and expand data monitoring, management, analysis, and decision-support tools to advance IWM, in light of demographic, climate, and institutional uncertainties.

This objective and its related actions rely heavily on information contained in Chapter 6, "Integrated Data and Analysis." The related actions were informed by advice from the Statewide Water Analysis Network (SWAN), which serves as the technical advisory group for the CWP. SWAN consists of technical experts from federal, State, and local agencies; universities; non-governmental organizations; consultants; and tribes. Additional sources of information include the Update 2013 featured companion State plans described in Chapter 4, "Strengthening Government Alignment," particularly the Delta Plan from the Delta Stewardship Council and the recommendations from the Alluvial Fan Task Force. The actions were also informed by the CWP's State Agency Steering Committee, Public Advisory Committee, and Tribal Advisory Committee, as well as stakeholder input at workshops to discuss the Update 2013 objectives and related actions.

The related actions described here are intended to promote significant improvements in the way water managers develop and share water information by making data more accessible, supporting critical updates in analytical tools, and fostering collaboration around data and tools used to support policy decisions. California needs better data and analytical tools to produce useful and more integrated information to support IWM. Investment in our analytical capabilities lags far behind the growing challenges facing water managers. Significant new investment in our technical capabilities is needed to prepare for the impacts from extended droughts, flood events, and climate change, as well as to improve management of the Delta. Improving communication between technical experts and decision-makers goes hand in hand with improving our technical capabilities because sound technical information is critical to making robust policy decisions.

Related Actions

To develop and use analytical tools more effectively, DWR should take the following actions, in coordination with the SWRCB, CDPH, Public Utilities Commission, Energy Commission, USBR, California Urban Water Conservation Council, California Council for Science and Technology, IRWM Regional Water Management Groups, and other agencies, organizations, tribes, and stakeholders.

10.1 Expand the Central Valley Planning Area scale analytical tool and scenario studies developed during Update 2013 to assess future vulnerabilities and management responses in the other hydrologic regions for the California Water Plan Update 2018. The regional analytical tools and analysis should include evaluation of water supply reliability, water efficiency and new water supply development,

regional water balances, improvements in regional self-reliance, reduced regional reliance on the Delta, and reliability of Delta exports. Over time, these tools should be enhanced to include water quality, economic, and biological metrics, as well as to evaluate a greater number of the resource management strategies in Volume 3.

10.2 Develop a shared conceptual understanding, analytical framework, and quantitative description of how California watersheds and water management systems are represented in analytical tools at different spatial and temporal scales for use by federal, State, tribal, regional, and local agencies and organizations.

10.3 Support the California Water and Environmental Modeling Forum (CWEMF) in updating its 2000 modeling protocols and standards to provide more current guidance to water stakeholders and decision-makers, and their technical staff, as models are developed and used to solve California's water and environmental problems.

To improve water data and information, DWR should take the following actions, in coordination with the SWRCB, CDPH, Public Utilities Commission, Energy Commission, USBR, California Urban Water Conservation Council, California Council for Science and Technology, IRWM Regional Water Management Groups, and other agencies, organizations, tribes, and stakeholders.

10.4 Establish standards and protocols for data collection and management that facilitate sharing of information among agencies and modeling studies. This would include identifying and cataloging existing water data for California, creating a water data dictionary, and developing standards and metadata for water data monitoring, collection, and reporting.

10.5 Develop a strategic plan for data management that prioritizes long-term improvements in the monitoring network considering risk-based decision-making, and that identifies adequate resources for long-term maintenance and accessibility to water management information.

10.6 Improve drought planning and preparation by:

- 10.6.1 Developing drought metrics (indicators) with the goal of providing early detection and determination of drought severity.
- 10.6.2 Developing and improving monitoring of key indicators of regional water vulnerabilities.
- 10.6.3 Improving the system of stream gauging for the purpose of managing water resources in low-flow conditions and improving the accuracy of seasonal runoff and water supply forecasts.
- 10.6.4 Improving groundwater monitoring and assessment by providing technical and financial support to develop real-time monitoring of groundwater data.
- 10.6.5 Expanding the existing surface water and groundwater monitoring networks, where needed.

10.7 Develop a strategy and implementation plan for measuring and reporting water use and water quality data. The accurate measurement, timely publication, and broad distribution of water use and water quality will facilitate better water planning and management, especially in the context of managing aquifers more sustainably, and are necessary for the development of more accurate hydrologic budgets.

10.8 Sponsor science-based, watershed adaptation research and pilot projects to address water management and ecosystem needs, improve aquatic species and habitat monitoring, and develop an accessible and standardized database for reporting watershed and headwater conditions.

To improve data and information exchange, DWR should take the following actions, in coordination with the SWRCB, CDPH, Public Utilities Commission, Energy Commission, USBR, California Urban Water Conservation Council, California Council for Science and Technology, IRWM Regional Water Management Groups, and other agencies, organizations, tribes, and stakeholders.

10.9 Develop the Water Planning Information Exchange (Water PIE) to facilitate sharing data and networking existing databases among federal, State, tribal, regional, and local agencies and governments; nonprofit organizations; and citizen monitoring efforts. The Water PIE data framework will help improve analytical capabilities and develop timely surveys of statewide land use, water use, and estimates of future implementation of resource management strategies. Potential beneficiaries of Water PIE include urban water management plans, agricultural water management plans, groundwater management plans, IRWM plans, and the CWP.

10.10 Support establishment of an open, organized, and documented quantitative representation of the State's intertied water system to serve as a common and standardized data platform for model development and analysis by federal, State, tribal, regional, and local water planners.

10.11 Implement Shared Vision Planning or similar collaborative modeling approaches to integrate tried-and-true planning principles, systems modeling, and collaboration into a practical forum for making more informed and durable water resources management decisions.

PLACEHOLDER Table 8-10 Related Actions and Performance Measures for Objective 10 (Improve Data, Analysis, and Decision-Support Tools)

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Objective 11 — Invest in Water Technology and Science

Identify, develop, and prioritize research needs for new technologies; advance development and implementation of existing and emerging tools, technologies and innovations; and encourage partnerships in water-related technology and science to promote more efficient, effective, and sustainable water resources management and a better scientific understanding of California's water-related systems.

Federal, State, tribal, regional, and local governments; non-governmental organizations; California research and academic institutions; and private applied research and innovation initiatives should work together to identify, prioritize, and fund applied research projects. Specifically, research projects would involve the commercialization of new water technologies and advancement of cost and energy-efficient emerging tools and technologies. Such collaboration among the abovementioned organizations and entities will also encourage fuller implementation of existing, effective technologies — in support of more integrated, aligned, and sustainable water management.

The objective and related actions come out of an effort of the CWP Water Technology Caucus and the California Council for Science and Technology (CCST). The CWP Water Technology Caucus is a statewide topic-based workgroup designed to support development of Update 2013 through in-depth discussions and deliberations of innovation, applied research and development, and technology. The Water Technology Caucus helped identify and expand information associated with statewide and regional opportunities and challenges for implementing new water technologies in California. The statewide and regional information helps inform technology planning efforts, pilot projects, and investments by federal, State, tribal, regional, and local governments; non-governmental organizations; and private applied research and innovation initiatives. This collaborative process can lead to the commercialization of new water technologies; an enhanced focus on California water research, information, and data needs (see also Objective 10 — Improve Data, Analysis, and Decision-Support Tools); and a better scientific understanding of California's water-related systems. The Water Technology Caucus works closely with California research and academic institutions working on water technology initiatives to develop the water technology-related actions for Update 2013.

Innovations in science and technology have long been recognized as a key driving force of economic growth, especially in high-technology economies such as California's. However, State government has limited resources and is seeking ways to most effectively encourage and sustain an environment where innovation can flourish. In early 2012, the CCST initiated the California's Water Future Project to identify and describe technology innovation and/or systems approaches currently under development or available for application. These innovations can be used in California, on a statewide, regional, local, or project basis, for immediate adoption and within the next five to 10 years to enhance California's IWM; efficient water use; effective groundwater management; and environmental restoration and sustainable management, including optimization of river systems for state-determined goals. The project goals were to make specific recommendations regarding:

- Technologies that appear to have the most promise for California over the next 5-10 years.
- Policy and process changes needed to commercialize and more broadly deploy identified innovation.

The target audience for the California's Water Future Project is anyone in the science and technology community with an interest in water; DWR; and federal, State, and local policy-makers. Additional information on CCST's Water Future Project is available in Volume 4, *Reference Guide*.

State government will continue to work with California research and academic institutions — such as the California Academy of Sciences, California Council on Science and Technology, the University of California, California State University, and other universities and colleges — to identify and prioritize applied research projects leading to the commercialization of new water technologies and better scientific understanding of California's water-related systems.

Related Actions

11.1 Advance new water technology to improve Data Management and Modeling by implementing the following:

11.1.1 Development and implementation of a standardized protocol for water use and quality measurement and reporting strategy and implementation plan necessary for sustainable California water planning and management.

11.1.2 Development and compliance of protocol for distributed data storage and use policy with all database managers and with all data linked to the appropriate metadata.

11.1.3 Development of effective interactive database portals, such as Water PIE (DWR) and HOBBES (UC Davis), should continue with a high priority.

11.1.4 Support for the maintenance of current modeling protocols and standards that provide guidance to water stakeholders and decision-makers, and their technical staff, as models are developed and used to solve California's water and environmental problems. The California Water and Modeling Forum should continue to have a major role in this important effort.

11.2 Advance new water technology to improve both in situ (on-site) and remote sensing for data acquisition by implementing the following:

11.2.1 Developing closer coordination between in situ sensing and remote sensing.

11.2.2 Supporting technology fairs and/or other effective venues for presenting licensing opportunities for technology developed by the National Laboratories and other government agencies with technology development focused on the water environment.

11.2.3 Increasing the deployment of land based radar where local topographic features prevent adequate weather forecasting.

In situ (on-site) Data Acquisition: Priorities for in situ data acquisition technology research include:

11.2.4 Development is required of protocol for data acquisition and compatibility of associated equipment.

11.2.5 Development of cost effective sensors.

Remote Sensing Data Acquisition: Priorities for remote-sensing data acquisition technology research include:

11.2.6 Development and use of remote sensors capable of accurately determining qualitatively quantitatively more chemical and physical parameters for fresh water bodies.

11.2.7 Development of inexpensive, local remote sensors to replace or complement in situ sensors for the purpose of providing monitoring capability that is less susceptible to vandalism.

11.2.8 Continue the development of utilizing airborne drones to provide targeted data to complement satellite data (e.g., snowpack, reservoir level).

11.2.9 Increased partnerships between the National Aeronautics and Space Administration (NASA), state and private sectors to enhance existing resources while realizing savings by reducing duplicative monitoring and/or increasing required data acquisition opportunities.

11.3 Advance new water technology to improve efficiencies for the Water-Energy Nexus by implementing the following:

11.3.1 Smart grid technologies for water and energy conservation and management.

11.3.2 Use of renewable energy for water treatment and transport processes.

11.3.3 Developing anaerobic processes to facilitate energy recovery from supply and wastewater organic residuals.

11.3.4 Improve technology for residential use of point-of-use (POU) and point-of-entry (POE) treatment.

11.4 Advance new water technology to improve Membrane Water Treatment by implementing the following:

11.4.1 Further development of more robust, cost- and energy-efficient, general-purpose membranes for use in seawater desalination, brackish water treatment, and wastewater and water reuse applications, with removal of contaminants not now efficiently removed (e.g., boron, contaminants of emerging concern), and recovery of beneficial salts and minerals for reuse.

11.4.2 Further development of energy recovery technologies, particularly for high-pressure reverse osmosis units (e.g., operational pressure as high as 1,180 pounds per square inch gauge [psig], or 8 megapascals [MPa]) but also with application to separation technologies operating at lower pressures.

11.4.3 Further development of smart control technology that ensures more dependable operation of treatment facilities, including remotely located treatment facilities (distributed treatment).

11.4.4 Development of membrane separation technologies capable of reliable and economic deployment to remotely located communities (distributed treatment).

11.4.5 Significantly broadened deployment of brine disposal technologies for disposal into marine environments already used outside of California.

11.5 Advance new water technology to improve Biological Water Treatment by implementing the following:

11.5.1 Development and deployment of technologies focused on wastewater cleanup for recycling process and wastewater, including use as drinking water (i.e., drinking water, irrigation, process water, groundwater recharge).

11.5.2 Development of technologies to reduce chemical use and increase energy efficiency, such as engineered wetlands for wastewater treatment and ecosystem enhancement.

11.5.3 Technology development to support the increased use of affordable distributed biological water and wastewater treatment systems for small, rural communities.

11.5.4 Development of better control technology for biological treatment, similar to the earlier stated research priority for membrane separation technology.

11.6 Advance new water technology to improve watershed management by implementing the following:

11.6.1 Software development that leads to more effective combining and utilizing of applicable models, in recognition of the need for the effective management of the multiple factors affecting watersheds, including climate change impacts.

11.6.2 Improved data collection for surface-water and groundwater basin descriptive parameters, including water runoff and storage as a function of time throughout the basin by more extensive use of satellite monitoring, where applicable, and partnering with other agencies (i.e., DWR, SWRCB, U.S. Geological Survey, and others) where possible.

11.6.3 Expanded use of flood plains and other sites having good recharge potential for groundwater recharge.

11.7 Advance new water technology to improve Agricultural Water Use Efficiency by implementing the following:

11.7.1 Increase the adoption of field level water measurement (flow and total) and soil moisture-sensing technologies to increase water management accuracy and data.

11.7.2 Promote the use of high-efficiency water irrigation systems, provide necessary maintenance, and utilize proper irrigation scheduling methods to optimize water- and energy-use efficiency.

11.7.3 Increased adoption of one or more technologies for irrigation scheduling (e.g., including remote sensing, weather based, and/or crop/soil-based technologies).

11.7.4 Development of cost-effective irrigation system performance information monitoring platforms for evaluating irrigation performance criteria in real time.

11.7.5 Increase the number of water districts that provide water deliveries on a demand basis to maximize on-farm water use efficiency.

11.7.6 Use agricultural water and land whenever appropriate to provide local environmental benefits (e.g., flooded rice ground to provide seasonal wetlands for migratory birds and reproduction habitat for fish and aquatic life).

11.7.7 Identification of shared-use opportunities for water supplies (e.g., water exchanges between agricultural and urban users).

11.8 Advance new water technology to improve Urban Water Use Efficiency by implementing the following:

11.8.1 Metering infrastructure to promote more efficient water use (e.g., individual apartments, remote access to water use data).

11.8.2 Continued advancement of plumbing code and efficiency standards for low-flow appliances and fixtures, such as toilets and clothes and dish washers in the home and low-flow cleaning technologies in the commercial and industrial sectors.

11.8.3 Increased use of American Water Works Association water-loss software and verification program.

11.8.4 Greater use of low-water-use landscaping.

PLACEHOLDER Table 8-11 Related Actions and Performance Measures for Objective 11 (Invest in Water Technology and Science)

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Objective 12 — Improve Tribal/State Relations and Natural Resources Management

Develop relationships with California Native American Tribes that acknowledges and respects their inherent rights to exercise sovereign authority and ensure that they are incorporated into planning and water resources decision-making processes in a manner that is consistent with their sovereign status.

