Date Posted: 3/1/2013

NORTH MARIN WATER DISTRICT

NORTH MARIN WATER DISTRICT
AGENDA - REGULAR MEETING
March 5, 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***, February 19, 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***
		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.
	5.	***Consent - Approve*** April 2012 Vehicle / Equipment Auction Request
	6.	***Consent - Approve*** Contract Amendment to Russell D. Mitchell & Assoc.
7:45 p.m.		***INFORMATION ITEMS***
	7.	Recycled Water South Phase 2 – Public Outreach Update
	8.	North Bay Water Reuse Authority Board Meeting – January 28, 2013
	9.	Amended North Marin Water District Lagunitas Creek Water Rights
	10.	NBWA Meeting – March 1, 2013
	11.	TAC Meeting – March 4, 2013

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)

12. ***MISCELLANEOUS***
Disbursements
Reimbursement Program 2012
Meters by Size

News Articles:
Water Board changes regular meeting days
Block water release looks hopeful for Eel River salmon; Pikeminnow population may be stabilizing
Novato man named county publicist
North Marin Water District- City Guide

13. ***Closed Session:*** Conference with Real Property Negotiator (Chris DeGabriele) regarding terms of Intertie Agreement between North Marin Water District and Marin Municipal Water District (Government Code Section 54956.8)

9:00 p.m.

14. ***ADJOURNMENT***

DRAFT
NORTH MARIN WATER DISTRICT
MINUTES OF REGULAR MEETING
OF THE BOARD OF DIRECTORS
February 19, 2013

CALL TO ORDER

Vice President Rodoni 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 and John Schoonover. Also present were General Manager Chris DeGabriele, Secretary Katie Young and Auditor-Controller David Bentley. President Rick Fraites, Director Stephen Petterle and Chief Engineer Drew McIntyre were absent.

District employees Pablo Ramudo (Water Quality Supervisor), Robert Clark (Operations/Maintenance Superintendent) and Doug Moore (Construction/Maintenance Superintendent) were in the audience.

Vice President Rodoni informed the Board that, at the request of the General Manager, Item #9, Policy Revision for On-Call and Stand-By Duty; Overtime Policy, will be removed from tonight's agenda for further review by staff.

MINUTES

On motion of Director Schoonover, seconded by Director Baker and carried by the following vote, the Board approved the minutes from the previous meeting as amended:

AYES: Director Baker, Rodoni, Schoonover

NOES: None

ABSTAIN: None

ABSENT: Director Fraites, Petterle

GENERAL MANAGER'S REPORT

Water Bond Coalition

Mr. DeGabriele stated that in the early 2000's there was a Water Bond Coalition formed principally of agencies and counties along the North Coast in advance of Prop 50, the Clean Water Bond that was passed in 2002. He said that Prop 50 resulted in the Integrated Regional Water Management Plans and regional distribution of funding that the Department of Water Resources has ascribed to since then. He noted that the District benefited from the coalition and with the upcoming Water Bond scheduled for the November 2014 ballot, the same parties are talking about reenergizing the Water Bond Coalition to insure that the smaller entities of the North Coast are not

left out. He advised the Board that he participated in a conference call with the other parties and advised the Board that the District will likely continue participation in the Coalition.

SCWA Strategic Plan Workshop

Mr. DeGabriele informed the Board that he attended the SCWA Strategic Plan Workshop this afternoon. He noted that it was well attended by Water Contractor representatives, cities and the general public as well as SCWA's full board. He stated that there was a presentation that covered work force, public outreach, finance and energy strategies. Mr. DeGabriele said that the Water Agency displayed a chart that showed their performance in achieving carbon-free water and the goal to reduce greenhouse gases which has been remarkably successful.

Director Rodoni asked when the next workshop would be. Mr. DeGabriele informed the Board that the next SCWA Strategic Plan Workshop will be on April 2nd at the Lucchesi Center in Petaluma focusing on water supply, sanitation and flood control operations.

Congressman Huffman Reception

Mr. DeGabriele informed the Board that this Friday, Congressman Huffman will be holding a reception for elected officials and he and Director Fraites are planning to attend.

Fluoridation

Mr. DeGabriele informed the Board that the Sonoma County Board of Supervisors will consider their path forward on fluoridation of the Sonoma County Water Agency water supply at the Board of Supervisors meeting on Tuesday, February 26th. The Supervisors will consider a request to authorize a preliminary engineering design on how SCWA will fluoridate the water.

Director Schoonover asked if it would cost the District any money. Mr. DeGabriele stated that the Health and Safety code was revised in 1996 authorizes fluoridation provided that rate payers and taxpayers do not to pay for fluoridating the water supply.

Mr. DeGabriele stated that the Sonoma County Board of Supervisors are strident in their desire to see the water supply be fluoridated and ultimately the decision is made by the Board of Supervisors so the majority of discussions and the debate should take place there. He noted that if the District doesn't pay for it, the District will not have the choice but the Board of Supervisors must find the money to fluoridate.

Director Baker asked what would occur at Stafford Lake if the water from Sonoma County would be fluoridated. Mr. DeGabriele stated that California Department of Public Services would not require the District to fluoridate Stafford Lake supply.

Director Baker asked if it would cause problems for testing the water.

Pablo Ramudo answered that it shouldn't, and that if the water is fluoridated daily samples must be taken and Sonoma County Water Agency would have to do that.

Mr. DeGabriele opined that this fluoridation wouldn't occur for several years.

OPEN TIME

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

STAFF / DIRECTORS' REPORTS

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

District Secretary, Katie Young, informed the Board that she will be attending a Board Secretary Conference in Anaheim next week from February 27th toMarch 1st and Renee Roberts will be filling in for her a couple of hours each day.

MONTHLY PROGRESS REPORT

Mr. DeGabriele reported that through the month of January water production in Novato and West Marin was up slightly. He noted that in January there was production from the Stafford Treatment Plant and at the end of January, Stafford Lake was full. Mr. DeGabriele advised that freeboard at the Oceana Marin treatment and storage ponds were in good shape. He informed the Board that the District has worked 384 days through the end of January without a lost time accident and that over the last four years District employees have worked safely 1,430 days out of a possible 1,449 days. Mr. DeGabriele stated that there were 13 service lines replaced in January, (ten polybutylene and three copper). He said that the complaints and service orders were down 15% in January, even though high bill complaints were up by one third.

David Bentley reported that the Monthly Investments the District's treasury has a cash balance of $8.5M and is earning 0.45% interest. He noted that the ratio of total cash to budgeted annual operating expense stands at 67%. Mr. Bentley informed the Board that to-date, $6.8M has been advanced for the Recycled Water Expansion Project and reimbursement from the federal government and the state for grant and loan funding is expected in this amount.

CONSENT CALENDAR

On the motion of Director Schoonover, seconded by Director Baker and carried by the following vote, the following items were approved on the consent calendar:

AYES: Director Baker, Rodoni, Schoonover

NOES: None

ABSTAIN: None

ABSENT: Director Fraites and Petterle

LAFCO SPECIAL DISTRICT MEMBER CALL FOR NOMINATIONS

Marin LAFCO is calling for nominations for a Special District Regular Member by March 1, 2013. Director Baker is interested in the position.

The Board nominated Director Baker for Marin LAFCO Special District Regular Member.