Update 2005 recommended that DWR and other State agencies invite, encourage, and assist the participation of tribal government representatives in statewide, regional, and local water-planning processes and to access State funding for water projects. As part of Update 2009, the Tribal Communication Committee prepared the comprehensive *Tribal Communication Plan* (Tribal Communication Committee 2008) for the CWP (as presented in Update 2009, Volume 4, *Reference Guide*). The 10 *Tribal Communication Plan* objectives were included in the Update 2009 related actions. (Refer to the *Tribal Communication Plan* for a definition of California Native American Tribes.)

For Update 2013, a Tribal Advisory Committee was convened, and a Tribal Water Summit for the update was held in April 2013. The summit included the development of the *Guiding Principles and Statement of Goals for Implementation*. This objective incorporates the related actions from Update 2009, the 2013

Tribal Water Summit *Guiding Principles and Statement of Goals for Implementation*, and the 2013 Tribal Water Summit implementation objectives.

Related Actions

12.1 The State, in collaboration with California Native American Tribes, should, where it is within the State's authority, address tribal water rights, including tribal water rights dating back to time immemorial; federally reserved water rights; jurisdiction; and trust responsibilities, including individual allotments, by:

12.1.1 Convening a task force to articulate a consistent State policy and protocol that recognizes tribal water rights in all aspects of water planning, including supply, timing, flows, quality, and quantity.

12.1.2 Bureau of Indian Affairs and SWRCB, in collaboration with California Native American Tribes, developing joint training on State, federal, and tribal water rights, including trust responsibilities, the implications for different tribal trust lands (reservations, rancherias, and individual allotments) and jurisdiction.

12.2 State government should write legislation and contracts in a way that enables California Native American Tribes to be a lead agency and directly receive and manage state funding (as fiscal agent or otherwise) for water planning and management.

12.3 DFW and California Native American Tribes will develop and initiate pilot projects to develop resource management plans, characterized by the integration of Traditional/Tribal Ecological Knowledge and western science. This will include identifying existing examples of partnerships and launching pilot projects.

12.4 State agencies should use Tribal Ecological Knowledge to inform their work and decisions, including establishing baseline resource conditions and developing options to share information in ways that protect specific details about cultural resources.

12.5 State agencies, in collaboration with California Native American Tribes, should develop and conduct trainings for agencies on tribal sovereignty, trust responsibilities, cultural awareness/sensitivity, and Traditional/Tribal Ecological Knowledge by developing a curriculum with a tribal working group, establishing consistent training protocols for all agencies, and initiating trainings.

12.6 State and federal agencies, in coordination with California Native American Tribes, should identify, coordinate, and provide technical training for California Native American Tribes, to increase technical capacity — including, but not limited to, basic training modules (e.g., Basic Inspector Academy, GIS, small water systems operations, such advanced technologies as LiDAR and satellite imagery) — and establish criteria and protocols for ensuring training vendors preferred by California Native American Tribes are utilized.

12.7 State agencies should engage tribal communities in compiling and developing climate change adaptation and resilience strategies that will mitigate climate impacts to their people, waterways, cultural resources, or lands.

12.8 The SWRCB should, in collaboration with California Native American Tribes, propose a statewide beneficial use definition that respects and acknowledges cultural and subsistence use of water and this definition should be adopted in statewide water quality control plans.

12.9 State agencies and California Native American Tribes should utilize and implement communication strategies, protocols, and procedures that are developed and/or implemented by California Native American Tribes, including but not limited to the Tribal Communication Plan, U.N. Declaration on the Rights of Indigenous Peoples, 2013 Tribal Water Summit Guiding Principles and Goals, and tribal memoranda of understanding.

12.10 State agencies, in collaboration with California Native American Tribes, should enhance tribal outreach, communication, coordination, collaboration, and the work of tribal liaisons by identifying and implementing strategies to strengthen tribal involvement in State outreach and engagement approaches; clarify tribal liaison roles and responsibilities; and identify options for creating a statewide network of tribal liaisons to address multiple aspects of tribal concerns (e.g., legal, policy, and local conditions).

12.11 State agencies should engage in meaningful consultation by encouraging and moving toward earlier involvement by California Native American Tribes (at the design/planning stages); initiating consultation for programmatic decisions as well as project-level decisions; understanding individual California Native American Tribes' protocol for consultation, adjusting timelines to allow adequate time to bring items before tribal councils and leaders; conducting meetings on tribal lands; and documenting tribal comments.

PLACEHOLDER Table 8-12 Related Actions and Performance Measures for Objective 12 (Improve Tribal/State Relations and Natural Resources Management)

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Objective 13 — Ensure Equitable Distribution of Benefits

Increase the voice of small and disadvantaged communities in State processes and programs to achieve fair and equitable distribution of benefits. Provide access to safe drinking water and wastewater treatment for all California communities and ensure programs and policies address the most critical public health threats in disadvantaged communities.

Update 2005 recommended that DWR and other State government departments and agencies should invite, encourage, and assist representatives from disadvantaged communities and vulnerable populations, and the local agencies and private utilities serving them, to participate in statewide, regional, and local water planning processes and to get equal access to State funding for water projects. State policy establishes social equity and environmental justice (EJ) as State planning priorities to ensure the fair treatment of people of all races, cultures, and income, in particular those having experienced significant disproportionate adverse health and environmental impacts.

To enforce the fair treatment clause, four key requirements must be met:

- Disadvantaged and disproportionately affected communities must be identified and engaged.

- The water-related needs of these communities must be identified, and potential solutions developed and funded.
- The impact of water management decisions on these communities must be considered and mitigated.
- All State programs must be evaluated to document progress.

A number of efforts to better address EJ and economically disadvantaged community concerns have advanced since Update 2005.

In 2008, the California Public Resources Code, Section 75005(g), was added to define a "disadvantaged community" (DAC) as a community with a median household income of less than 80 percent of the statewide average. A "severely disadvantaged community" is one with a median household income of less than 60 percent of the statewide average.

The current DWR guidelines for IRWM funding, allocated through voter-approved Propositions 84 and 1E, identify statewide priorities among which is a goal to "ensure equitable distribution of benefits." For implementation grants, DWR has prioritized proposals that:

- Increase the participation of small communities and DACs in the IRWM process.
- Develop multi-benefit projects with consideration given to affected DACs and vulnerable populations.
- Address safe drinking water and wastewater treatment needs of DACs.

In 2012, California Water Code Section 106.3 was added to declare that the established policy of the State recognizes every human being as having the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. All relevant State agencies, including DWR, SWRCB, and CDPH, are required to consider this State policy when revising, adopting, or establishing policies, regulations, and grant criteria when those policies, regulations, and criteria are pertinent to the uses of water described in this section.

Other initiatives have also moved forward, including:

- Final Report To The Governor's Office August 20, 2012, Governor's Drinking Water Stakeholder Group, Agreements and Legislative Recommendations.
- CDPH's Small Water System Program Plan.
- SWRCB's Small Community Wastewater Grant Program.

Even with all these efforts, one of the challenges that State agencies and water systems express about trying to address the needs of DACs is simply answering these two questions:"Who are they?" and "Where are they?"

The CWP can provide guidance and tools for identifying disadvantaged and EJ communities. It is vitally important to identify community needs. Most water, wastewater, and flood projects are not developed for these communities; and yet, they can affect them. It is important to understand that even projects that convey "general" public benefit may not proportionally benefit EJ communities or DACs. For example, conservation programs that depend heavily on toilet and washing machine rebates will have greater penetration in middle- and upper-class communities than they will in poorer communities that purchase

less frequently and cannot afford the initial outlay for the fixture. These problems are resolved by taking community concerns into account during the project design phase to ensure equitable benefits.

Another concept that plays into the measurement of impacts is the cumulative effects of a project. It is understandable that water agencies would look at other water projects in determining the impact of their project, but that practice ignores the reality of these communities. That is, these communities endure so many challenges on a daily basis, that one more, from any source, only adds to what may already be an excessive burden.

Finally, planners should develop multi-benefit projects with consideration given to affected DACs and vulnerable populations. This is particularly true in already affected communities. For example, if an agency is developing a flood management project, it would be prudent to look at developing the project in ways that will provide flood protection, as well as open space, wildlife habitat, and/or recreational opportunities, to DACs and vulnerable populations.

Related Actions

13.1 Ensure implementation of the policy goals of California Water Code Section 106.3 (AB 685), which state that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes.

- 13.1.1 State government should ensure that the goals established by the policy — safe, clean, affordable, and accessible water adequate for domestic uses — are reflected in agency planning.
- 13.1.2 State government should give preference to policies that advance the policy and refrain from taking actions that adversely affect the human right to water.
- 13.1.3 State government should report on actions undertaken to promote the policy and make information relevant to the human right to water available to the public.
- 13.1.4 State government should foster meaningful opportunities for public participation in agency decision-making by California's diverse population.
- 13.1.5 State government should facilitate access by rural and urban DACs to state funds for water infrastructure improvements.
- 13.1.6 State government should ensure the effectiveness of accountability mechanisms protecting access to clean and affordable water.

13.2 Increase EJ and DAC participation in planning.

- 13.2.1 DWR and the other CWP Steering Committee members should incorporate EJ issues of precautionary applications, cumulative health impact reductions, public participation, community capacity building and communication, and meaningful participation in current and future CWP Update processes and other programs.
- 13.2.2 DWR should require that grant and loan recipients conduct outreach to DACs and vulnerable populations and their advocates to seek their participation in water planning programs, including the CWP update, and IRWM plans and other local water planning processes.

13.3 Develop CWP goals and objectives, in coordination with IRWM partnerships, to resolve water-related public health issues in DACs.

13.3.1 California tribes, both recognized and unrecognized, should provide goals and objectives to protect tribal uses of water, especially those that affect the health of tribal members (see Objective 12).

13.3.2 DWR, DFW, and other State agencies should develop statewide goals and objectives for the provision of safe fish for communities that rely on fish as part of their subsistence diet.

13.3.3 DWR, in consultation with other State agencies, including the Department of Conservation, tribes, and community groups, should develop goals and objectives to restore and protect watersheds by making use of existing community-based watershed councils and groups under-utilized in maintaining and restoring California's water resources.

13.4 Support financial mechanisms to facilitate improved wastewater removal systems.

13.4.1 The SWRCB and DWR should establish incentives to support conversion to municipal or other upgraded wastewater removal systems.

13.4.2 The SWRCB and DWR should establish a process to create introductory, then graduated, wastewater rates to allow a period of adjustment for new fees.

13.5 Increase disadvantaged community access to funding.

13.5.1 The SWRCB, CDPH, DWR, and other State agencies should work with DACs and vulnerable populations and their advocates to review State government funding programs and develop guidelines that make funding programs equally accessible to DACs and EJ communities.

13.5.2 The SWRCB, CDPH, DWR, and other State agencies should work with DACs and vulnerable populations and their advocates to develop a technical assistance program to provide resources, expertise, and information to DACs and EJ communities to enable them to actively and equally participate in planning processes and access funding sources.

13.6 Provide incentives for the consolidation, acquisition, or improved management of small water systems.

13.6.1 CDPH should establish incentives to encourage consolidation with the "smalls" by the larger system. There are valid concerns on the part of the larger system when approached with the idea of acquiring small, dysfunctional systems.

13.6.2 CDPH should conduct outreach and education for customers and shareholders to a proposed consolidation to ensure informed decision-making.

13.6.3 CDPH should support efforts to improve licensing and training options for small water system operators.

13.7 CDPH should implement its Small Water System Program Plan to assist small water systems (especially those serving DACs) that are unable to provide water that meets primary drinking water standards.

13.7.1 CDPH should share the Small Water System Program Plan with relevant federal, State, and local agencies, as well as stakeholders, to foster additional opportunities for funding, coordinate construction projects in communities, and assist in local and regional planning efforts.

13.7.2 CDPH should utilize GIS tools to identify large water systems in close proximity to targeted small water systems, and conduct targeted outreach to these large water systems to encourage them to consolidate the small systems into their service area.

13.7.3 CDPH should work with stakeholders to identify obstacles to consolidation (including financial, legal, and local issues) and develop possible actions to address these obstacles.

13.7.4 CDPH should participate in statewide planning efforts to address the water infrastructure needs of small water systems. CDPH should seek input from other states and the federal government on innovative, successful efforts to address the needs of small water systems, and should share its results on implementation of it Small Water System Program Plan.

13.8 Collect and maintain data on EJ communities and DACs.

13.8.1 The SWRCB, CDPH, DWR, and other State and federal agencies should coordinate their review of current monitoring and regulatory programs to identify and address gaps in available data and monitoring programs that affect DACs and vulnerable populations.

PLACEHOLDER Table 8-13 Related Actions and Performance Measures for Objective 13 (Ensure Equitable Distribution of Benefits)

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Objective 14 — Protect and Enhance Public Access to the State's Waterways, Lakes, and Beaches

Protect and enhance public access to the state's waterways, lakes, and beaches for cultural, recreational, and economic purposes consistent with maintaining healthy ecosystems.

Public access to our natural waterways, lakes, and beaches has been embedded in the California's Constitution since the founding of the state. Activities such as boating, fishing, exploring the beach, and swimming are an important part of our heritage, our culture, our identity, and our economy. California's Legislature has repeatedly acknowledged the importance of developing the state's water resources to provide more public access and more recreational opportunities through our water supply, watershed protection, and flood management projects. The rich variety of recreation opportunities created by the state's natural, managed, and constructed water bodies supports public health and welfare, sustains healthy businesses and communities, and promotes wise use of our abundant natural resources. Critical to maintaining California's heritage is the need to protect and enhance public access to the state's waterways, lakes, and beaches for the foreseeable future. Doing so will require the development and implementation of related actions that guide decision-makers tasked with managing the state's waterways, lakes, and beaches.

The related actions below are a compilation of guidance from strategic planning documents for agencies as diverse as California State Parks, the Sierra Nevada Conservancy, and the Delta Stewardship Council. This is a new objective for the CWP, so it is expected that the related actions and performance measures will be more comprehensive as more agencies with public access responsibilities participate in the next CWP update. More information on this subject is available in Volume 3, Chapter 31, "Water-Dependent Recreation."

Related Actions

14.1 Respect and Protect. State government will respect and vigorously protect waterways, lakes, and beaches for beneficial public use.

14.1.1 The State will support the regulatory responsibilities of the California Coastal Commission (beach access), Bay Conservation and Development Commission (San Francisco estuary access), SWRCB (water quality and supply), State Lands Commission (navigation), DFW (inland fisheries), and others that protect beneficial uses such as fishing, boating, and other public access rights.

14.1.2 State conservancies — such as the Sacramento-San Joaquin Delta Conservancy, Tahoe Conservancy, and Sierra Nevada Conservancy — should acquire and/or protect sensitive landscapes, such as key watershed lands and wetlands, flood conveyance zones, riparian woodlands, and vernal pools with important natural resource and scenic values, and significant beneficial public uses. The conservancies, including the State Coastal Conservancy, should protect and/or acquire land to maintain public access to waterways, lakes, and beaches.

14.1.3 The State should protect recreational resource values threatened by the effects of climate change by using strategies of reinforcement, adaption, and/or retreat as feasible.

14.1.4 As water resources are developed, flood control facilities are envisioned, and sea level rise is accommodated, State government, including, but not limited to, DWR and the California Department of Transportation, will protect and minimize impacts on cultural and recreational uses.