AUTHORIZE VACUUM EXCAVATOR REPLACEMENT

In 2003, the District purchased the current trailer mounted vacuum excavator to help improve the efficiency of service replacements and emergency repair work. The excavator has served that purpose well and is need of being replaced.

In the current FY 12/13 budget, staff recommended replacement of the trailer mounted vacuum excavator. Staff has contacted equipment manufacturers over the past few months and has developed a specification for proposals and is recommending a Request for Proposal be sent to specific dealers.

The Board authorized staff to solicit bids for the purchase of a new 800-gallon, trailer mounted vacuum excavator.

ACTION CALENDAR

RATE INCREASE NOTICE

Mr. Bentley reminded the Board that even though the Board had adopted a rate increase in effect for three consecutive years, the California Government Code provides that customers must be given notice a minimum of 30 days in writing before the new rate goes into effect. Mr. Bentley informed the Board that a message would be included on the water bills starting March 1st notifying customers of the rate increase.

Mr. Bentley stated that the District has a personalized calculator available on the District website that will show the customer how much their bill will increase with the new rate. He stated that the typical customer will see a five dollar per month increase.

Director Schoonover suggested that the message add language that a typical residence bi-monthly increase would be five dollars. Mr. Bentley said that staff will look at adding that wording to the message.

On motion of Director Baker, seconded by Director Schoonover and approved by those Directors present the Board authorized placing the notification on the water bill for Novato customers commencing March 1, 2013.

POLICY REVISION FOR ON-CALL AND STAND-BY DUTY; OVERTIME POLICY

Mr. DeGabriele requested that this item be removed from the agenda for further review by staff.

INFORMATION ITEMS

QUARTERLY PROGRESS REPORT- WATER QUALITY & QUARTERLY BACTERIOLOGICAL QUALITY MONITORING REPORT

Pablo Ramudo presented the Board with a quarterly progress report for water quality. He stated that the water served to the communities of Novato and Point Reyes met federal and state primary and secondary water quality standards during the second quarter. He informed the Board that Stafford Lake was water used as a source of drinking water through November 30th and the water quality was monitored on a weekly basis. He noted that algae numbers in Stafford Lake were very high. He noted that the total organic carbon concentration was down from the record high in September but still remained slightly high at 7.9 - 8.5 mg/L.

Mr. Ramudo advised the Board that the total organic carbon removal remained above 35 - 40% requirement, and that there were 243 samples collected in Novato for compliance with the Total Coliform Rule; and there were no positive coliform samples this quarter.

Mr. Ramudo informed the Board that Pt. Reyes water quality was good; there was no salinity intrusion. He advised the Board with the completion of Well #4, staff has begun monitoring and performing the necessary tests to obtain permission from the California Department of Public Health to use water from the well as a source of drinking water. He noted that staff would continue with monitoring the well and the District should be granted approval for use of Well #4 just before summer.

Director Baker asked if the testing typically takes a long time.

Mr. Ramudo said that normally testing takes at least one year and it depends on the first sample quality results, which is the most critical test. He advised the Board that the District has had good results so far.

Mr. Ramudo stated that the Pt. Reyes Treatment Plant performance was good and iron and manganese were not detected in the treated water. He noted that 23 samples were collected and

there was one coliform positive sample this quarter at Paradise Ranch Estates Tank #4 due to a low chlorine concentration in the area because of air locking the chlorine booster pump. He advised the Board that the operators corrected the problem and will monitor it more frequently. Mr. Ramudo informed the Board that disinfection byproducts were good throughout the quarter.

Mr. Ramudo stated that Deer Island Recycled Water Facility produced water on the first day of the quarter and there was no coliform bacteria present.

QUARTERLY PROGRESS REPORT- OPERATIONS/MAINTENANCE

Robert Clark presented the Operations/Maintenance quarterly progress report to the Board. He stated that Stafford Treatment Plant operations continued through November, resulting in a production total of 1,089AF. He noted that Stafford Lake elevation at the end of the period was 195.7 feet and the lake spilled on January 3, 2013.

Mr. Clark said that the Novato water system flows are about the same as the year before, and staff is planning to flush Zone 1(0-60 feet elevation). He stated that the flows in Pt. Reyes are the same as the year before; and in Oceana Marin, Phillips Associates continue good performance of operations and maintenance tasks. He said that the freeboard in Oceana Marin ponds was reduced to 3.7 feet at the end of December and is now at 4.5 feet.

Mr. Clark stated that Recycled Water program has had a lot of activity with the North and South systems starting up. He noted that there are two existing sites in the north, Stone Tree Golf Course and Novato Fire Station on Atherton and seven new customers: Green Point Nursery, Tranquility Home Owners Association, Olive School (Novato Unified School District), Hamann Field (City of Novato), Wood Hollow, and Redwood Crossroads. Las Gallinas Valley Sanitary District recycled water plant produced water for four Meadow Park Home Owners Association sites in the south.

Mr. Clark stated that the Maintenance Department has been using temporary labor to help with cross connection control, and the Electrical/Mechanical department has completed the work on solar-powered controls at both Reservoir Hill and Plum Street Recycled Water tanks. He noted that the Electrical/Mechanical staff has worked with the auto mechanic on the installation of a 2-phase electrical circuit for the 20-amp welder in the shop.

Mr. Clark informed the Board that a draft revision for the District's Regulation 6 (Cross-Connection Control) was initiated and is under review by District staff at this time. He noted that the proposed revisions are expected to be ready for the Board to consider in April. Mr. Clark informed the Board that Joe Cilia was a key person in working with the STRAW project his year, and he

learned new techniques to install plants in and around the facilities and has been doing tank site rehabilitation.

2013 URBAN AREA WATER COST COMPARISON

Mr. Bentley provided the Board with the 2013 Urban Area Water Cost Comparison. He stated that the District has moved up two positions from one year ago and is one position below the median. He noted that the annual cost of water is $586 per year for the median Novato single family residential customer. Mr. Bentley stated that the District's bi-monthly service charge is $25 and the median is $29. He noted that Alameda County doubled their bi-monthly service charge in a single year whereas the District raised its service charge $5 incrementally over three years.

MISCELLANEOUS:

The Board received the following miscellaneous information: Disbursements, Bimonthly Service Charge Analysis, Claim Resolution- 5 Sutton Lane, and Reception with local elected officials.

Director Baker commended Mr. Bentley and Doug Moore for the job well done on the Jonsen Claim.

Director Rodoni thanked Mr. Bentley for looking at the monthly service charge and asked if the District shouldn't adjust the larger meter size charge if the District is generating more revenue than they cost. Mr. Bentley responded that the District has looked at other agencies for charges and most agencies are all over the board with some based on the volume of water delivered. He noted that the District has been increasing the meter service charge across the board for many years.

ADJOURNMENT

Vice President Rodoni adjourned the meeting at 8:20 p.m.

Submitted by

Katie Young
District Secretary

MEMORANDUM

To: Board of Directors April 13, 2012

From: Robert Clark, Operations / Maintenance Superintendent RC

Subject: April 2012 Vehicle / Equipment Auction Request
X:\MAINT SUP\2013\BOD\BOD Memo Vehicle Auction 313.doc

RECOMMENDED ACTION: Approve disposal of surplus equipment

FINANCIAL IMPACT: $6,500 income (estimated)

In the FY 12/13 budget, staff identified trucks #35, #45 and #46 along with compressor #74 going to auction after the new equipment was received. We can expect to recover at least some revenue to offset our new equipment purchase expenses at auction.