14.2 Research and Planning. State government should engage in statewide research and planning to meet California's unmet and growing demand for safe public access to waterways, lakes, and beaches.

14.2.1 State government, such as the California Department of Parks and Recreation (California State Parks) and DWR, should document and regularly report on the water-dependent recreational trends of California's growing population, the public health and economic benefits of recreational activities, and threats to the tourism and lifestyle benefits of California's water-dependent recreational infrastructure.

14.2.2 State government, such as DWR, will report on the feasibility of incorporating public access facilities into each water resources development and flood management infrastructure project, watershed protection efforts, and environmental restoration projects funded by the State and federal governments. Consider multi-benefit projects that increase waterfront accessibility, create more inclusive access opportunities, support commercial and recreational fishing, encourage economic revitalization, promote excellence and innovation in urban design, enhance cultural and historic resources, and are resilient to a changing climate. Plan to include, where feasible, levee crown widening in levee improvement projects to accommodate multi-purpose recreational trails and bike lanes.

14.2.3 State conservancies, such as the State Coastal Conservancy, Bay Conservation and Development Commission, and California State Parks should collaborate with local agencies to systematically plan to reinforce, adapt, and/or relocate recreational opportunities threatened by sea level rise and transportation or wastewater infrastructure adaptations.

14.2.4 California State Parks should lead comprehensive recreation resource planning of the state's inland waterways, engaging the public, recreation providers, policy-makers, advocacy groups, and public officials. Consider facilities that provide opportunities for the top outdoor recreation activities identified in the *Survey of Public Opinions and Attitudes on Outdoor Recreation in California*, especially those benefiting disadvantaged communities.

14.3 Enhance. All State agencies with public access responsibilities should, in concert with local agencies, enhance safe public access by providing water-dependent recreational facilities and programs that support beneficial uses, and/or improve the social and economic sustainability of federally funded and State- funded infrastructure, watershed protection, and environmental restoration projects.

14.3.1 State government, including DWR, California State Parks, and all state conservancies, should facilitate and/or construct water-dependent recreation projects that spur the economic development of disadvantaged communities, provide environmental stewardship benefits, enhance natural resource values, protect or relocate existing recreational opportunities, and meet the regional demand for healthy outdoor recreation opportunities for all Californians, especially children.

14.3.2 The Delta Protection Commission and Sacramento-San Joaquin Delta Conservancy should encourage partnerships between other State and local agencies, local landowners, and business people to expand water-dependent recreation and tourism in the Delta and Suisun Marsh, while minimizing adverse impacts on non-recreational landowners. Use California State Parks' *Recreation Proposal for the Sacramento-San Joaquin Delta and Suisun Marsh* and the Delta Protection Commission's *Economic Sustainability Plan* as guides.

14.3.3 As California's population increases, State government, such as DWR, DFW, and California State Parks, should increase water-dependent recreation opportunities on existing public land, where feasible. State government should also pursue acquisition opportunities that provide open space and public access to water features, such as the ocean, lakes, rivers, streams, and creeks, where demand exceeds supply.

14.3.4 State agencies should prioritize construction of water-dependent recreation facilities identified in IRWM plans; active-use facilities, such as multi-use trails for equestrians, hikers, walkers, and bikers, which improve public health; boating trails; facilities that mitigate or adapt to climate change; facilities that increase the safety of anglers, swimmers, and boaters; and facilities that provide environmental education, such as water conservation and water quality information.

14.4 Promote. All State agencies with waterfront public access responsibilities should cooperate with local agencies, businesses, and the general public to promote healthy outdoor recreation, resource-based tourism, and environmental stewardship to benefit public health and welfare, improve the environment, and grow the economy commensurate with protection of public property rights.

14.4.1 All state conservancies, DWR, DFW, and California State Parks should improve outreach and education to children and in disadvantaged communities that will improve public health, support California's outdoor lifestyle, and promote wise use of water resources.

PLACEHOLDER Table 8-14 Related Actions and Performance Measures for Objective 14 (Protect and Enhance Public Access to the State's Waterways, Lakes, and Beaches)

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Objective 15 — Strengthen Alignment of Land Use Planning and Integrated Water Management

Strengthen the alignment of goals, policies, and programs for improving local land-use planning and IWM.

The way in which we use land has a direct relationship to water supply, water quality, flood management and hazard mitigation, and other water topics. For example, compact urban development patterns in urban areas can reduce water demand, improve water quality, limit the amount of development in floodplains, reduce costs for water-related infrastructure, and reduce GHGs. Also, directing development away from agricultural lands allows for multi-objective management of those lands, which includes agricultural preservation, floodplain management, water quality improvement, and habitat conservation.

Cities and counties have primary responsibility for land use planning and regulation in California. Land use planners consider water throughout the local land-use planning process, and water is a critical element in adopting sustainable land-use planning policies. Stronger collaboration between land use planners and water planners can promote more sustainable land-use patterns and greater integration of IWM into local land-use plans. It can also lead to IRWM plans that more accurately reflect and support local government land use and growth policies.

State government has an important role to play in strengthening the alignment of land use and IWM. Existing programs include SB 610 and SB 221 of 2001, which establish processes for coordinating land use and water supply planning. Also, State flood legislation enacted in 2007 requires local general plans to include specific policies to reduce flood risk. Established in 2008, the Strategic Growth Council awards grants for sustainable communities planning, which can integrate IWM at both the regional and local levels.

By enhancing its role, State government can facilitate stronger collaboration between land use planners and water planners. It can provide additional regulatory and financial incentives for local and regional plans that integrate IWM through encouraging compact, sustainable development patterns. Finally, State government can provide technical tools and data resources to make it easier for local governments to prepare land use plans that integrate IWM.

Related Actions

15.1 State Government should provide additional regulatory and financial incentives to developers and local governments to plan and build using compact and sustainable development patterns.
- 15.1.1 Regulatory incentives include further streamlining of CEQA review for infill projects and further reductions in brownfields liability for innocent purchasers.
- 15.1.2 Financial incentives include developing criteria for state grant and funding programs that incentivize compact and sustainable development.

15.2 The OPR should provide guidance and financial incentives for integration of IWM issues in general plan updates and Sustainable Communities Strategy (SCS), including both substantive and planning process guidance.

15.3 Local governments should integrate relevant IWM issues into their general plan updates. IWM issues relevant to land use planning include water supply, water quality, flood risk management, and climate policies (mitigation and adaptation).

15.4 The Strategic Growth Council should provide guidance and financial incentives for regional planning agency integration of relevant IWM issues into SCSs, transportation blueprint plans, and other regional plans.

15.5 Regional planning agencies should integrate IWM issues into their SCSs, transportation blueprint plans, and other regional plans.

15.6 Local governments should ensure that urban water management plans inform and reflect IRWM plan preparation and implementation, to further IWM integration in local land-use planning that promotes compact and sustainable development.

15.7 Local governments should implement specific land-use planning and regulatory measures to reduce flood risks, consistent with IWM principles and BMPs for land use planning.

15.7.1 Measures include preservation of existing floodplains, aquifer recharge areas, and alluvial fans; restoration of natural floodplain functions; and design measures to increase post-flood resiliency. See Objective 6, Related Action 6.8 regarding the process for developing land use planning BMPs.

15.8 DWR should assist local governments and developers with implementing the *Integrating Water and Land Management: A Suburban Case Study and User-Friendly, Locally Adaptable Tool,* which calculates life-cycle water infrastructure costs for different development patterns.

15.9 State government should evaluate the effectiveness of the 2007 flood management legislation in achieving coordination of land use planning, flood planning, and natural resources. State government should recommend changes to existing laws and their implementation to increase their effectiveness as appropriate.

15.10 State government should evaluate the effectiveness of SB 610 and SB 221 in achieving coordination of land use and water supply planning. State government should and recommend changes to existing laws and their implementation to increase their effectiveness in achieving objectives, as appropriate.

15.11 State government should invest in innovation and technology for assessment of land use, water supply, and flood conditions to further integrate water management and land use.

15.11.1 The State should provide funding, technical information, and BMPs, and publicize accurate and relevant water resources information for use by local governments and developers. The State could serve as an information clearinghouse for regional water supply, water quality, flood management, and climate change vulnerability information that local governments can use in preparing general plans and evaluating development applications.

PLACEHOLDER Table 8-15 Related Actions and Performance Measures for Objective 15 (Strengthen Alignment of Land Use Planning and Integrated Water Management)

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Objective 16 — Strengthen Alignment of Government Processes and Tools

Improve, align, and transform processes and administrative tools (incentives and oversight) — at all levels of government — used for water planning, public engagement, program/project implementation, and policy- and regulation-setting to advance IWM.

As water managers move to IWM, regulatory and other requirements designed to achieve actions with a single management objective can appear to work at cross purposes. Multi-benefit projects may require complex considerations that balance needs and trade-offs. In addition, IWM project implementers often report that they must navigate what seems to be a labyrinth of laws, regulations, and permits that

sometimes leads to project delays and mounting planning and compliance costs. These impediments can ultimately create significant difficulties in meeting public safety, environmental stewardship, or economic goals. This objective seeks to establish an approach to assist in aligning activities, honor regulatory goals, and facilitate successful implementation of projects.

The need for improved government alignment is being recognized at all levels of government and in multiple planning processes. For example, the Strategic Growth Council, California Water Commission, Resource Conservation Districts, Water Plan State Agency Steering Committee, California Biodiversity Council, and IRWM Regional Water Management Groups all have stated that the following issues impede broader and better implementation of IWM projects:

- Uncoordinated and fragmented water governance and responsibilities among numerous federal, tribal, State, and local agencies and organizations.
- Patchwork of unaligned agency planning, programs, projects, policies, and regulations.
- Unintended consequences from mismatching or conflicting policies or regulations.
- Inadequate sharing of data, information, and knowledge resulting from institutional silos.
- Duplication of effort, expertise, and resources.
- Focus on single-purpose projects.
- Inadequate partnerships among federal, State, tribal, local, private, and non-profit organizations.
- Project delays and mounting planning and compliance costs.

Understandably, project planning in California is technically complex and location-appropriate because of wide variations of climates, landforms, and institutions, as well as a diverse, place-based range of cultures associated with rural, suburban, and urban communities. Project partners, such as implementers and regulatory agencies, may have different perspectives on what they hope a project or program should achieve. Those responsible for operations and maintenance may have yet another perspective. Also, State and federal agencies may have different perspectives and responsibilities regarding a project.

The need for alignment is well understood among all levels of government and stakeholders. This CWP objective of strengthening agency alignment is based on several key principles:

- Agencies will remain autonomous.
- Action will be voluntary.
- No new institutions or organizations will be created to manage alignment.
- Action will occur at multiple organizational levels.
- No single agency can solve all of a project's or program's issues by itself.

Implementing the related actions for this objective, in coordination with other CWP objectives, will help achieve the following outcomes:

- Improved communication, coordination, and collaboration.
- Aligned planning, programs, projects, policies, and regulations for water and associated watershed, land, and ecosystem management.
- Shared processes, tools, data, information, knowledge, and expertise.
- Collaborative, place-based solutions using best available science, traditional knowledge, and other sources of information.
- Watershed-scale, multi-benefit water and resource stewardship programs to solve multiple resource issues.

- More public-private partnerships to advance all aspects of IWM (planning, project implementation, financing, monitoring, maintenance, data collection and exchange, analytical methods and tools, research, technology, and science).

A primary purpose for improving communication, cooperation, collaboration, and alignment among government agencies is to expedite efficient and cost-effective implementation of resource management strategies and multi-objective projects. This includes collaboration with regulatory agencies to reduce time and avoid costs to implement IWM projects while protecting and enhancing natural resources. Achieving IWM requires that data management, planning, policy-making, and regulation occur in a very collaborative, consistent, and regionally appropriate manner.

Instead of creating new institutions or organizational structures to manage alignment, agencies are encouraged to utilize simple self-organizing principles, practices, and tools to coordinate and collaborate outside of traditional silos and hierarchical management approaches. Alignment should not alter agencies' authority or responsibility, and is achieved by agencies working together — early and often. For example, a collaboration has been established between the 42-member California Biodiversity Council (www.biodiversity.ca.gov) and the Update 2013 process to better align planning processes and more efficiently interact with federal, State, and local agencies. One result was a joint convening of the Workshop to Align Agency Conservation Plans, Policies, and Programs held in October, 2012. The outcome of this workshop led to the February 6, 2013, California Biodiversity Council Meeting in Davis, California, where the co-chairs committed to a new resolution for the Council, *Strengthening Agency Alignment for Natural Resource Conservation,* described further in Chapter 4, "Strengthening Government Alignment."

One of the related actions offers strategies for improving the alignment, effectiveness, and implementation of water regulations. It recommends agencies set regulations that focus on regionally appropriate outcomes (goals or targets — the What), establish performance measures/indicators to evaluate progress, and include an adaptive management approach as a part of compliance. The action also recommends that the regulatory agency give regional collaboratives, such as the IRWM Regional Water Management Groups or Resource Conservation Districts, an option to develop an implementation and monitoring plan that describes the resource management strategies the group will use to achieve the regulations' intended outcomes in their area of the state (the How).

Related Actions

16.1 To advance IWM, federal, State, tribal, and local government agencies should strengthen alignment among their data, plans, programs, policies, and regulations. More specifically, they should:

- 16.1.1 Collaborate to develop consistent policies for advancing IWM at a regional scale, and use a broad and diverse mix of administrative tools to implement their policies, including technical assistance and data support; financial incentives; and State funding, guidelines, and regulations.
- 16.1.2 Adopt the "Strengthening Agency Alignment for Natural Resource Conservation" resolution (April 2013) vision, goals and principles, developed with extensive input from 42 federal and State agencies, including multiple Water Plan State Agency Steering Committee members, among others.
- 16.1.3 Utilize the best practices and tools recommended in the "Strengthening Agency Alignment for Natural Resource Conservation" resolution.

16.1.4 Participate on the Biodiversity Council's Interagency Alignment Team.

16.2 State government should more effectively coordinate the work of multi-agency collaboratives, and utilize them to align and implement State water policies and promote IWM. This should include developing and maintaining a shared and easily accessible interagency inventory/repository of processes and tools for strengthening government agency alignment. Examples of multi-agency collaborative include, but are not limited to, the Strategic Growth Council, California Biodiversity Council, Delta Stewardship Council, Ocean Protection Council, Water Plan State Agency Steering Committee, Conservancies and Resource Conservation Districts, California Council on Science & Technology, and California Landscape Conservation Cooperative.

16.3 State government agencies should hire, assign, or train staff with collaboration and conflict resolution knowledge, skills, and abilities (KSA), whose primary job is to work with other federal, State, tribal, regional, and local agencies, organizations, and communities to improve interagency communication, cooperation, collaboration, and alignment.

16.3.1 California Department of Human Resources (Cal-HR) should convene an interagency working group to develop standard language describing collaboration and conflict resolution KSAs for use in duty statements where this core competency is a minimum qualification.

16.3.2 State agencies should include this standard KSA language in duty statements for staff and management classifications to promote State agency collaboration and alignment, and they should require incumbents in these classifications to complete facilitation training.