Miscellaneous equipment that is no longer in use may still have value at auction. Staff recommends the disposal of the BS62Y Wacker Compactor, 10hp gas 4500w Generator, 2 Clay diggers, 4 Ball Tampers and the Speedair 220v Air Compressor all of which may run and work to a certain extent but are old and worn and maintenance repair costs are not practical when compared to replacements.

Staff has researched the current value for the surplus equipment listed below and believes that we can sell them through 1st Capitol Auction, a bonded resale agent located in Vallejo. This will be the forth year we have sold equipment through this vendor.

The following equipment is proposed to be sold at auction:

Equip. No.	Description
• #36	1999 Ford F250 with Service Body (182,224 miles)
• #45	2002 Dodge Dakota (124,955 miles)
• #46	2002 Chevy W3500 with Service Body (113,915 miles)
• #74	2003 Sullair 185 CFM Air Compressor (1,671 hours)
•	BS62Y Wacker Compactor (19 years old)
•	10hp gas 4500w Generator (33 years old)
•	2 Clay diggers (27 & 29 years old)
•	4 Ball Tampers (all 30+ years old)
•	Speedair 220v Air Compressor (21 years old)

Recommendation

Authorize the General Manager to enter into a sales contract with 1st Capitol Auction to dispose of the surplus equipment.

Approved by GM GD

Date 3/1/2013

MEMORANDUM

To: Board of Directors March 1, 2013

From: Drew McIntyre, Chief Engineer
Ryan Grisso, Water Conservation Coordinator RG

Re: Contract Amendment for Russell D. Mitchell and Associates
R:\RECYCLED WATER\Onsite Retrofit Project\RMA Agreement\RMA contract amendment BOD memo 03-13.doc

RECOMMENDATION: That the Board authorize the General Manager to execute an amendment to the Consulting Services Agreement with Russell D. Mitchell and Associates.

FINANCIAL IMPACT: $10,000

BACKGROUND

At the February 7, 2012 meeting, the Board authorized an Agreement between the District and Russell D. Mitchell and Associates for the Recycled Water Onsite Retrofit Design - Task 2 for a not-to-exceed fee of $112,000, plus a contingency of $15,000. The Task 2 work includes on-site irrigation system retrofit design for 18 sites in both the North and South Recycled Water Service Areas.

A cost breakdown for the $127,000 contract (including the $15,000 contingency) is summarized as follows:

Starting Contract Amount	$112,000
Amendment 1 (Additional Onsite Retrofit Design Work for North Service Area)	$2,000
Amendment 2 (Additional Onsite Retrofit Design Work for South Service Area)	$12,000
Total Authorized	$127,000
Billings to date	
Original Scope	<$112,000>
Amendment 1	<$2,000>
Amendment 2	<$9,500>
Remaining Balance on Contract	$3,500

EXPENDITURES

Expenditures authorized to-date are estimated to total $123,500 leaving a balance of $3,500 on the contract. Although the contract amount has not been completely expended, the remaining balance is expected to be expended for additional retrofit design work. Additional out of scope work, including onsite retrofit bid phase and construction support services, make a contract amendment necessary.

RECOMMENDATION

That the Board authorize the General Manager to execute an amendment to the Consulting Services Agreement with Russell D. Mitchell and Associates in the amount of $10,000.

Approved by GM

Date 3/1/2013

MEMORANDUM

TO: Board of Directors March 1, 2013

FROM: Drew McIntyre, Chief Engineer
Ryan Grisso, Water Conservation Coordinator RG

RE: Recycled Water South Phase 2 - Public Outreach Update
\\nmwdsrv1\engineering\Folders by Job No\6000 jobs\6056\Board Memos\Data Instincts Public Outreach UPDATE BOD Memo 03-05.doc

RECOMMENDED ACTION: Information

FINANCIAL IMPACT: None

Background

At the November 5, 2012 Board meeting, the General Manager provided an update on the Recycled Water South Service Area construction and recommended that the Board consider a contract for public outreach in response to upcoming construction associated with the Phase 2 construction project. At the November 20, 2012 Board meeting, an agreement was approved by the Board to hire Data Instincts to implement an outreach program for an amount not to exceed $40,000.

Public Outreach for Recycled Water South Service Area Project Update

Data Instincts initiated work in December 2012, in a meeting with District staff to plan and organize the outreach approach and campaign. Data Instincts gathered information from NMWD staff and evaluated NMWD's current outreach materials and the current level of outreach in the Hamilton Field area regarding recycled water expansion. In mid December, Data Instincts developed an outreach approach/campaign and outreach materials, and began implementation. Initially, Data Instincts went out in the community and met with key stakeholders in the project area. This included meetings with officials at schools along the construction path (Hamilton Elementary School and Novato Charter School), home owner's association (HOA) property managers and board members, and the manager of the Coast Guard Housing and the Coast Guard Pacific Strike Team Facility. A flyer (Attachment 1) was developed to distribute to customers and businesses affected in the project area during these meetings. The flyer included a summary of the construction project, affected roadways, a detailed map of the construction zone, and advised interested residents and businesses on how to stay informed. The flyer was also translated in Spanish at the request of the Hamilton Elementary School Principal. The flyer was distributed to each school administrator and emailed to the school's email broadcast list, and distributed as a door hanger in directly affected areas (notably to Lanham Village HOA residents who's points of entry and exit were affected by the initial construction). As the construction moves along, Data Instincts will continue to distribute the flyer to affected areas.

A contact list of affected customers and businesses was also assembled to distribute a weekly email (samples included as Attachment 2), advising recipients of the upcoming week's construction zone and any roadway disruptions that might occur. This email has been sent out weekly on Friday afternoon to over 200 recipients. A dedicate phone line and email was created to answer any inquiries regarding the project or in response to any of the outreach materials. To date, Data Instincts has received and responded to one email and one phone inquiry regarding project concerns, both of which received immediate responses. Data Instincts also received numerous complimentary emails in response to the email notification including one from the Lanham Village HOA president and the Hamilton School Principal. Data Instincts also made contacts with local media outlets and helped to coordinate five articles published in the local newspapers regarding the project. The following table (Table 1) contains a summary of the outreach as a result of the Data Instincts work in the Hamilton area.

Table 1: Outreach Results Summary

# of Email Recipients	210
# of Email Blasts Distributed	8
# of Responses for Project Concerns	2
# of Positive Responses Received	2
# of Flyers Distributed	200
# of Articles in Marin IJ	5

Data Instincts continues to attend the regular construction meetings and uses information from the meetings to update outreach materials for distribution to the public and also advises the construction manager and project engineer of customer and business feedback received as a result of the outreach campaign.

Project Cost Update

Data Instincts has expended $13,425 of the authorized $40,000, for the work completed to date. There was some extra work authorized for the Spanish translation of the flyer, however, staff expects a decrease in monthly Data Instincts' expenses moving forward. Consequently, overall project costs are expected to be at or below budget.

NORTH MARIN WATER DISTRICT

NOVATO RECYCLED WATER PROGRAM

www.nmwd.com Winter 2013

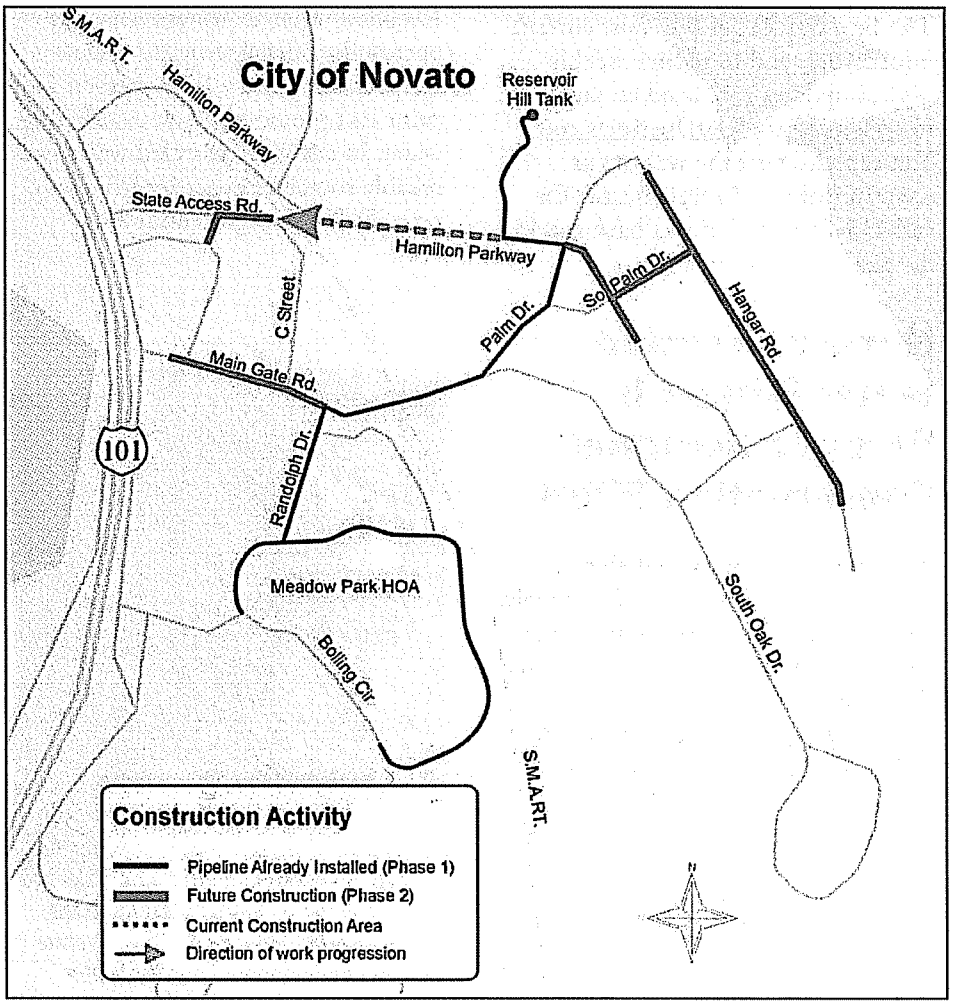
Recycled Water Program Phase 2

Construction to Begin in January

The next phase of the Novato Recycled Water Program will get under way in early January, 2013. Construction of North Marin Water District's (NMWD) South Service Area Phase 2 will take place in the Hamilton area. Phase 1 pipeline installation was completed in the fall of 2012.

Phase 2 involves installation of nearly 9,000 feet of 8-inch and 12-inch pipeline that will distribute recycled water to irrigate a variety of locations, including turf fields at Hamilton Elementary School, Amphitheater Park and South Hamilton Park. In addition, it will be used at homeowners association common area landscaping and street medians. The construction contract for Phase 2 pipeline installation was awarded to Argonaut Constructors of Santa Rosa.

In early January, residents will see work crews conducting surveys and marking the location of underground utilities. Following that, you can expect to see construction equipment and materials being assembled. Once construction begins, there will be signs, barricades and construction cones that clearly identify the construction zones as work progresses along affected streets.



Construction of Phase 2 of the recycled water project in the Hamilton area will start at the intersection of State Access Road and C Street (dashed green line).

Affected Roadways

Construction hours will be from 8 AM to 5 PM weekdays only. During the course of the project, construction will occur on the following streets: Hamilton Parkway, Hangar Avenue, Lanham Drive, Main Gate Road, Martin Drive, Hamilton Parkway, So. Palm Drive and State Access Road.

Roadway excavation for recycled water pipeline work is expected to get under way the week of January 14, 2013 at the intersection of State Access Road and C Street. Excavation will also start on Hamilton Parkway near Sunny Cove Drive and proceed west. During certain times, traffic will be limited to one lane and flaggers will be present to direct traffic in one direction at a time. Please allow for brief delays when driving through construction zones or consider alternate routes when possible. The contractor will make every effort to minimize waiting times. It is expected that project construction will continue through June of 2013. Thank you for your patience during this period.

How to Stay Informed about Construction Activity

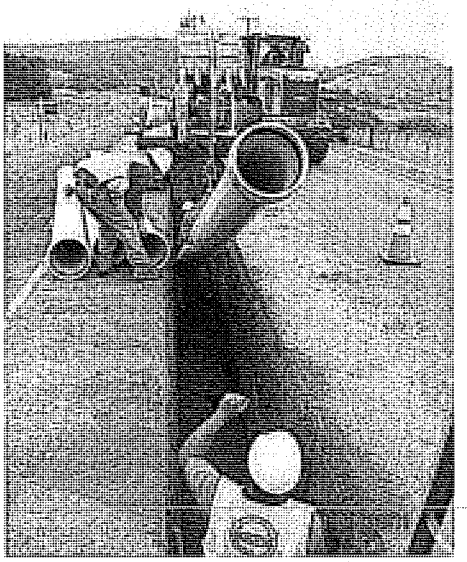
NMWD wants to make it easy for residents and businesses to stay informed about construction activity. The best way to get the most current information and to receive weekly project updates is to send an email to construction@DataInstincts.com. You can also visit the website at www.nmwd.com/recycledwater. Or call 415-246-5570 if you have specific questions or concerns.

Novato Recycled Water Project is Part of a Regional Conservation Effort

Novato relies on imported Russian River water for 80 percent of its supply, but this source has been impacted by changed conditions to protect fish and the environment. Along with its aggressive and successful water conservation program, NMWD has begun using recycled water for landscape irrigation as another source of water.

NMWD's recycled water project is part of a regional effort in collaboration with the Novato Sanitary District and Las Gallinas Valley Sanitary District. Highly treated recycled water that meets strict health and safety standards (set by federal, state and local health authorities) will be used to irrigate playing fields, golf courses and landscaped areas.

Using recycled water has many benefits. Recycled water treatment uses less energy than developing other new water sources, has a lower carbon footprint and preserves precious drinking water. In addition, recycled water is a reliable source of water for irrigation, even during drought conditions.



In 2011, construction workers installed recycled water pipeline on Olive Avenue as part of the Novato Recycled Water Program in the North Service Area.

Frequently Asked Questions

What is recycled water and how is it produced?
Recycled water is a safe, effective and reliable new water supply that is available to help meet the future water supply needs of our community. Recycled water is highly polished wastewater treated to tertiary recycled water standards (also referred to as advanced water treatment) which is the highest level of treatment defined by the State of California. This level of treatment allows for unrestricted reuse in all recycled water applications. Recycled water goes through four treatment steps: primary treatment, biological treatment (secondary), filtration, and disinfection (tertiary).