16.4 Federal and State government agencies should use a more inclusive, collaborative, and outcome-based approach for setting consistent and aligned water policies and regulations that are regionally appropriate. More specifically, they should:

16.4.1 Recognize regional and local diversity by assisting, enabling, and empowering regional water collaboratives, such as Regional Water Management Groups (IRWM) and Resource Conservation Districts, to determine *how* State water policies are implemented in their planning regions and/or watersheds.

16.4.2 Focus on intended and regionally appropriate outcomes (goals and objectives) when setting water policies, regulations, guidelines, and resource management plans for California. Agencies should establish performance measures/indicators to evaluate progress toward achieving desired outcomes, and include an adaptive management approach as a part of regulatory compliance.

16.4.3 Provide a voluntary program for regional collaboratives, such as Regional Water Management Groups (IRWM) and Resource Conservation Districts, to develop an implementation and monitoring plan that describes the resource management strategies (actions) the group will implement to achieve the regulations' intended outcomes in their planning regions and/or watersheds, as appropriate for their local conditions and resources.

16.4.4 Utilize voluntary, outcome-based and system-scale (watershed and ecosystem) approaches for regulatory and permitting processes, and engage project proponents collaboratively, earlier and more often during the process.

16.4.5 DWR and other State agencies should survey regional collaboratives, such as Regional Water Management Groups (IRWM), to determine what technical assistance they need to facilitate collaboration and support change in regulatory approaches.

16.5 The State should convene regulatory working groups, in collaboration with federal, tribal, and local governments, to improve and streamline regulatory review and permitting processes for implementing IWM projects more expeditiously. These regulatory working groups should take the following actions in collaboration with regional stakeholders, while recognizing the unique differences among California's geographical regions:

- 16.5.1 Identify critical resource needs of regulatory agencies necessary to adequately implement regulatory programs and proposed regulatory alignment actions to support IWM, including science, tools, data, policy, guidance, and agency personnel.
- 16.5.2 Maximize the use of existing mechanisms such as habitat conservation plans and natural community conservation plans.
- 16.5.3 Review and streamline permit processes to improve efficiency and reduce costs, delays, inconsistencies, and associated adverse impacts, and develop regional permitting processes for recurrent actions and operation and maintenance activities.
- 16.5.4 Develop and adopt region-specific guidance on ecosystem restoration, water quality improvement, and environmental stewardship strategies to expedite review.
- 16.5.5 Develop and adopt specific guidance to expedite emergency response and public safety projects for high-risk areas.
- 16.5.6 Evaluate and adjust regulatory staff assignments to improve regulatory review and permitting processes at a regional scale, facilitate earlier staff involvement in planning phases for complex projects, and identify resource gaps.
- 16.5.7 Compile, maintain, and utilize regional knowledge bases (data, information, and science), including information on endangered species, sensitive habitat, water quality, and other baseline information.
- 16.5.8 Develop and maintain regional environmental mitigation databases and mitigation banks to address the varying mitigation requirements among multiple regulatory programs and agencies in each region and across regions.
- 16.5.9 Develop a multi-agency permitting guidebook that includes a description of the relevant permits, permit applications, and permitting guidance for common and more routine IWM projects.

PLACEHOLDER Table 8-16 Related Actions and Performance Measures for Objective 16 (Strengthen Alignment of Government Processes and Tools)

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

Objective 17 — Improve Integrated Water Management Finance Strategy and Investments

State government uses consistent, reliable, and diverse funding mechanisms with an array of revenue sources to support statewide and regional IWM activities. State government also makes future investments in innovation and infrastructure (green and grey) based on an adaptive and regionally appropriate prioritization process.

This objective and the related actions are based on collaboration involving several State agencies, advisory committees, topic-based caucuses (particularly the Update 2013 Finance Caucus), and other CWP stakeholders who, together, developed a Finance Planning Framework (Framework), a new feature of the CWP. The Framework provides a logical structure and sequence for financial plan development. The related actions in this section were developed to respond to and leverage the challenges and

opportunities that emerged during the Update 2013 finance planning effort, as detailed in Chapter 7, "Finance Planning Framework."

The scope of the related actions is limited to IWM programs and projects directly administered by the State, as well as future State IWM loans and grants distributed as incentives to regional and local governments. These actions are intended to inform and guide State government investment and finance. They are not intended to direct regional or local finance decisions. They also are not intended to modify existing State investment frameworks for ongoing financial activitics, such as distribution of currently authorized General Obligation bonds. While the actions below include recommendations for enhancing the way the State invests in IWM, they do not include recommendations for new revenue sources. Chapter 7 and related action #7 provide a path for resolving issues and filling information gaps, which is required as a precursor to proposing new or enhanced revenues.

Continuing to use and advance the Update 2013 Framework will enable stakeholders to collectively and in context consider the issues to be addressed and the decisions to be made. The Framework discussed in Chapter 7 evolved as stakeholders worked together to create a common understanding of California's water financing picture. Using a storyboard format, the goal was to establish a financing baseline and shared meaning about the past and current situation.

The related actions, shown in Table 8-17, are intended, in part, to incorporate several aspects of the Framework in State government actions. For example, the Shared Finance Values for State Investment and Prioritization have been represented, where appropriate. These values were developed collaboratively through the Update 2013 Finance Caucus and, in addition to guiding the development of the related actions (Table 8-17), are to be used in guiding IWM decisions regarding investment of State government funds. Another overlying purpose of these related actions is to increase the certainty that investments will achieve the intended benefits, improve the return on State investment, and enhance accountability by:

- Increasing the reliability, predictability, and level of State IWM funding for statewide and regional water programs and projects.
- Providing a consistent method for allocating, awarding, and disbursing State funding for water innovation and infrastructure programs and projects.
- Using competitive incentive programs instead of funding earmarks.
- Including regional accounts to continue IRWM to increase flexibility, reflect local and regional conditions, and advance regional goals and investment priorities.
- Providing proactive planning that implements consistent rules and standards for allocating State funding.

Related Actions

17.1 **Regional and local entities should continue investing in IWM activities based on regional and local conditions, goals, priorities, and solutions.**
Reliable and effective water finance planning should continue at the regional and local levels in partnership with State government. Locally sponsored initiatives will continue to be a cost-effective approach for planning and implementing IWM innovation and infrastructure (green and grey) to provide multiple benefits to their respective jurisdictions. Regional and local investments should be augmented and amplified with federal and State public funding.

17.2 **State government should continue to provide incentives for regional IWM (IRWM) activities that achieve State goals or provide broad public benefits.**
This includes assisting regions technically and financially to implement their IRWM plans and/or help achieve State government goals and interests. State government should continue to enhance incentives for regional activities and invest in infrastructure (green and grey) that provides a public benefit *and* would not otherwise be cost effective.

17.3 **State government should improve and facilitate access to federal and State public revenue sources.**
17.3.1 State government should develop a central online resource catalog to describe different funding programs, potential IWM revenue sources, and a how-to guide explaining how to apply for funding from these programs.
17.3.2 State government should provide guidance and assistance to local agencies on how to apply for funding that includes technical and financial assistance, as well as training for regions that do not have the capacity or resources to apply for funding or manage grants.
17.3.3 State government should inventory federal funding sources and provide guidance for partnering with, or leveraging, federal funding.

17.4 **The governor and the Legislature should broaden the ability of (and create guidelines and limitations for) public agencies to partner with private agencies, entities, and organizations for IWM investments.**
New policies are required to overcome the following limitations that have restricted their use:
17.4.1 Private financing rates are generally higher due to tax effects. Local bond financing options would typically be tax exempt for the bondholder and therefore have lower interest rates.
17.4.2 The prohibition of their use for State government projects restricts public-private partnerships (P3s) to local projects.

17.5 **State government should develop a more reliable, predictable, and diverse mix of finance mechanisms and revenue sources to continue to invest in IWM innovation activities and infrastructure (green and grey) that have broad public benefits, including, but not limited to, General Funds and General Obligation bonds.**
An important role of State government is to invest in innovation activities having broad public benefits that include improving State water governance, improving water planning and public engagement, investing in infrastructure (green and grey), strengthening government agency alignment, enhancing information technology (data and analytical tools), and advancing the use of water technology and science. These activities should be conducted in collaboration with the ongoing regional and local innovation activities.

Finance mechanisms used for these IWM innovation activities should:
A. Improve cost effectiveness, efficiencies, and accountability.
B. Avoid stranded costs and funding discontinuity.
C. Leverage funding across State government agencies.
D. Increase certainty of desired outcomes.
E. Enable prioritization based on shared funding values, defined principles, goals, objectives, and criteria.

17.6 **State government should reduce planning and implementation time frames and costs associated with IWM activities by clarifying, aligning, and reducing redundancies among State government agencies' policies, incentive programs, and regulations.**

17.6.1 Develop the scope and methodology and prepare a R*eturn on State Government Investment* report card through the CWP update collaborative process (5-year interval) that would track the occurrence of benefits/value derived from State government investments (and leveraged local investments) by using specific criteria and sustainability indicators.

17.6.2 Convene an interagency IWM finance alignment group that includes State planning, resource management, and regulatory agencies to identify and implement finance policies, procedures, and protocols for the enhancement of State government transparency, accountability, flexibility, and cost efficiencies. This effort would recommend ways to reduce duplication and fragmentation among State government agencies' policies, incentive programs, regulations, and budgets.

17.7 **The California Water Plan Update 2018 process will refine and advance the eight components of the Finance Planning Framework as described in the "Next Steps" section of Chapter 7, "Finance Planning Framework."**

Future work will cover each component of the Framework in the following ways:

A. **IWM Scope and Outcomes (Component 1)** — Revisit, clarify, and adapt the scope of IWM to changing conditions and priorities.

B. **IWM Activities (Component 2)** — Develop more specificity regarding the types of activities that State government should invest in with a clearer nexus to the types of anticipated benefits.

C. **Existing Funding (Component 3)** — Continue to compile and synthesize data that tracks historical water-related expenditures across federal, State, and local governments in California.

D. **Funding Reliability (Component 4)** — Work with the State Agency Steering Committee to identify where potential funding gaps exist between the State IWM activities described in component 2 and existing funding levels and sources. Collaborate with regional water management groups to do the same for regional and local IWM activities.

E. **State Role and Partnerships (Component 5)** — Continue to clarify and elaborate on the future role of State government to support a more specific description and estimate of future costs.

F. **Future Costs (Component 6)** — Estimate future funding demands by (a) launching IRWM, city, county, and special district data pull; and (b) work with State Agency Steering Committee to estimate the funding demand for existing and future IWM activities.

G. **Funding, Who and How (Component 7)** — Continue to collaborate with stakeholders and federal, State, tribal, and local governments to investigate and develop solutions that address the facts and findings detailed in Chapter 7, "Finance Planning Framework." This work will include, but will not be limited to:

i. Funding methods that provide a consistent financing framework for State government investments in IWM.

ii. A prioritization method and rationale for apportioning IWM investment by the categories and subcategories developed in the Update 2013 Finance Planning Framework (i.e., Innovation, Infrastructure).

iii. Methods for enhancing stewardship of State government monies at both statewide and regional scales, including strategies to improve the transparency and accountability of State fund disbursements.

iv. Achieve the improvements described in related action #5.

H. **Trade-Offs (Component 8)** — State government should develop a Decision Support System (DSS) to provide guidance and leadership for defining uncertainties of future cost, benefits, prioritization, and other tradeoffs. The DSS would inform prioritization of State government expenditures, estimation of expected IWM benefits, and methods for apportioning costs across financiers. It also includes developing a clear and consistent methodology for identifying public benefits associated with the entire range of IWM activities.

PLACEHOLDER Table 8-17 Related Actions and Performance Measures for Objective 17 (Improve Integrated Water Management Finance Strategy and Investments)

[Any draft tables, figures, and boxes that accompany this text for the public review draft are included at the end of this chapter.]

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North Coast Hydrologic Region — Table of Contents

Tables

In the Lower Klamath PA, the primary application of water is for instream environmental uses. Instream and Wild and Scenic Requirements in these rivers of account for about 10 maf to 22 maf of applied water. The urban use is about the same as in the Upper Klamath PA. Agricultural applied water equals 20 taf to 40 taf, and there are no managed wetlands in this PA. As can be expected, most of the water comes from local sources, with about 4 taf to 7 taf from groundwater and another 2 taf from reuse.

In the Coastal PA, there are still a few wild and scenic rivers, which account for most of the applied water, ranging between 3 maf to 11 maf. Instream use is next in volume with about 100 taf. Urban use is greater than either of the more northern PAs, at about 50 taf; and agricultural applied water ranges from about 55 taf to 100 taf. There are a few managed wetlands in the PA, using about a thousand ace-feet total. Most of the water supply is from local sources, with an additional 100 taf of groundwater being pumped. 30 taf are recharged back into the aquifer. There has been an increase to about 30 taf /yr in reuse during 2008 to 2010.

The Russian River PA is the most urbanized area of the North Coast Hydrologic Region. Urban applied water ranges from 80 to 94 taf. There is about 100 to 125 taf for agricultural uses and 90 to 100 taf from instream. There are no wild and scenic rivers or managed wetlands in this PA. Local supplies account for about 100 to 133 taf. Local imports have been decreasing from about 40 taf in 2006 to none in 2010. About 75 taf of groundwater supplements this, with about 15 to 25 taf recharged back into the aquifer. The instream flows are reused as part of the local supply. There is also some recycled water in this planning area, which varies from 12 taf to zero, depending on the year and other conditions.

The water portfolios are estimates of present water balances of water uses and supplies for each region in California. The water portfolios are aggregated to spatial scales unique to the California Water Plan (CWP) including the detailed analysis unit, planning area, and hydrologic region. Technical enhancements will allow this information to be evaluated at boundaries used by water purveyors and regional water management groups. A significant part of this work is to transition from the existing spreadsheet-based data storage of the water portfolio information to an enterprise data management system that will facilitate sharing of information through the Internet. Additional enhancements are under way to describe the hydrologic cycle components more fully within the water portfolios — groundwater in particular.

Project Operations

Potter Valley Project

The northern edge of Potter Valley in Lake County separates the Russian River watershed from the Eel River watershed, and in the year 1900 it was an ideal place to build a hydroelectric power plant. The Potter Valley Project was first licensed as a hydroelectric power plant in 1922 by the Federal Power Commission. The current license expires on April 14, 2022. See "Potter Valley Project FERC License" under "Water Governance" in this report. Annual flows in the Eel River are quite variable. In the relatively dry year of 2009, the peak flow in the beginning of March — as measured passing Cape Horn Dam at gage E-11 (downstream of the diversion) — for one day was over 5,000 cubic feet per second, quickly dropping to approximately 1,000 cfs and then back to the winter steady state of around 150 cfs before the next major rain. Peak winter flows can occasionally exceed 100,000 cfs. These winter storm events are captured and stored behind Scott Dam (Lake Pillsbury) for later use. Per a 2006 bathymetric survey, the maximum storage in Lake Pillsbury is 74,993 acre feet. From spring until fall, on an average

rainfall year, approximately 125 cfs is diverted through the Potter Valley Project into the Russian River watershed. (Potter Valley Irrigation District 2010).