What is the quality of recycled water?
The recycled water in the NMWD project will be of the highest quality and meets strict federal, state and county health and safety requirements. Recycled water is used in thousands of applications in sites throughout California and the U.S.

How can I be assured of the quality and safe delivery?
Recycled water treatment is monitored continuously and tested in a certified laboratory daily. The recycled water delivery pipes NMWD will be constructing are completely separate from those delivering drinking water. NMWD will ensure that no cross connections occur between the two systems.

For more FAQs, visit www.nmwd.com

Where can I get more information about recycled water?

Novato Recycled Water Program: **www.nmwd.com**

Calif. Department of Public Health – Recycled Water: Regulations & Guidance: **www.cdph.ca.gov/certlic/drinkingwater/Pages/Lawbook.aspx**

U.S. Environmental Protection Agency – 2012 Guidelines for Water Reuse: **www.epa.gov/region9/water/recycling/pdf/water-reuse-guidelines-fact-sheet-2012.pdf**

A Thirsty Planet: **www.athirstyplanet.com**

NORTH MARIN WATER DISTRICT

999 Rush Creek Place / P.O. Box 146
Novato, CA 94948 • (415) 897-4133
Construction questions: (415) 246-5570
www.nmwd.com/recycledwater
construction@DataInstincts.com

Ryan Grisso

From: Lisa Petker [lisa@datainstincts.com]
Sent: Friday, February 01, 2013 12:18 PM
To: Lisa Petker
Subject: Novato Recycled Water Program Construction Update, 2.1.13

Novato Recycled Water Program Construction Update
Friday, February 1, 2013

Work on Phase 2 of North Marin Water District's Recycled Water Project will continue next week in the Hamilton area of Novato.

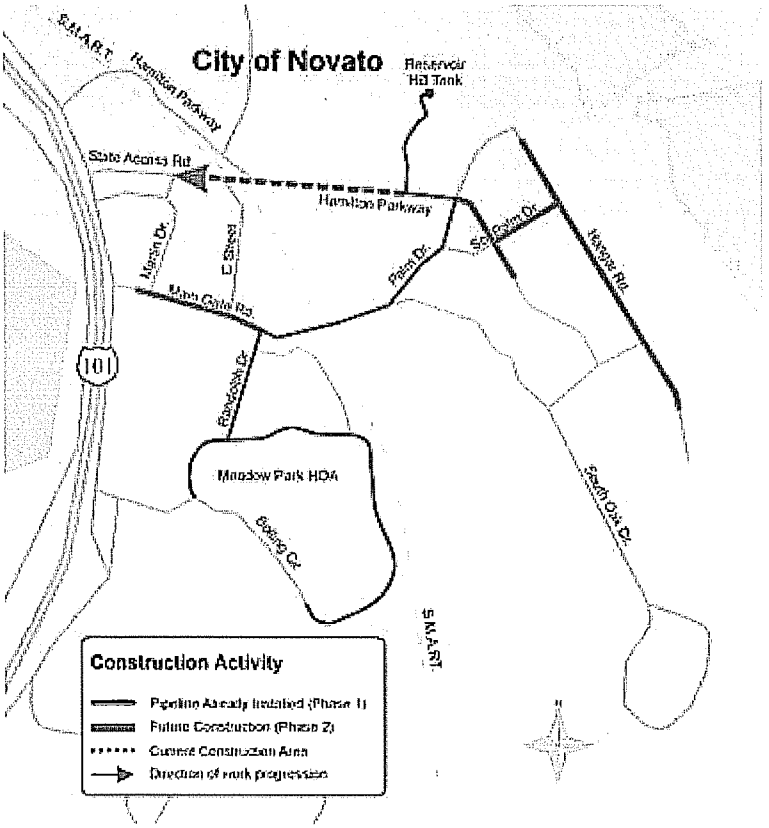
Mainline trenching on Hamilton Parkway is expected to finish this week (Feb. 1) and crews will be wrapping up incidental items next week in the area.

Crews will begin trenching work next week (Feb. 4-8) on State Access Road near the intersection of C Street. Work on that segment of pipeline, which will take about six days, will progress from C Street west on State Access Road to Lanham Drive.

Plans for the pipeline to continue on Lanham Drive to Martin have been revised and there will be no excavation work on Lanham Drive at this time.

In the coming weeks, crews will be moving to the section of work on Main Gate Road. In order to minimize the traffic impacts during school hours, the contractor plans to start work on Main Gate Road on Feb. 15 and continue through Feb. 22 to coincide with the days school will not be in session for Mid-Winter Break.

There may be times when traffic could be limited to one lane and flaggers will be present to direct traffic in one direction at a time. Please allow for brief delays when driving through construction zones.



ATTACHMENT 2

Ryan Grisso

From: Lisa Petker [lisa@datainstincts.com]
Sent: Friday, February 22, 2013 3:24 PM
To: Lisa Petker
Subject: Novato Recycled Water Program Construction Update 2/22/13

Novato Recycled Water Program Construction Update
February 22, 2013

Mainline trenching for the recycled water pipeline will continue next week, Feb. 25-March 1, on Main Gate Road between Randolph Drive and Martin Drive.

The contractor had originally hoped to complete work on Main Gate Road this week, but unforeseen circumstances and weather have delayed progress on the excavation. Solid rock discovered in the area being trenched has slowed work considerably.

Traffic will be limited to one lane at times along Main Gate Road, and motorists should expect minor delays.

With school resuming Feb. 25 following the Mid-Winter Break, motorists are encouraged to avoid this area when possible, particularly during drop-off hours in the morning and afternoon. During the next week, residents and employees of businesses may want to use Hamilton Parkway to exit the Hamilton area in order to avoid any traffic delays on Main Gate Road.

Looking ahead, crews are expected to start surveying work and locating utility lines on Hangar Avenue in the coming weeks. Pipeline trenching on Hangar Avenue is expected to get under way the week of March 4.

There will be times when traffic will be limited to one lane and flaggers will be present to direct traffic in one direction at a time. Please allow for brief delays when driving through construction zones.

If you have questions or concerns about construction activities, please give me a call at 415-246-5570.

For more information about the Novato Recycled Water Program, please visit: www.nmwd.com/recycledwater. If you'd like to have Project Updates emailed to you, please send an email to construction@DataInstincts.com

If you do not wish to receive emailed updates, you may unsubscribe by emailing and typing "Unsubscribe" in the subject line.

Thank you for your cooperation and patience,

Barry Dugan
Project Information Coordinator
415.246.5570

MEMORANDUM

To: Board of Directors March 1, 2013

From: Drew McIntyre, Chief Engineer

Subject: North Bay Water Reuse Authority Board Meeting – January 28, 2013
R:\Folders by Job No\7000 jobs\7127\Board Memos\7127 NBRWA Update 3_5_13.doc

RECOMMENDED ACTION: Information Only

FINANCIAL IMPACT: None

Agenda attached.

The draft minutes from the above referenced meeting are provided in Attachment 1. Prior to the NBWRA Board meeting Workshop No. 1 for the Phase 2 Scoping Study was held (see handout in Attachment 2). There were very few comments related to this Workshop and the Board gave no direction to TAC or the consultant team as a result of said workshop. Supplemental information is provided as follows using item numbers referenced in the meeting minutes.