Coyote Valley Dam and Lake Mendocino

Lake Mendocino is located on the East Fork of the Russian River (downstream of the Potter Valley Project), about 5 miles northeast of Ukiah in Mendocino County. The Coyote Dam (also known as Coyote Valley Dam) project was authorized by the Flood Control Act of 1944 and completed in 1958 for purposes of flood control, water supply, recreation, and streamflow regulation. Lake Mendocino has a flood storage capacity of 122,400 af and a total surface area of 1,822 acres. The lake has an un-gated spillway, designed for a maximum release of 35,800 cfs. Major facilities include an anadromous endangered/protected fish species egg collection and imprinting facility, visitor cultural center complex, park headquarters, sponsor run electrical power plant (hydropower), developed campgrounds (300 sites), 18 primitive boat-in/hike-in campsites, a trail system, 2 boat launch ramps, swim beach, and picnic areas. Of the park's 5,110 acres, 689 are devoted to wildlife management (U.S. Army Corps of Engineers, Coyote Valley Dam 2010).

Warm Springs Dam and Lake Sonoma

Warm Springs Dam and Lake Sonoma is located on Dry Creek in Sonoma County, approximately 14 miles above the confluence with the Russian River. The project is located on 15,966 acres of land, situated approximately 14 miles northwest of Healdsburg.

Warm Springs Dam forms Lake Sonoma, which has a design capacity of 381,000 af and drains an area of approximately 130 square miles, or about 9 percent of the total Russian River basin. Construction started in 1967 and was completed in 1982. The dam is operated and maintained by USACE. The storage space for water conservation is owned by the Sonoma County Water Agency (SCWA), while the remaining part of the project is owned by USACE, which directs flood control releases from Warm Springs Dam.

The Don Clause Fish Hatchery (Warm Springs Fish Hatchery) is located on Dry Creek at the base of Warm Springs Dam. This facility is operated by California Fish and Wildlife (DFW, formerly Department of Fish and Game) under a cooperative agreement with USACE. The hatchery was created as part of the Warm Springs Dam Project to compensate for loss of spawning and rearing habitat that was impounded and made inaccessible to anadromous fish by the dam.

SCWA owns and operates the Warm Springs Dam hydroelectric facility. The hydroelectric facility was completed in December 1988. SCWA operates the facility under a 50-year license issued by the Federal Energy Regulatory Commission (FERC) on December 18, 1984. The 3,000-kilowatt Francis turbine generators have a power rating of 2.6 megawatt (U.S. Army Corps of Engineers, Warm Springs Dam 2010).

Petaluma Aqueduct

SCWA owns and maintains a series of underground pipes that run from water collectors at Wohler Bridge near Forestville on the Russian River to northern Marin County: the Petaluma Aqueduct serves the greater Santa Rosa area, the City of Petaluma, and North Marin Water District. (See "North Marin Aqueduct" subsection below.) In 1960, Petaluma leaders signed an agreement to receive water from SCWA. The Petaluma Aqueduct was completed in December 1961. As a contractor of SCWA, Petaluma agrees to purchase water at guaranteed rates while SCWA handles the two-county distribution system.

The Petaluma Aqueduct carries more than 90 percent of the water used by the City of Petaluma, over 8 mgd. Unfortunately, the underground structure is 50 years old, has exceeded its predicted lifespan, and could rupture during an earthquake. While the Petaluma Aqueduct itself warrants monitoring and study, Petaluma is only one user on an 85-mile system of water transmission lines. With Petaluma at the south end of the system, any breakdown along the conveyance affects everyone downstream. SCWA staff recalled times over the years when the water agency had to shut down its system. By implementing conservation measures and using water held in storage, Petaluma was able to manage the temporary loss of its primary supply. During times of supply curtailment, SCWA has 2- or 3-day supply in storage along the aqueduct, and the City of Petaluma has a couple of days of storage and groundwater wells.

Typically, Petaluma's own source of municipal water only comprises 2 percent of the city's water use, but in recent drought years, local wells were run more often and made up 10 percent of the city's average water use (Petaluma 360 2012). Like most Sonoma County cities, Petaluma drew its own water from municipal wells for decades. According to DWR, the original water source for the community was the headwaters of Adobe Creek.

North Marin Aqueduct

The North Marin Aqueduct is an extension of the Petaluma Aqueduct to supply water to North Marin Water District and Marin Municipal Water District for the city of Novato and surrounding communities.

Russian River water, which provides about 80 percent of Novato's water demand, originates in Mendocino County from both the Eel River and the Russian River watershed. Eel River water flows from the Potter Valley Project diversion on the Eel River to the east fork of the Russian River. Then, downstream at a point about 10 miles upstream of Guerneville, near Forestville, water is collected by five Ranney water collectors. This water is then pumped directly into the Petaluma Aqueduct system to supply treatable water for potable use to a two-county area.

Stafford Lake, which provides approximately 20 percent of Novato's water demand, lies 4 miles west of downtown Novato and collects runoff from 8.3 square miles of watershed property located upstream at the upper tributary reaches of Novato Creek.

Since 2007, the Deer Island Recycled Water Facility near Novato, located adjacent to Highway 37, has produced treated recycled water supplies to offset Russian River water and help improve Novato's water supply for large landscape and fire protection (North Marin Water District 2013a, 2013b).

R.W. Matthews Dam, Ruth Lake and Mad River

R.W. Matthews Dam forms Ruth Lake in southern Trinity County. It impounds runoff from the upper quarter of the Mad River Basin, an area of approximately 121 square miles. The lake capacity is 48,030 af.

A portion of the water stored in Ruth Lake is released each summer and fall to satisfy the Humboldt Bay Municipal Water District's (HBMWD) downstream diversion requirements, as well as maintain minimum bypass flow requirements in the Mad River below Essex. Although the HBMWD impounds water at Ruth Lake and diverts water at Essex, the operations do not significantly affect the natural flow regime in the Mad River. (Essex is located on the Mad River 3.5 miles northeast of Arcata at an elevation of 75 feet.)

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PLACEHOLDER Figure SFB-13 San Francisco Bay Hydrologic Region Annual Groundwater Supply Trend by Type of Use (2002-2010)

Figure SFB-12 shows that between 2002 and 2010, the annual water supply for the region has fluctuated between approximately 1,380 taf in 2002 and 1,100 taf in 2010. During the same period, the annual groundwater supply has fluctuated between approximately 280 taf in 2008 to 240 taf in 2010, and provided between 18 and 23 percent of the total water supply for the region. Figure SFB-13 indicates that groundwater supply meeting urban use ranged from 60 to 85 percent of the annual groundwater extraction, while groundwater extraction meeting agricultural use ranged from 20 to 35 percent. Groundwater was not used for meeting any managed wetland use.

Recycled Water

Recycled water is used for many applications in the Bay Region, including agriculture, landscape irrigation, commercial and industrial purposes, and wetland replenishment. The region has a large potential market for recycled water — up to 240,000 acre-feet per year by 2025 as reported in the 1999 Bay Area Recycled Water Master Plan. The latest SFRWQCB report states that 58,000 af of water is recycled per year of the approximately 600,000 acre-feet of wastewater generated in the region per year.

The Bay Region has a long history of regional recycled water planning. Following years of drought in the early 1990s, and facing uncertain future water supplies, the Bay Area Clean Water Agencies (BACWA) formed a partnership with the U.S. Bureau of Reclamation (USBR) and DWR to study the feasibility of a regional approach to water recycling. The study produced the Bay Area Regional Water Recycling Program, which is the foundation of regional recycled water planning throughout the Bay Region.

The IRWM planning process has created partnerships among Bay Region agencies to further develop recycled water projects. The San Francisco Bay Area IRWMP and East Contra Costa County (ECCC) IRWMP identify several proposed recycled water projects. Collaboration between the Bay Area and the ECCC IRWM groups intends to develop joint recycled water projects.

Through IRWM, the Bay Area Regional Water Recycling Program Authorization Act was enacted in 2008. This act enabled USBR to fund eight recycled water projects under Title 16. The act also enabled the SCVWD to receive federal stimulus money for two recycled water projects. One project is to improve the South Bay Advanced Recycled Water Treatment Facility, a joint effort between SCVWD and the City of San Jose to treat wastewater byproducts. The other project is to develop short- and long-term content for SCVWD's South County Recycled Water Master Plan. Two additional recycled water treatment facilities were dedicated recently — Las Gallinas Valley Sanitary District's facility on September 25, 2012, in San Rafael; and Novato Sanitary District's facility on October 11, 2012, in Novato.

Desalinated Water

In 2003, the ACWD dedicated the first brackish water desalination facility in Northern California and expanded it in 2010 to double its production capacity to 10 million gallons per day (mgd). The Newark Desalination Facility receives its water from the Niles Cone Groundwater Basin, which contains some brackish water due to previous years of seawater intrusion. This was made possible as a result of ACWD Aquifer Reclamation Program (ARP), which has been working to eliminate seawater intrusion from the Niles Cone Groundwater Basin. Since the facility was completed, ACWD has reported improved water

Integrated Water Management Plan Summaries

Inclusion of the information contained in IRWMP's into the CWP Regional Reports has been a common suggestion by regional stakeholders at the Regional outreach meetings since the inception of the IRWM program. To this end the CWP has taken on the task of summarizing readily available Integrated Water Management Plan in a consistent format for each of the regional reports. This collection of information will not be used to determine IRWM grant eligibility. This effort is ongoing and will be included in the final CWP updates and will include up to 4 pages for each IRWMP in the regional reports.

In addition to these summaries being used in the regional reports we intend to provide all of the summary sheets in one IRWMP Summary "Atlas" as an article included in Volume 4. This atlas will, under one cover, provide an "at-a-glance" understanding of each IRWM region and highlight each region's key water management accomplishments and challenges. The atlas will showcase how the dedicated efforts of individual regional water management groups (RWMGs) have individually and cumulatively transformed water management in California.

All IRWMP's are different in how are organized and therefore finding and summarizing the content in a consistent way proved difficult. It became clear through these efforts that a process is needed to allow those with the most knowledge of the IRWMP's, those that were involved in the preparation, to have input on the summary. It is the intention that this process be initiated following release of the CWP Update 2013 and will continue to be part of the process of the update process for Update 2018. This process will also allow for continuous updating of the content of the atlas as new IRWMP's are released or existing IRWMP's are updated.

As can be seen in Figure SFB-22 there is one IRWM planning effort that is ongoing in the San Francisco Bay Hydrologic Region.

PLACEHOLDER Figure SFB-22 Integrated Regional Water Management Planning in San Francisco Bay Hydrologic Region

Placeholder Text: At the time of the Public Review Draft the collection of information out of the IRWMP's in the region has not been completed. Below are the basic types of information this effort will summarize and present in the final regional report for each IRWMP available. An opportunity will be provided to those with responsibility over the IRWMP to review these summaries before the reports are final.

Region Description: This section will provide a basic description of the IRWM region. This would include location, major watersheds within the region, status of planning activity, and the governance of the IRWM. In addition, a IRWM grant funding summary will be provided.

Key Challenges: The top five challenges identified by the IRWM would be listed in this section.

Principal Goals/Objective: The top five goals and objectives identified in the IRWMP will be listed in this section.

Major IRWM Milestones and Achievements: Major milestones (Top 5) and achievements identified in the IRWMP would be listed in this section.

Water Supply and Demand: A description (one paragraph) of the mix of water supply relied upon in the region along with the current and future water demands contained in the IRWMP will be provided in this section.

Flood Management: A short (one paragraph) description of the challenges faced by the region and any actions identified by the IRWMP will be provided in this section.

Water Quality: A general characterization of the water quality challenges (one paragraph) will be provided in this section. Any identified actions in the IRWMP will also be listed.

Groundwater Management: The extent and management of groundwater (one paragraph) as described in the IRWMP will be contained in this section.

Environmental Stewardship: Environmental stewardship efforts identified in the IRWMP will be summarized (one paragraph) in this section.

Climate Change: Vulnerabilities to climate change identified in the IRWMP will be summarized (one paragraph) in this section.

Tribal Communities: Involvement with tribal communities in the IRWM will be described (one paragraph) in this section of each IRWMP summary.

Disadvantaged Communities: A summary (one paragraph) of the discussions on disadvantaged communities contained in the IRWMP will be included in this section of each IRWMP summary.

Governance: This section will include a description (less than one paragraph) of the type of governance the IRWM is organized under.

Resource Management Strategies

Volume 3 contains detailed information on the various strategies which can be used by water managers to meet their goals and objectives. A review of the resource management strategies addressed in the available IRWMP's are summarized in Table SFB-24.

PLACEHOLDER Table SFB-24 Resource Management Strategies addressed in IRWMPs in the San Francisco Bay Hydrologic Region

Regional Resource Management Strategies

Bay Region water agencies have made significant investments since *California Water Plan Update 2009* in programs and projects that implement various resource management strategies. The 23 Bay Area Regional Priority Projects are examples of implementing resource management strategies such as Urban Runoff Management, Recycled Municipal Water, Ecosystem Restoration, Urban Water Use Efficiency, and Flood Risk Management. The projects are:

Urban Runoff Management

- San Pablo Spine & Regional Promotion of Green Infrastructure

- Hacienda Avenue "Green Street" Improvement
- Napa Valley Rainwater Harvesting

Recycled Municipal Water

- Central Contra Costa Sanitary District (CCCSD)/Concord Recycled Water Project (Phase I)
- Dublin San Ramon Service District (DSRSD) Central Dublin Recycled Water Distribution and Retrofit Project
- EBMUD East Bayshore Phase IA (I-80 Pipeline)
- MMWD Peacock Gap Recycled Water Extension
- North Bay Water Reuse Authority Program
  - Novato Sanitary District/North Marin Water District (NMWD) Novato North Service Area Project
  - Las Gallinas Valley Sanitary District (LGVSD)/NMWD Novato South Service Area Project
  - Napa Sanitation District Napa State Hospital Pipeline Construction Stage 1 Project
  - Sonoma Valley County Sanitation District (SVCSD) Recycled Water Stage 1 Project
- SFPUC Harding Park Recycled Water Project
- South Bay Water Recycling (SBWR) Industrial Expansion and Reliability

Urban Water Use Efficiency

- Regional Water Conservation Program

Ecosystem Restoration

- Sears Point Wetland and Watershed Restoration
- Bair Island Restoration
- Pond A16/17 Habitat Restoration

Flood Risk Management/Ecosystem Restoration

- Watershed Partnership Technical Assistance
- Stream Restoration with Schools and Community in Disadvantaged Communities of the North Bay
- Floodplain Mapping for the Bay Area with Disadvantaged Communities Focus
- Stormwater Improvements and Flood Reduction Strategies Pilot Project in Bay Point
- Disadvantaged Communities Richmond Shoreline and City of San Pablo Flood Project
- Pescadero Creek Watershed Disadvantaged Communities Integrated Flood Reduction and Habitat Enhancement Project
- Pescadero Creek Steelhead Smolt Outmigrant Trapping
- Stream Channel Shapes and Floodplain Restoration Guidance and Watershed Restoration in San Francisquito Creek; East Palo Alto, a Disadvantaged Community
- Steelhead and Coho: Bay Area Indicator for Restoration Success (S.F. Estuary Steelhead Monitoring Program)

Urban Runoff Management

The SFRWQCB, the San Francisco Estuary Project, municipal stormwater agencies, and other partners promote Low-Impact Development in the Bay Region. LID is a design approach that manages stormwater