5. Election of Officers.

The Memorandum of Understanding (MOU) states that the NBWRA Board of Directors shall elect a Chair and Vice Chair on an annual basis. Sonoma County Supervisor David Rabbitt (SCWA), past Vice Chair, was elected as Chair and Novato Sanitary District Director Bill Long was elected as Vice Chair. The 2013 membership of the Board includes the following:

Agency	Director	Alternate
Napa County	Keith Caldwell	Bill Dodd
SCWA	David Rabbitt (Chair)	Mike McGuire
LGVSD	Megan Clark	Judy Schriebman
NSD	Bill Long (Vice Chair)	Mike DiGiorgio
Napa Sanitation District	Jill Techel	TBD
NMWD	John Schoonover	Jack Baker
SVCSD	Susan Gorin	Shirlee Zane
MMWD	Jack Gibson	Larry Russell
City of Petaluma	TBD	TBD

The 2013 NBWRA Board membership is very similar to 2012 however, it should be noted that Sonoma County Supervisor Susan Gorin (past Councilwoman for City of Santa Rosa) is now a NBWRA Board member representing Sonoma Valley County Sanitation District.

9. Financial Report for Period Ending December 31, 2012.

There are no cost variances to report based upon this summary through December 31, 2012.

10. FY2013/14 Budget, Cost Allocations and Scopes of Work.

It was anticipated that the Board would approve the FY2013/14 budget and scopes of work. However, one of the member agencies requested postponement until the March 25, 2013

meeting. As reported to the NMWD Board during the last NBWRA update, NMWD's annual cost is expected to decrease from $102,541 (FY2012/13) to $94,969 when the FY2013/14 budget is approved.

12. Status Report Memorandum of Understanding Revisions Process.

NBWRA's TAC MOU subcommittee (of which I am a member), has met three times since November 2012 and reviewed five modified versions of the Third Amended MOU. The subcommittee has presented the Draft MOU to the TAC and the TAC has approved all changes including:

- Adding a non-voting Associate Member
- Incorporating new members for Phase 2
- Clarified voting procedures
- Specifically identifying Phase 1 and Phase 2 participants
- Add a new definition to reflect current budget and cost sharing practices
- Clarified initiation of membership, including the initiation fee calculation and methodology
- Clarified termination of membership
- Extended MOU from three years to five years.

The MOU is being reviewed by member agencies and attorneys and all comments are expected to be returned to the Program Manager by March 1, 2013. It is hoped that the final MOU will be presented to the Board for approval at the March 25, 2013 meeting.

13. Federal Funding Update.

During February 10 -12, 2013, Ginger Bryant, Federal Program Development Coordinator, as well as Supervisor Rabbitt and Renee Weber (SCWA) travelled to Washington DC as part of a series of smaller trips in support of NBWRA's Phase 1 and Phase 2 funding requests. The primary purpose of the visit was to have discussions on proposed legislation related to adding a new US Bureau of Reclamation (USBR) grant program under WaterSMART that would allow

1. For previously authorized Title XVI projects to develop storage to maximize both project yield and the value of the federal dollars invested and,
2. Create a USBR loan program to construct previously authorized projects.

In addition to the above, the NBWRA team continued to encourage USBR to increase funding levels for WaterSMART feasibility grants.

14. State Funding Update.

NBWRA State lobbyist, Pilar Onate-Quintana, organized a visit to Sacramento during Legislative Day on February 20, 2013. NBWRA participants included NBWRA Board members Susan Gorin, David Rabbitt, and Bill Long.

North Bay Water Reuse Authority
Board of Directors Meeting
Minutes
January 28, 2013

1. Call to Order

Chair Caldwell called the meeting to order at 10:50 a.m. on Monday, January 28, 2013 at the Novato City Hall Council Chambers, 901 Sherman Street, Novato, CA 94945.

2. Roll Call

PRESENT: Keith Caldwell, Chair, Napa County
David Rabbitt, Vice-Chair, Sonoma County Water Agency
Megan Clark, Las Gallinas Valley Sanitary District
Susan Gorin, Sonoma Valley County Sanitation District
Bill Long, Novato Sanitary District
John Schoonover, North Marin Water District
Jill Techel, Napa Sanitation District
Jack Gibson, Marin Municipal Water District
Dan St. John, City of Petaluma

ABSENT: None

OTHERS PRESENT:

Chuck Weir, Program Manager	Weir Technical Services
Judy Arnold	Marin County
Make Ban	Marin Municipal Water District
Marc Bautista	Sonoma County Water Agency
Ginger Bryant	Bryant & Associates
Tracy Clay	Marin County
Mike DiGiorgio	Novato Sanitary District
Tim Healy	Napa Sanitation District
Beverly James	Novato Sanitary District
Sandeep Karkal	Novato Sanitary District
Liz Lewis	Marin County
Andria Loutsch	CDM Smith
Jean Mariani	Novato Sanitary District
Susan McGuire	Las Gallinas Valley Sanitary District
Drew McIntyre	North Marin Water District
Mark Millan	Data Instincts
Phillip Miller	Napa County
Michael Savage	Brown & Caldwell
Judy Schriebman	Las Gallinas Valley Sanitary District
Paul Sellier	Marin Municipal Water District
Jeff Tucker	Napa Sanitation District

ATTACHMENT 1

3. Public Comment
No members of the public addressed the Board

4. Introductions
Introductions were waived.

5. Election of Officers
A motion by Director Techel, seconded by Director Long to elect Director Rabbit as Chair for calendar year 2013 was unanimously approved. Chair Rabbit thanked past Chair Caldwell for his services and ran the meeting from this point forward. A motion by Director Schoonover, seconded by Director Clark to elect Director Long as Vice Chair for calendar year2013 was unanimously approved.

Following discussion, the Board agreed to move the March meeting to March 25, 2013 to avoid the conflict with the WateReuse conference in Monterey.

6. Direction to TAC and Consultant Team based on Board and TAC Phase 2 Scoping Study Workshop #1
There were no items that required direction to the TAC and consultant team.

7. Board Meeting Minutes of November 19, 2912
A motion by Director Schoonover, seconded by Director Gorin to approve the November 19, 2012 minutes as presented was approved with Directors Gorin and Clark abstaining.

8. Report from the Program Manager
8.a Consultant Progress Reports
The Board reviewed the consultant progress reports for December 2012.

9. Financial Report for the Period Ending December 31, 2012
The Board reviewed the summary of consultant costs through the period ending December 31, 2012 and noted that all costs were on track. The Program Manager noted that a more detailed report, including member agency balances would be presented at the March 25, 2013 meeting.

10. FY2013/14 Budget, Cost Allocations, and Scopes of Work
The Program Manager recommended that this item be continued to the March 25, 2013 meeting since not all agencies have completed their budget approval for FY2013/14. A motion by director Schoonover, seconded by Director Long to continue this item to the March 25, 2013 meeting was unanimously approved.

11. Title XVI Projects and Schedule Updates
The Board noted that all projects are proceeding on schedule.

12. Status Report – Memorandum of Understanding Revisions Process
The Program Manager noted that all issues have been resolved by the TAC MOU Subcommittee and that the revised MOU is ready to be sent to the member agency attorneys for review. A final revised MOU could be presented to the Board for approval at the March 25, 2013 meeting.

13. Federal Funding Update
Ginger Bryant provided an update for the Board.

14. State Funding Update
The planned Legislative Day in Sacramento is February 20, 2013.

15. EIR/EIS Issues Update
There were no updates and no questions from the Board.

16. Outreach Program Update
Mark Millan updated the Board on outreach efforts, including an article that will be published in the Farm Bureau newsletter.