COMPARISON OF STATEWIDE WATER ACTION PLANS

by: CD
date: 11/14/2013

	CA Water Action Plan (Public Review Draft, Attachment 1)	ACWA Statewide Water Action Plan (Attachment 2)	DWR CA Water Plan Update 2013 (Public Review Draft, Attachment 3)
			(From Chapter 8. Roadmap For Action)
Challenges/ Principles	Uncertain Water Supplies Water Scarcity/Drought Declining Groundwater Basins Poor Water Quality Declining Native Fish Species & Loss of Wildlife Habitat Floods Supply Disruptions	Long-term Water Supply Reliability and Improved Ecosystem Health A New Regulatory Approach The Best Available Science Water Rights and Contract Terms Bold Actions Guided By Strong Leadership Financing	Manage with Co-equal Goals of Ecosystem Health and Water Supply Reliability/Quality Manage with Broad Stakeholder-based Long-view Perspective Promote Sustainable Watershed Based Resource Management Increase System Flexibility and Resiliency Increase Regional Self-reliance Determine Values for Economic, Environmental and Social Benefits Incorporate Future Variability, Uncertainty and Risk Apply Water Rights, Including Public Trust Promote Environmental Justice Use Science, Best Data and Ecological Knowledge Transparently
Actions/ Objectives	Conservation as a California Way of Life Increase Local and Regional Self-Reliance Achieve Co-Equal Goals for the Delta Protect and Restore Important Ecosystems Manage and Prepare for Dry Periods Expand Water Storage Capacity Provide Safe Drinking Water for All Communities Improve Flood Protection Increase Operational and Regulatory Efficiency Identify Sustainable and Integrated Financing Opportunities	Storage Water Use Efficiency (Conservation) Water Supply Assurances Operational Assurances Improved Regional Self-Reliance Headwaters Water Quality Bay-Delta Conservation Plan Levee Improvement and Maintenance Emergency Preparedness and Public Safety Bay-Delta Water Quality Control Plan Water Bond Groundwater Resources Water Transfers Governmental Coordination	Strengthen Integrated Regional Water Management Planning Use and Reuse Water More Efficiently Expand Conjunctive Management of Multiple Supplies Protect and Restore Surface Water and Groundwater Quality Practice Environmental Stewardship Improve Flood Management Using an Integrated Water Management Approach Manage the Delta to Achieve the Coequal Goals for California Prepare Prevention, Response and Recovery Plans Reduce the Carbon Footprint of Water Systems and Water Uses Improve Data, Analysis and Decision-Support Tools Invest in Water Technology and Science Improve Tribal/State Relations and Natural Resources Management Ensure Equitable Distribution of Benefits Protect and Enhance Public Access to States Waterways, Lakes and Beaches Strengthen Alignment of Land Use Planning and Integrated Water Management Strengthen Alignment of Government Processes and Tools Improve Integrated Water Management Finance Strategy and Investments

ATTACHMENT 4

14

DISBURSEMENTS - DATED NOVEMBER 14, 2013

Date Prepared: 11/12/13

The following demands made against the District are listed for approval and authorization for payment in accordance with Section 31302 of the California Water Code, being a part of the California Water District Law:

Seq	Payable To	For	Amount
P/R*	Employees	Net Payroll PPE 10/31/13	$116,946.41
EFT*	US Bank	Federal & FICA Taxes PPE 10/31/13	48,953.86
EFT*	State of California	State Taxes & SDI PPE 10/31/13	8,743.21
1	Aberegg, Michael	Drafting Services: Atherton Tank As-Builts & Renovation (Balance Remaining on Contract $18,413)	715.00
2	Able Tire & Brake	Tires (12) ('99 F350 Dump Truck-$415, '10 F150-$826 & '08 F350 4x4-$1,365)	2,605.96
3	AT&T	Telephone Charges: Voice & Leased Lines	825.94
4	Bold & Polisner	August & Sept Legal Services: AEEP Caltrans B1 & B3 ($2,731), Misc ($39), MMWD Intertie Agreement ($1,710), Novato Redevelopment Claim ($186), Officers Indemnification ($1,476), RW Exp So Phs II ($74), RW South Phs 1B-Claims ($19) & Village Marin Agreement ($37)	6,272.61
5	Building Supply Center	Electrical Splice Box	11.15
6	California State Disbursement	Wage Assignment Order	1,018.50
7	CDW-Government	Trend Anti-Virus Software (60)	1,080.00
8	Cole-Parmer Instrument	Ion Probe Solution (Lab)	25.48
9	Costco Wholesale	Bleach (Lab), Coffee ($44), Sugar & Dish Detergent	77.48
10	CSW/Stuber-Stroeh Engineering	Engineering Services: Gallagher Well Pipeline (Balance Remaining on Contract $22,125)	8,041.00
11	F.N. Cuthbert	Pressure Gauges (7)	122.93
12	Diesel Emissions Services	Diesel Particulate Filter Repairs ('99 Intl Dump Truck & Intl 4300)	445.58
13	Environmental Resource Assoc	Testing for Lab Certification	392.90

*Prepaid

Seq	Payable To	For	Amount
14	Environmental Science Assoc	Progress Pymt #28: CEQA Construction Monitoring for RW South Project (Balance Remaining on Contract $28,112)	735.00
15	Etemadfar, Jerry	Novato "Toilet Rebate" Program	200.00
16	Fast Blinds	Repair Wood Blinds (15 Gustafson Ct)	60.00
17	Gerrans, Robert	Novato "Washer Rebate" Program	50.00
18	Golden Gate Petroleum	Gasoline ($3.63/gal) & Diesel ($3.88/gal)	2,154.43
19	Grainger	Batteries: AAA (24), AA (72), 9V (12), C (24), D (24), Lights for Yard (3) ($208), Floodlights for Water Conservation Banner (2) ($815), LED Bulbs (2), Lightbulbs (10) & Solenoid Valve ($308)	1,493.24
20	Idexx Laboratories	Disposable Trays (100) ($202) & Control Organisms ($193) (Lab)	395.39
21	Irish & Son Welding	Weld 6" Pipe @ New City Building & Weld 2" Thread-O-Let for Maint Valve @ Hamilton (Balance Remaining on Contract $2,935)	575.00
22	Journey Ford/Lincoln	Diagnose & Repair Engine Problem ('08 F250)	145.00
23		Cafeteria Plan: Uninsured Medical Reimbursement	50.00
24	Kelly-Moore Paint	Paint & Primer (15 Gustafson Ct)	74.28
25	Landeros, Dianne	November Mileage Reimbursement	28.25
26	Lincoln Life	Deferred Compensation PPE 11/15/13	14,372.06
27	Lovi, Michael	Novato "Washer Rebate" Program	50.00
28	Maltby Electric	Electric Supplies	19.95
29	Marin Color Service	Paint (5 gal) (Olema Tank)	124.90
30	Marin Landscape Materials	Tarp, Concrete (2 yds) ($282), Mix-alls ($87) & Crushed Rock (1/2 yd)	445.19
31	Marin County Treasurer	Semi-Annual Revenue Bond PR-6 Interest	2,100.00
32	Miller Pacific Engineering	Geotechnical Services: Gallagher Well Pipeline (Bal Remaining on Contract $9,221)	9,900.00

Seq	Payable To	For	Amount
33	Nationwide Retirement Solution	Deferred Compensation PPE 11/15/13	1,025.00
34	North Marin Auto Parts	Gloves (600) ($117), Mud Flaps (2), Oil Filters (6) ($35), Air Filters (4) ($72), Wiper Blades (5) ($89), Headlight Assembly (2) ($218) ('03 Chevy C1500), Turn Signal Bulbs (10), Motor Oil (17 qts) ($92), Hydraulic Oil (2 gal), Cabin Air Filter & 2 Cycle Oil (4 qts)	668.95
35	North Bay Gas	Nitrogen ($457) (STP), Carbon Dioxide, Welding Shop Supplies ($48) & October Cylinder Rental ($93)	631.27
36	Novato, City of	Annual Encroachment Permit Renewal	2,770.00
37	Novato Disposal Service	October Trash Removal	413.20
38	Novato Sanitary District	RW for July-August	21,706.06
39	O'Reilly Auto Parts	Cycle Oil, Brake Cleaner ($70) & Car Wash Supplies	114.13
40	Pace Supply	Elbows (3), Box Lids (6), Tees (2) ($310), Valves (3) ($1,552) & Couplings (4) ($311)	2,367.39
41	PG&E	Power: Bldgs/Yard ($3,477), Rectifier/Controls ($437), Pumping ($29,690), Treatment ($123) & Other ($302)	34,030.07
42	Pini Hardware	Ant Bait, Pad Locks, Carbon Monoxide Detector, Screws, Lightbulbs, Wall Plate, Sandpaper, Stain, Putty, Pipe Plug, Sink Hose, Window Lock, Paint, Smoke Alarm, Bathroom Caulk, Irrigation Fittings, Garbage Disposal ($108) (Office), Electronic Supplies, Caulk for Pump Seal Repair, Hardware Light Switch Cover, Lights w/ Timer & Sprinkler	383.64
43	Richtman, Mark	Novato "Washer Rebate" Program	50.00
44	Rising Sun Energy Center	Recycled Water Audits (Water Smart Home Survey) (33)	726.00
45	Scott Technology Group	Quarterly Maintenance on Engineering Copier (7/16/13-10/15/13)	584.33
46	Sequoia Safety Supply	Safety Gloves (300) ($69) & Leather Gloves (12) ($66)	134.66

Seq	Payable To	For	Amount
47	Shirrell Consulting Services	November Dental Insurance Admin Fee	288.15
48	Shirrell Consulting Services	October Dental Expense	7,736.00
49	Siemens Water Technologies	Service on Deionization System	221.07
50	Stranne, Dawn	Novato "Washer Rebate" Program	50.00
51	Syar Industries	Asphalt (15 tons)	1,783.47
52	USA BlueBook	pH Buffer ($97), Chlorine Testing Supplies & Phosphoric Acid ($256) (STP)	454.08
53	US Bank	October Safekeeping Fee-Treasury Securities	132.50
54	Verizon Wireless	Cellular Charges: Data ($100) & Airtime ($123) (19)	223.41
55	Waters, Daniel	Novato "Washer Rebate" Program	50.00
56	Zanassi, Robert	Novato "Toilet Rebate" Program	100.00
		TOTAL DISBURSEMENTS	**$305,894.08**

The foregoing payroll and accounts payable vouchers totaling $305,894.08 are hereby approved and authorized for payment.

D2 Smith 11/11/13

Auditor-Controller Date

Chris DeFabriele 11/11/2013

General Manager Date

DISBURSEMENTS - DATED NOVEMBER 7, 2013

Date Prepared: 11/5/13

The following demands made against the District are listed for approval and authorization for payment in accordance with Section 31302 of the California Water Code, being a part of the California Water District Law:

Seq	Payable To	For	Amount
1	Aberegg, Michael	Drafting Services: San Marin H.S. As-Builts ($358), Novato H.S. As-Builts ($715) & Water Main @ Windhaven ($302) (Balance Remaining on Contract $19,128)	$1,375.00
2	Alpha Analytical Labs	Lab Testing (Novato Area)	553.00
3	Arendell, Tony	Exp Reimb: Drinking Water Distribution Certification Renewal (D2) (3/14-2/15) (Budget $0)	80.00
4	AT&T	October Internet Service @ PRTP	70.00
5	Baker, Jack	October Director's Fee	200.00
6	Bay Area Barricade Service	Rust Proof Paint (6-12 oz cans)	25.61
7	Bentley, David	Exp Reimb: October Mileage & Lunch with Insurance Brokers ($71)	95.43
8	Business Card	SSL Certificates (5 domains for 5 years) ($360), Drawing Set ($46) (Cantiller), Port-a-Potty Rental (Gallagher Stream Gauge) ($142), Facebook-Advertisement ($427), iPad Case ($28) (Baker), Internet Payment Gateway($128), Drain Clearing Tool ($57) & Supplies for Lab ($28)	1,217.05
9	Caldwell, David	Novato "Washer Rebate" Program	50.00
10	CA Dept. of Public Health	D1 Exam Test Fee (Roberto)	50.00
11	Cassidy, Trisha	Novato "Toilet Rebate" Program	200.00
12	CDW-Government	Wireless Keyboard (Grisso)	46.48
13	Chase, Matthew	Novato "Washer Rebate" Program	50.00
14	DeGabriele, Chris	Exp Reimb: Sept & Oct Mileage	251.42

Seq	Payable To	For	Amount
15	Dow, Jason	Novato "Washer Rebate" Program	50.00
16	Ed Aiona Photography	Professional Photograph Documentation of MSN B-1 Aqueduct Relocation (Balance Remaining on Contract $690)	200.00
17	Fisher Scientific	Reagents ($115), Buffer & Lead Standards	182.17
18	Fraites, Rick	October's Director Fee ($200) & North Bay Watershed Association Meeting on 10/4/13 ($100)	300.00
19	Grainger	Check Valve, Duct Tape (24) ($208), Replacement Light Over Gas Pumps, Timer for Outside Lights, Training Video (STP), Training Manual & Pocket Booklets (10) ($60)	939.45
20	Idexx Laboratories	Vessels (600) (Lab)	312.76
21	Leighton Stone	Valve Repair Kit	482.65
22	Maltby Electric	Electrical Supplies for Banner Lighting	211.22
23	McMaster, Carr	Torque Wrench	234.98
24		Wage Assignment Order	284.00
25	Mutual of Omaha	November Group Life Ins Premium	714.00
26	National Notary Association	Notary Insurance Renewal (Young) (2/14-2/15) (Budget $30)	33.00
27	NMWD Employee Benefit Fund	Refund Employee Benefit Deductions (12 Employees) (Includes $24 interest)	600.00
28	Novato Builders Supply	Fence Posts, Lumber (15 Gustafson Ct), Stringline & Concrete (1 yd) ($207)	276.70
29	Novato Chamber of Commerce	Membership Dues (11/1/13-10/31/14) (Bentley) (Budget $840)	815.00
30	Novato Chevrolet	Front Brake Rotors ($199) & Pad Kit ($167)	366.24
31	Novato Police	Telephone Answering Service (Aug-Oct)	600.00
32	NTU Technologies	Polymer (2,250 lbs)	3,622.50

Seq	Payable To	For	Amount
33	Office Depot	Office Supply Order: Calendars (25) ($249), Planners (17) ($246), Calendar Refills (11) ($153), Deskpad Calendars (21) ($136), Card Stock (1,000) ($33), Dividers, Recycled Wastebasket, Pens (104) ($133), Post-it Pads (144), Binders (24) ($184), Post-its, Post-it Flags, Pencil Lead, Folders (160) ($44), Gummed Tabs, Note Pads, Address Labels (16,000) ($98), Paperclips, Staples, Chairmats (4) (Admin & Eng) & Ink Cartridges	1,797.41
34	Pace Supply	Valve Keys (8)	763.38
35	Pape Machinery	Outrigger Pads ($132), Horn, Back-up Alarm ($107) & Keys ('04 Backhoe)	307.03
36	PERS	Pension Contribution PPE 10/31/13	49,633.63
37	Petterle, Stephen	October Director's Fee	200.00
38	Pollard Water	Mud Blade Kit	65.97
39	Roberts, Tina	Refund Overpayment on Closed Account	40.12
40	Rodoni, Dennis	October Director's Fee	200.00
41	Schoonover, John	October Director's Fee Less Deferred ($150) & Recycled Water Subcommittee Meeting on 9/24/13 ($100)	250.00
42	Soiland	Asphalt Recycling (36 tons)	60.00
43	Stone Tree Golf	Refund Excess Advance Over Actual Job Cost. Stone Tree Golf Course Agreement Assignment	1,534.84
44	Terryberry	December Service Awards (Jennison, McIntyre, Ramudo & Solar)	394.70
45	Thomas Scientific	Petri Dish Pads (600) ($170) & Petri Dish & Phosphate Buffer ($111)	352.15
46	Univar	Sodium Hydroxide (25, 803 lbs) ($9,147) & Ferric Chloride (17,767 lbs) ($6,201) (STP)	15,347.95
47	Verizon California	Telephone Charges: Leased Lines	878.60

Seq	Payable To	For	Amount
48	Wiley Price & Radulovich	Breakfast Briefing "How to Conduct the Interactive Process & Explore Reasonable Accommodations for Disabled Employees" (Landeros)	45.00
49	Williams, Leslie	Novato "Washer Rebate" Program	50.00
		TOTAL DISBURSEMENTS	**$86,409.44**

The foregoing payroll and accounts payable vouchers totaling $86,409.44 are hereby approved and authorized for payment.