17. Adjournment
Chair Rabbitt adjourned the meeting at 11:04 a.m.

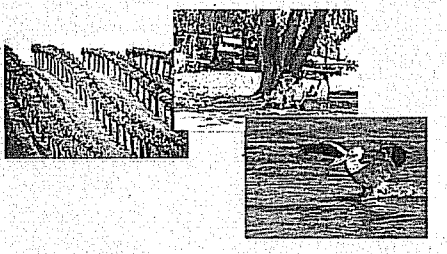
Minutes approved by the Board on _____, 2013.

Charles V. Weir
Program Manager

C:\Users\Chuck\Documents\Weir Technical Services\NBWRA\Agendas\2013-01\2013_01_28_NBWRA_Board_Minutes.docx

NBWRP Phase 2 Scoping Study
Workshop #1

January 28, 2013



NORTH BAY WATER REUSE PROGRAM
Water Supply Reliability through Regional Reuse

Study Objectives

Identify alternatives for inclusion in the Phase 2 "Feasibility Study"[1]

- Define projects to meet multiple objectives of water supply for urban, agriculture, environmental benefits and integrated regional water management
- Develop storage options that support the Program's multiple objectives
- Apply decision process to support evaluation of projects

Different objectives:

- *Study objectives* must address future implementation opportunities & constraints to make project decisions
- *Program objectives* in the MOU can be less specific to meet agency objectives

1. Feasibility Study: a specific Federal planning document required to receive Phase 2 construction funds

NORTH BAY WATER REUSE PROGRAM
Water Supply Reliability through Regional Reuse

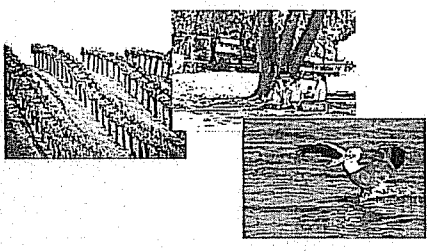
Workshop 1 Objectives

- Present study work plan
  - Technical tasks
  - Workshops
  - Schedule
  - Decision points
  - End product
- Refine objectives & criteria for Phase 2 projects
  - Identify what is important
  - Initiate process to screen
- Confirm understanding of work plan & outcomes

NORTH BAY WATER REUSE PROGRAM
Water Supply Reliability through Regional Reuse

Work Plan

How we implement the study scope of work

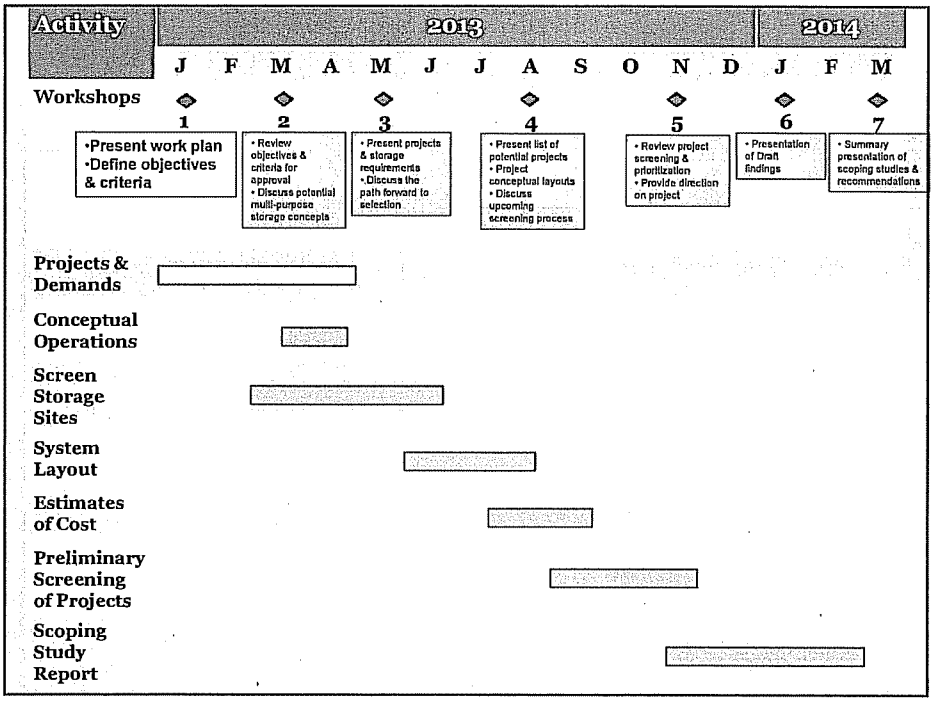


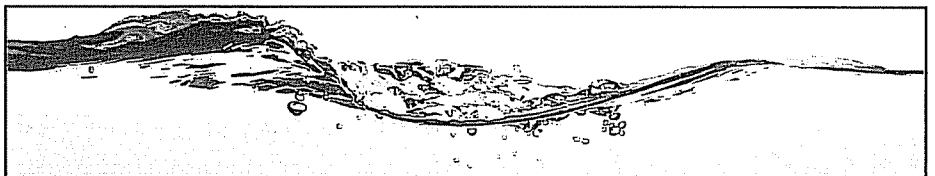
NORTH BAY WATER REUSE PROGRAM
Water Supply Reliability through Regional Reuse

Scoping Study Technical Tasks

- **Projects & demands (agency meetings)**
  - Refine identified projects & include new projects
- **Conceptual operations**
  - Given the supplies & demands, how much storage is needed (seasonal & annual)
- **Screen storage sites**
  - Opportunities & constraints
- **System layout**
- **Estimates of cost**
- **Preliminary screening of alternatives**
  - Agency and subregional projects
- **Scoping Study Report**

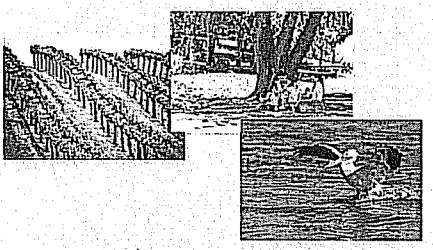
NORTH BAY WATER REUSE PROGRAM
Water Supply Reliability through Regional Reuse





Phase 2 Objectives

How do we screen & prioritize projects?



NORTH BAY WATER REUSE PROGRAM
Water Supply Reliability through Regional Reuse

Why Focus on Objectives From the Start?

- Ultimately the objectives will provide insight to the Board & TAC as to what projects should proceed to feasibility study
- Objectives provide the framework on how we *formulate* alternatives
  - Keeps analysis focused on what is important
  - Guides how we combine opportunities for maximum benefit
- Objectives define how we *evaluate* the alternatives
  - Versus each other
  - Versus "avoided" alternatives (i.e., alternatives to recycling)
- Objectives must be clear & how success is measured must be defined

NORTH BAY WATER REUSE PROGRAM
Water Supply Reliability through Regional Reuse

There are Many Potential Projects to Screen

- Started with list of projects from the Phase 2 Project Definition Study
- Additions and deletions since agency meetings have occurred
- List is being expanded & refined to include the broadest number of projects that will then be screened down
- The first action is to agree on the wide range of potential projects and concepts before we filter the list

NORTH BAY WATER REUSE PROGRAM
Water Supply Reliability through Regional Reuse

Definitions

Objective	The goals that define the purposes in broad terms – Why?
Sub Objective	Further define the meaning of the planning objectives, more specific
Performance Measures	Quantifiable indicators of how well an alternative meets the objectives – How well?