11/5/13

Auditor-Controller Date

11/5/2013

General Manager Date

MEMORANDUM

To: Board of Directors

November 15, 2013

From: David L. Bentley, Auditor-Controller

Subj: Update - Bill Payment Options
t:\cons srvc\aps\aps memo 13.docx

RECOMMENDED ACTION: Information Only

FINANCIAL IMPACT:

- APS saves the District $16,000 annually, and saves each APS customer $3.06 annually ($11,800 cumulatively)
- Email bills save the District $3,800 annually
- Credit card payments cost the District $12,000 annually

In May 1997 the District introduced the Automatic Payment Service (APS) program. The goal was to attract 8% (1,700) of District customers to pay their bill by direct Automated Clearing House (ACH) debit to their checking account. Today 3,865 customers (18%[1]) participate, up 49 from one year ago. A message on the bill invites customers to sign-up for APS.

The APS bank charge in 1997 was 16.7¢ per transaction. Today the bank charge per transaction is 5.2¢[2], or $1,200[3] annually. The District's average cost to process a paper check is 75¢. Thus, APS eliminates over $16,000[4] annually in check processing cost. APS also saves each participating customer the cost of a 5¢ check and 46¢ postage six times per year ($3.06).

In November of 2002 the District began collecting email addresses from customers who prefer to have their bill delivered over the internet. Now 1,310 customers receive their bill via email only, an increase of 185 from one year ago. The email bill eliminates the cost of paper statements, envelopes, printing and postage, which costs $2.94[5] per account annually, saving the District $3,800 per year.

Finally, in response to customer demand, in August of 2006 the District began providing the option to pay the water bill by credit card. Over 1,000 payments per month are now received by credit card, with payment via the District's website accounting for 83% of the transactions. The net cost of credit card transaction averaged right at $1.00 per payment over the past year, which totals a little over $12,000[6] annually to provide this service. Note that the District saves the 75¢ paper check processing cost on credit card transactions. A recently negotiated reduction in credit card transaction fees will lower the unit cost over the next twelve months.

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[1] 10/31/13 active accounts = 21,528 (Novato: 20,483; RW: 42; WM Water: 776; OM 227).

[2] $7/mo flat charge divided by 6 batches (4 water + 2 payroll) X 4 APS/mo X 12 months = $56 divided by 23,190 (3,865 APS customers X 6 transactions/year) = 0.24¢ + 5.0¢/transaction = 5.24¢/transaction.

[3] 5.24¢ X 3,865 APS Customers X 6 transactions/year = $1,216

[4] (75¢ - 5.24¢) x 6 x 3,865) = $16,177

[5] 12.4¢/bill + 37.0¢ average postage rate = 49.4¢ x 6 = $2.96/yr x 1,310 = $3,878

[6] 12,000 payments annually X $1.00 per transaction

North Bay Workshop on Wheels

November 14, 2013
8:45 am-4:00 pm

BOD MISC

Treating Wastewater for Non-potable Reuse
Gary Wettstein
Las Gallinas Valley Sanitary District

Serving Recycled Water for Innovative Uses
Jim Kenney
Marin Municipal Water District

De-Chlorination of Effluent Using Engineered Wetland
Matt Pierce
City of Petaluma

Lunch at Miwok Park

Actiflo Process and Chlorine Dioxide
Marco Jennison
North Marin Water District

Food Waste to Energy
Chris Finton
Central Marin Sanitation Agency

Wastewater Conveyance Infrastructure Planning Using Risk Minimization and Level of Service Criteria
Greg Norby
Ross Valley Sanitation District

BAYWORK On-Line Forum
Raj Singh
City of San Jose

baywork · Marin Municipal Water District · North Marin Water District · CMSA · Las Gallinas Valley Sanitary District · Petaluma

BOD MISC SMSWP Ph6

JARED HUFFMAN
2ND DISTRICT, CALIFORNIA

COMMITTEE ON
NATURAL RESOURCES

COMMITTEE ON BUDGET

Congress of the United States
House of Representatives
Washington, DC 20515–0502

WASHINGTON OFFICE
1630 LONGWORTH HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
PHONE: (202) 225-5161
FAX: (202) 225-5163

WEBSITE: huffman.house.gov

October 30, 2013

Chris DeGabriele, General Manager
Board of Directors
North Marin Water District
PO Box 146
Novato, CA 94948

Dear Friends:

Congratulations to the North Marin Water District, as a member of the Sonoma Marin Saving Water Partnership, for recently receiving the competitive WaterSense Excellence Award for Water Efficiency from the Environmental Protection Agency. Your cohesive efforts this past year have been outstanding, enabling local businesses to save nearly 24 million gallons of water.

Thank you for helping to set a national benchmark for resource conservation and environmental stewardship.

Please extend my appreciation to the rest of the team who worked to make this possible and do not hesitate to contact my San Rafael District Office if I can be of any assistance to you in the future.

Sincerely,

JARED HUFFMAN
Member of Congress

SAN RAFAEL
999 FIFTH AVENUE, SUITE 290
SAN RAFAEL, CA 94901
PHONE: (415) 258-9557
FAX: (415) 258-9913

PETALUMA
206 G STREET, #3
PETALUMA, CA 94952
PHONE: (707) 981-8967

FORT BRAGG
430 NORTH FRANKLIN STREET
P.O. BOX 2208
FORT BRAGG, CA 95437
PHONE: (707) 962-0933
FAX: (707) 962-0905

EUREKA
317 THIRD STREET, SUITE 1
EUREKA, CA 95501
PHONE: (707) 407-3585
FAX: (707) 407-3559

BOD Misc

The Press Democrat

North Coast reservoirs in need of rain

By MARY CALLAHANTHE PRESS DEMOCRAT on November 8, 2013, 3:21 PM

There may be a tiny bit of rain next week, but don't count on it coming anywhere close to solving the water supply questions that have hovered over the North Coast since spring.

For one thing, the parched earth is likely to soak up most of what falls as a storm system expected to hit Canada skirts Sonoma and Mendocino counties, water officials say.

For another, the shifting forecast is less optimistic than it was even a few days ago, when it looked as if a whole inch of rainfall might be possible, meteorologists say.

The likelihood now is a fraction of an inch over a few hours late Monday or Tuesday, and maybe Wednesday, forecasters said.

Furthermore, the need to beef up storage is far greater than a single rainstorm can likely address, particularly with the fall chinook salmon run on the horizon raising the prospect of increased releases from Lake Mendocino, Sonoma County Water Agency personnel said.

A look at the reservoir north of Ukiah tells the story. The water level is alarmingly low, with just over 34,000 acre feet of stored water and vast patches of lake bottom around it, thanks in large part to an extremely dry spring.

The lake, the principal water source for communities and agricultural users from Healdsburg to Ukiah, is at its fourth-lowest level since 1959, and a sizable chunk of it is silt, agency personnel said.

Meanwhile, chinook salmon, though in small numbers yet, have begun migrating up the Russian River and are encountering shallow spots near Healdsburg that may need to be remedied, though water already is being released daily from Lake Mendocino at a rate of about 125 cubic feet per day, said Pam Jeane, assistant water agency general manager.

A larger number of the threatened fish are believed to be waiting off-shore, outside the mouth of the river in Jenner. With the breaching of the sandbar in the estuary Thursday and the potential for cooling temperatures and a bit of rain, they are expected to head upstream in greater numbers in the coming weeks, she said.

"At this point, it's not critical," Jeane said of the water supply. "We are planning on getting some rainfall.

"However, we have been very, very clear with the (wildlife) resource agencies about our concern about if we don't get any rainfall and what that means in terms of both" fish and humans, she said.

Jeane and agency spokesman Brad Sherwood said the situation would be far worse had consumers not answered the call to conserve over the summer months.

"We could be in pretty dire straits right now, and it made a very large difference for us," Jeane said.

"And it gave us some flexibility this fall.

They urged residents to continue now, aided perhaps by the declining need for outdoor irrigation.

Sherwood also held out a possible incentive, saying residents who use less water in their homes over the winter also will reduce their sewer bills, which are based partly on water consumption.

"We're not out of the woods yet," he said.

(You can reach Staff Writer Mary Callahan at 521-5249 or mary.callahan@pressdemocrat.com.)

Marin Voice: Marin IJ takes its show on the road

Posted: marinij.com

BEGINNING THIS WEEK, the Independent Journal is taking its newsroom — or at least part of its newsroom — on the road.

We're starting a series of informal meetings with residents throughout Marin County, a new effort to carry on a community conversation. We want to tell our story and to hear from you.

Actually, we've been conversing with our readers in one form or another since 1861, when the first four-page edition of the weekly Marin County Journal rolled off a hand-operated press. We've been shining a bright light on our community ever since — "devoted to ... the interests of Marin County," as that first edition announced at the top of the front page.

We receive and print dozens of your letters to the editor each week — we publish about 1,800 a year — and we run your more expansive thoughts in op-ed columns almost daily, to the tune of some 300 "Marin Voice" pieces a year. Our reporters are in touch with you via their stories and blogs, and we hear from you around the clock by phone and email, Twitter and Facebook, and any number of other social media outlets.

You are not shy about telling us what we did wrong, and even what we did right. And you have no shortage of opinions on Marin County topics, from politics to crime to the weather. That's as it should be.

Though we feel our engagement with the community is strong, we can always do better.

This is a time of enormous change in the communications industry; it's no secret that newspapers have been buffeted by sweeping shifts in how, when and where people get their news and how advertisers market their products. It has caused economic upheaval in our business and forced us to work differently, with a determined focus on our digital future.

Amid such change we are reaching more readers than at any time in our 153-year history.

Our readership stretches far beyond the 26,000 home-delivered newspapers that reach some 69,000 print readers. We're also getting nearly 4 million online page views a month; those are individual pages read on our desktop and mobile websites and on our smartphone apps. More than 500,000 unique visitors a month are using our various electronic platforms.

And while that's good, I want to be sure we maintain our connection with Marin residents. Our staff works hard to put out the best possible community newspaper even while focusing on a future that encompasses a dynamic website, multimedia reporting tools and active use of social media. Amid rapid change, I don't want to lose touch.

Because of that, I'm trying something different. I and a handful of other newsroom staffers will step out from behind our desks and bylines and meet you face to face. We will embark on a tour of the county, a series of sessions to let you know what we're up to and for you to tell us what you want to see in a community newspaper, in print and online.

The important thing for me is to communicate personally — beyond bylines and Twitter handles.

Here's our schedule for the next few months; stay tuned for additional sessions throughout 2014:

• 7 p.m. Wednesday: Mill Valley Public Library, Creekside Room, 375 Throckmorton Ave., Mill Valley.

• 7 p.m. Dec. 10: Marin City Public Library, 164 Donahue St., Marin City.

• 7 p.m. Jan. 15: Novato Public Library, 1720 Novato Blvd., Novato.

See you there.

Robert Sterling is editor of the Marin Independent Journal. Email him at rsterling@marinij.com. Read his "Notes on News" blog at blogs.marinij.com/notesonnews. Follow him via Twitter at @inkonbrain.

BOD MISC

Mendocino County board says no to Pinches' latest water idea

By TIFFANY REVELLE Ukiah Daily Journal
Updated:

UkiahDailyJournal.com

Pinches thinks Sonoma County owes us for water

Ukiah Daily Journal

Third District Supervisor John Pinches got no support from his board colleagues last week for his idea to take a closer look at whether the county deserves some payback from Sonoma County for water.

The Mendocino County Board of Supervisors declined to form an ad-hoc committee to explore "water issues," according to an agenda summary, around the question of whether Mendocino County is getting its fair share of water in its partnership with the Sonoma County Water Agency over management of Lake Mendocino, Lake Sonoma and the Russian River.

The board discussed the issue for about half an hour, considering County Counsel Tom Parker's recommendation to appoint two members of the board to an ad hoc and to "direct the ad hoc to define its own scope, composition and timeline related to information on Lake Mendocino water releases and downriver diversions of Russian River water in Sonoma County," and to make recommendations to the full board.

"I think it's important for the board to consider creating an ad hoc to help get more information on this issue and allow the board to make as fully informed as possible any decisions they may choose to make," Parker said.

Third District Supervisor John Pinches wanted his colleagues' support to review Decision 1610, which lays out a general agreement that Mendocino County is entitled to some of the proceeds of the sales of water from the Russian River's flow system, which includes water sourced in Mendocino County.

First District Supervisor Carre Brown was the first to speak, and said she couldn't support the recommendation.

"I really feel it's a waste of time and resources for supervisors and staff, and that is of both counties," she said. "I believe the county of Mendocino really has no standing on these issues, although they can discuss them."

She cited several written responses from the state Water Resources Control Board when the Russian River Flood Control District had previously petitioned the state for a reconsideration of Decision 1610.

"I think a simple letter to the Sonoma County Water Agency board of directors by Supervisor Pinches asking the questions that he feels are unanswered is all that is needed at this time," Brown said.

Lee Howard, a local business owner and board member of the Russian River Flood Control District, cited four such written decisions, saying they were "all very relevant to this issue, and probably answer a lot of the questions; you don't need an ad hoc to do it."

He reminded the board that the county had in 2002 hired an attorney for the same purpose and had "come to the conclusion that there wasn't a whole lot you had to say in the issue to start with." Howard recommended the board fully study the issues before appointing an ad-hoc committee "to go out and tip at windmills" and fight "something that isn't there to fight."

Addressing Pinches directly, Howard said, "I just think that right now, poking at Sonoma County isn't going to help that issue. Sonoma County has worked with us and is working with us on issues to try to get through some very difficult positions that we're at today."

Bill Koehler, general manager of the Redwood Valley Water District, said he had a "three-inch binder" of the documents on the issue, and said he agreed with Howard's comments that the board was welcome to appoint a committee if it felt it had the time and energy to do so. "Be happy to loan it to somebody."

Pinches didn't recommend hiring an attorney or investing money in the effort, but wanted the ad hoc to analyze "glaring inconsistencies" in Decision 1610. It would, he acknowledged, take staff time.

"My position is, what do we have to lose?" Pinches said. "I'm not out to poke a stick in the eye of Sonoma County Water Agency; that's not the intent. But I think there are some issues that were never addressed."

He disagreed that Mendocino County has no standing in the matter, citing the county's $15,000 expense to join a Russian River water association.

"Here we have a lake out here that's down in the mud and we have (a lake) in Sonoma County -- that has 45 square miles of Mendocino County watershed behind it -- that's virtually almost full," he said, adding his hope that Mendocino County's water agencies and water customers would encourage a review.

Pinches said Sonoma County needed to be reminded to share proceeds from the sale of the Russian River water -- including water from Lake Mendocino -- with the county of Mendocino, as is outlined in Decision 1610.

"I think everybody realizes that the water situation in Mendocino County is drastic," Pinches said. "We have property owners out in the Redwood Valley area that have owned and paid taxes on property for decades that can't get a water hookup."

He mentioned the new casino in Rohnert Park, saying that the Sonoma County Water Agency supplies its water.

"No matter if the agreement's right or wrong, ... we're not being treated equitable in that process, and it's time to review it," he said. "Decision 1610 was, what, in 1985, '86, and it's

never been reviewed. And frankly, water rights and water flows can be changed. They're meant to be changed; they're not cast in stone."

Fourth District Supervisor Dan Gjerde, whose district lies in the northwestern corner of the county and doesn't include the Russian River or its watershed, said he didn't see any harm in forming an ad hoc, but wasn't the right person to sit on it.

Fifth District Supervisor Dan Hamburg also said he'd be willing to be on the ad hoc, and also wondered "why Mendocino County doesn't have some rights to water that falls on the earth in Mendocino County and then drains down into Lake Sonoma," but felt he didn't have time to explore the issues.

Second District Supervisor John McCowen said he was also concerned the county isn't getting "our fair share of Mendocino County water ... but it's also a situation that we did to ourselves by people 60 years ago not having the foresight to secure the water right to water that would be impounded."

He agreed that Pinches should write a letter to the Sonoma County Water Agency asking the outstanding questions.

"There is currently a pretty critical process going on where the Russian River Flood Control District is seeking to gain a license for the 8,000 acre-feet of water that Mendocino County entities are entitled to out of Lake Mendocino," McCowen said. "I know they've been involved in that process diligently for two or three years. I think there's some hope there may be light at the end of the tunnel. I think going in, asking a bunch of questions, reopening a bunch of questions that have already been answered at this particular time probably (isn't) helpful."

Pinches said the Sonoma County Water Agency is protesting the Russian River Flood Control District's application for that water right.

"If they wanted to work together, why are they the official protester -- and they've been that for several years now -- of that water right application?" Pinches said.

He added that although he couldn't get his colleagues' support, "I'm still going to proceed in this issue, because I have the rest of my lifetime to work on it."

McCowen said the county's upstream partnership with Sonoma County, "which controls the majority of the water, has certainly been a mixed blessing," in that Sonoma County makes protests regularly but also has made decisions that are beneficial to Mendocino County.

"It sounds to me like Sonoma County is drinking Mendocino County's water, but Mendocino County is drinking Sonoma County's Kool-Aid," Pinches said.

Sean White, general manager of the Russian River Flood Control District, said protesting is often not adversarial, but is a procedural step to ensure the protester is a party to any negotiations over water rights.

None of Pinches' colleagues on the board were willing to be a second member for the proposed ad-hoc committee, and the motion on the floor died for lack of a second.

Tiffany Revelle can be reached at udjtr@ukiahdj.com, on Twitter @TiffanyRevelle or at 468-3523.

BOD MTG

The Press Democrat

Solution to Highway 101's biggest bottleneck at least seven years away

By MATT BROWNTHE PRESS DEMOCRAT on November 11, 2013, 4:53 PM

On the day the new Graton Resort & Casino opened last week, northbound traffic on Highway 101 backed up from Rohnert Park all the way to Novato. It took drivers an hour to travel just 22 miles.

The casino is expected to add up to 10,000 vehicles per day to the already overburdened artery, highlighting the need to complete a long-planned Highway 101 overhaul, widening bridges, reconfiguring interchanges, and other improvements.

"A traffic generator like the casino makes this project even more important," said Dianne Steinhauser, executive director of the Transportation Authority of Marin. "It emphasizes the need to do it."

Much of that work will be completed by 2017.

But even after all the improvements, the worst bottleneck in the area will remain: the freeway will still narrow from four lanes in Marin County down to two lanes from north of Novato to Petaluma. A lack of funding will leave that 10-mile gap in carpool lanes for at least seven more years, transportation officials say, and frustrate commuters who battle heavy daily traffic between Sonoma and Marin counties.

Thirteen years after embarking on the project to improve Highway 101 from Highway 37 in Novato to Windsor River Road — a nearly 40-mile stretch — construction crews are working on the last section between Petaluma and northern Novato known as "The Narrows."

The projects underway include improving all four interchanges in Petaluma, widening the overpass at Redwood Landfill, adding frontage roads through The Narrows, closing off unsafe highway access points, and widening the bridges over the Petaluma River and Highway 116. All of the work will be completed by 2016.

A future project to realign the freeway and build a new bridge over San Antonio Creek at the county line is fully funded and will break ground in 2015 with a two-year timeline.

When all the work is complete, the freeway will be safer and more modern, but no wider than it is today. Funding for the last piece — a carpool lane in each direction from northern Novato to Old Redwood Highway in Petaluma — is still $250 million short, and officials don't know when it will come, or even who will pay.

"Where's the money going to come from? We don't know the answer to that yet," said Suzanne Smith, executive director of the Sonoma County Transportation Authority. "If someone wrote me a check tomorrow, we could have the whole thing done in four years. Optimistically, we could see funding in two to four years."

The six miles of unfunded Sonoma County carpool lanes are estimated to cost $125 million. Marin County's four-mile gap is $110 million short.

The Federated Indians of the Graton Rancheria, which owns the casino, will pay $2 million over the next 10 years for transportation infrastructure to offset the increased traffic from the gambling palace.

So far, the Sonoma County side of the project has been funded by Measure M, the 20-year sales tax measure voters approved in 2004, and the state and federal money that it has leveraged. But the Measure M fund is largely depleted. Officials borrowed most of the money up front, and the rest of the expected revenue will go toward servicing the debt, Smith said.

Regional transportation planners must now get creative to make up the funding gap.

Extending Measure M at this point is not an attractive option, Smith said, because the cost of borrowing that far ahead is expensive.

Marin County's Measure A sales tax is not supporting the Narrows project, Steinhauser said. Those funds were spent on Highway 101 widening around San Rafael.

Marin is widening its side of the freeway incrementally, including in two spots that should be ready early next year — an additional southbound lane from Novato Creek to Franklin Avenue and a northbound lane from Atherton Avenue to just south of Redwood Landfill.

Agencies are looking for state and federal funding, but Smith doesn't expect money from Sacramento or Washington in the near future.

"In terms of state and federal funds, we don't expect to see a lot of that on the horizon," she said.

A Congressional ban on earmarks makes federal funding for specific projects hard to come by, Steinhauser said.

In the meantime, officials are preparing the highway for the final 12-foot wide strip of asphalt — whenever funds become available — and preparing drivers to expect bottlenecks until at least 2020.

"We made a choice to do the safety improvements first," Steinhauser said. "While we are able to make the roadway safer, we are not able to widen the road all the way at this time. That's going to be frustrating for drivers."

You can reach Staff Writer Matt Brown at 521-5206 or matt.brown@pressdemocrat.com.

Pt. Reyes Light 11/15/13

Guest report ✓ **by Peggy Day**

When water flows uphill

Locals driving past Nicasio Reservoir might have seen a noticeable drop in water levels since April of this year, so much so that the old Nicasio Valley Road bridge over what used to be the Nicasio Creek—before the Seeger Dam was built in 1961—has resurfaced for the first time since 2004.

But for Nicasio and most West Marin residents, conservation measures like shorter showers and reducing outside watering won't have any effect on the reservoir. Contrary to popular belief, Marin Municipal Water District's Nicasio Reservoir serves East Marin and the San Geronimo Valley, not coastal Marin. Nicasio relies on local wells and springs, the Point Reyes area on the North Marin Water District and the rest of West Marin on small local districts.

Although low levels are evident to casual observers, the level is nowhere near many historical lows. Last month 10,376 acre-feet were recorded, or 46 percent of capacity according to the California Department of Water Resources Data Exchange Center. In the reservoir's 42-year history, 15 years had greater lows. All-time low levels were recorded between 1975 and 1977, when the reservoir all but dried up. In 1977, after months of three-digit readings, only 181 acre-feet were recorded in August. The historic drought ended with the onset of heavy rains that December.

The district is carefully watching for rain this year and barely a drop fell in October—a scant 0.02 inches, as compared to an annual average of 2.72 inches, at Lake Lagunitas. For most of the year, MMWD takes water from Kent Lake, behind the San Geronimo Valley, treats it at a San Geronimo plant and then pumps much of it over the hill to East Marin. For southern Marin, the district pumps Kent Lake water to Bon Tempe Lake, where it gets treated at another plant before being sent on. The district also drains water from the Nicasio Reservoir to supplement Kent Lake's reserves each year. Kent Lake is preferred because the water is cooler and has less turbidity (fewer particles suspended in it) and requires less treatment than Nicasio water. One San Geronimo Valley resident said he could "always tell when M.M.W.D. has switched supplies because Nicasio water is so much harder than Kent's."

When Nicasio water is needed, M.M.W.D. starts up a pumping station located in Tocaloma to bring water from the reservoir to the San Geronimo treatment facility. A 30-inch pipe from the base of Nicasio Reservoir runs alongside Laurel Canyon Road, continues along Platform Bridge Road until it crosses Nicasio Creek, follows the old railroad grade through Samuel P. Taylor Park and finally reaches the treatment plant in San Geronimo. The district holds a permit with the California State Water Control Board to appropriate 31 cubic feet per second to a maximum of 29,000 acre-feet per year from Nicasio. In addition, M.M.W.D. must move water to comply with several permits regarding salmon habitat protection in Lagunitas, Nicasio and San Geronimo Creeks.

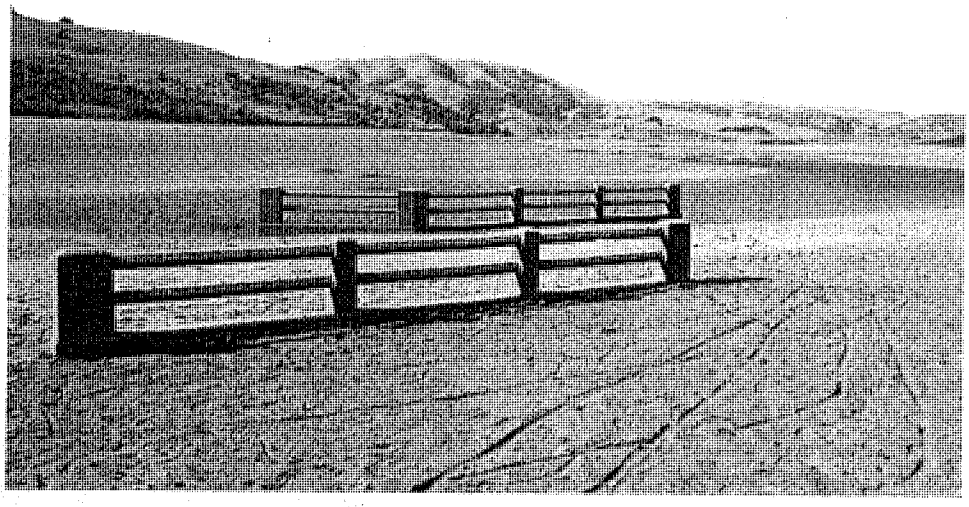
When that old bridge becomes visible off Nicasio Valley Road, the surface level is down about ten feet. If you are curious about just how low Nicasio Reservoir is getting, you can measure it yourself: Just count the steps from the little shed at the dam down to the water. Each step equals a foot.

Peggy Day is the grandmother of three magnificent Point Reyes boys; a producer of "Seriously Now," MarinTV's news program; and a five-year member of Investigative Reporters and Editors where she discovered that reporting utilizes the same inquisitive and analytical skills she learned in 20 years as an emergency nurse.

wash into the ocean and be consumed. According to a wildlife refuge specialist, rains float among plankton that is eaten by the planktivores, and won't the preda- [illegible] poisoned fish?

care' s viewpoint and to sign the petition http://bit.ly/wildcare-rodenticides.

Photo Only



David Briggs

NICASIO: The old Nicasio Creek bridge was last visible was in 2004; however, in the reservoir's 42-year history, 15 years have dipped to greater lows than 2013.

but after years of searching, they have found no positive results. They are inquiring about renting a private home or space from a business, but so far, many have not met licensing requirements to function as a school. Transporting thousands of dollars in the preschool's equipment will be yet another obstacle, Ms. Tacherra said. The ideal solution would be to stay close to campus, where teachers and students have profited from collaboration, she added.

At the Tuesday meeting, several trustees cited benefits they were sad to lose as the lease to the preschool comes to an end. Mixing classes provided a seamless transition between different grades, allowing students to work to an individual pace, said Arianne Dar, the board president.

Ms. Tacherra asked the district to address the preschool's situation at the next meeting. "We need help. We are a bunch of volunteer mothers and fathers who are busy with our children, our job and our daily life," she told the *Light*. "It's a really big task to reestablish a school." She hopes they will aid in finding a new location, and could potentially use any leftover funding for the task force toward that goal.

Perhaps in the future, she said, education will be supported, regardless of age, she added.

...program as possible. Surveys will be available at each school site, Tomales and Point Reyes and Inverness Park preschools, as well as in the family center of each campus. There will be a link to an online version of the website that can be accessed at sdlitf.com.

A big thanks to First 5 Marin who has funded the work. Our grant ends in December and we will be reporting our findings to First 5 and the Shoreline community in January.

A Spanish version of this article will available in next week's paper.

Supervisors submit LCP update

County supervisors Tuesday last week officially transmitted the amended Local Coastal Plan to the California Coastal Commission. The document was sent unofficially Sept. 20 after adoption by supervisors.

Jack Liebster, Marin County Development Agency Principal Planner, who's been shepherding the amendment process, said Coastal Commission Deputy Director Dan Carl suggested the county kick off the formal review. The commission will determine whether the proposed amendments comply with the requirements of the California Coastal Act.

County and commission staffs have been conferring regularly since the unofficial submittal, continuing their constant contact during the county's update phase. Liebster noted during the process that this was a welcome change to the standard practice of few interactions until a local agency would drop a complete amended LCP on the Commission's doorstep. It may serve as a model for state-local communications as other counties and cities prepare or update their coastal plans.

Since delivering the unofficial transmittal, the county sent to the commission a requested "compendium" of responses to public comments, as well as comparisons of current and proposed policies.

Liebster said the Commission has 10 calendar days to determine if the submission is complete and 60 days to act on the amended plan. He expects it will ask for extensions on both including up to a year for reviewing the substance of the amendments.

Supervisors agreed to Liebster's request that they ask the Commission to hold its regular May 2014 meeting in Marin. He hopes this will maximize local participation in Commission proceedings at a time when its staff has the amended plan before it. – *Lynn Axelrod*

West Marin Citizen

11/15/13