NORTH BAY WATER REUSE PROGRAM
Water Supply Reliability through Regional Reuse

Phase 1 Study Objectives[1]

- Offset urban and agricultural demands on potable water supplies
- Enhance local and regional ecosystems
- Improve local and regional water supply reliability
- Maintain and protect public health and safety
- Promote sustainable practices
- Give top priority to local needs for recycled water
- Implement recycled water facilities in an economically viable manner

[1] From Phase 1 EIR/EIS

NORTH BAY WATER REUSE PROGRAM
Water Supply Reliability through Regional Reuse

Objectives From Other Perspectives

- What will make our program attractive to funding agencies?
  - U.S. Bureau of Reclamation funding criteria
  - California IRWMP ranking criteria
  - Potential new state and federal funding programs
- What will make our program reflective of community values & supported by elected officials?
- These "other perspectives" can significantly affect the ability to implement projects

NORTH BAY WATER REUSE PROGRAM
Water Supply Reliability through Regional Reuse

Comparison of Objectives & Criteria

Phase 1 Study	Bureau of Reclamation	IRWMP
Offset urban and agricultural demands on potable water supplies	Increase water supplies and reduce demand on non-recycled water supplies	Address multiple goals
Improve local and regional water supply reliability	Address water supply sustainability	Integrate multiple resource management strategies
Give top priority to local needs for recycled water	Complete authorized Title XVI projects	Strategic considerations for IRWM Plan implementation (regionalism, partnerships and integration)
Enhance local and regional ecosystems	Promote projects that are ready to proceed	Project status
Maintain and protect public health and safety	Improve habitat and water quality	Technical feasibility
Promote sustainable practices	Incorporate use of renewable energy and promote energy efficiency	Benefits to disadvantaged community water issues
Implement recycled water facilities in an economically viable manner	Implement cost effective projects	Benefits to Native American tribal community water issues
	Meet legal and contractual water supply obligations	Environmental justice considerations
	Provide benefits to rural or economically disadvantaged communities	Project costs and financing
	Promote a watershed perspective/integrated resources management	Economic feasibility
		Climate change adaptation
		Reduce greenhouse gas emissions
		Reduce dependence on the Delta

NORTH BAY WATER REUSE PROGRAM
Water Supply Reliability through Regional Reuse

Illustration of Future Activities & Process

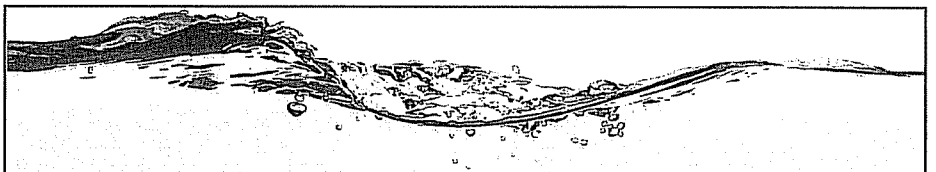
Objective	Subobjective	Performance Measures
Offset urban and agricultural demands on potable water supplies	Reduce use of imported water	AF of imported water not used
	Reduce use of local groundwater	AF of groundwater not used
Improve local and regional water supply reliability	Meet peak period water demands	Meet peak month water demands
	Meet annual water needs	Improvement in water supply through all periods (i.e., wet, dry, average years)
Give top priority to local needs for recycled water		Serve local agency service area first
		Serve local county first
		Minimize effluent discharge to non-recovery water bodies
Enhance local and regional ecosystems	Improve riparian habitat	Acres of habitat
	Improve wetland habitat	Acres of habitat at critical lifecycle
	Improve anadramous fish	Instream flows at critical lifecycles
Maintain and protect public health and safety	Meet water quality standards to match use	Yes or no
Promote sustainable practices	Reduce energy usage	Alternative with lower kilowatt per AF of recycled water used
	Avoided energy usage	Most energy offset when not using alternative water supplies (e.g., imported water pumping, groundwater pumping)
Implement recycled water facilities in an economically viable manner	Minimize agency cost	Lowest cost project per acre-foot to construct
	Maximize net benefit	Most cost effective project to meet water supply and effluent management as compared to alternative water supply and wastewater effluent management

NORTH BAY WATER REUSE PROGRAM
Water Supply Reliability through Regional Reuse

Workshop 1 Discussion
Time for Your Input

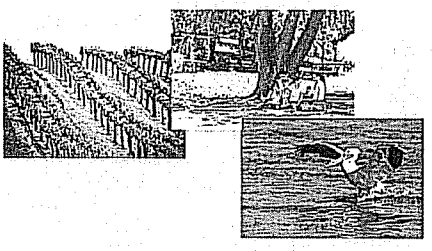
- Do Phase 1 objectives meet Phase 2 study needs?
- Do we need to add new objectives to address program & funding criteria?
- Are there subobjectives that need to be defined?

NORTH BAY WATER REUSE PROGRAM
Water Supply Reliability through Regional Reuse

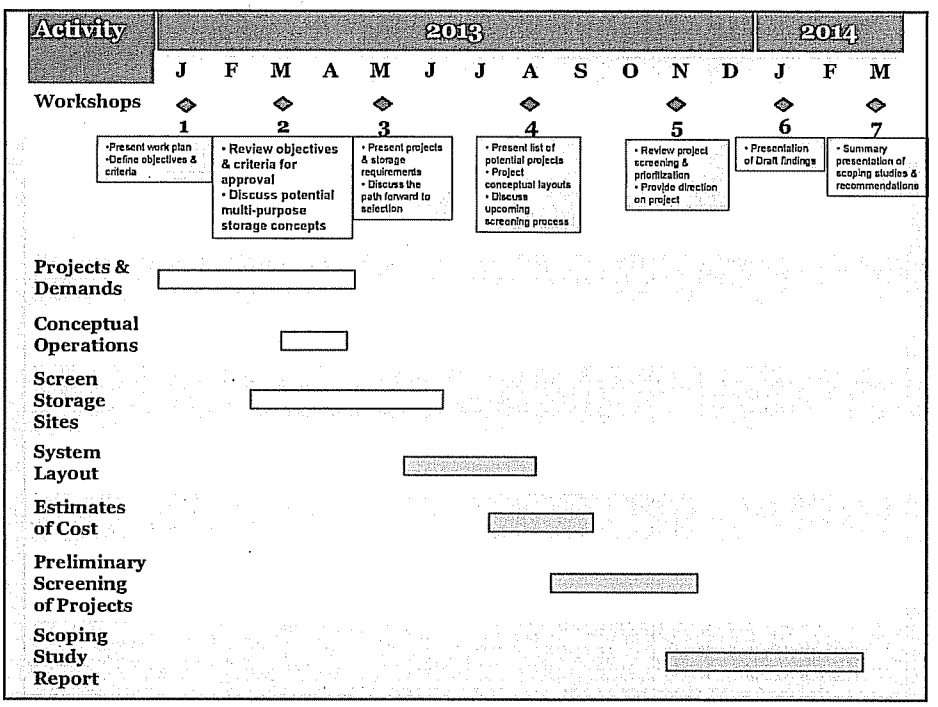


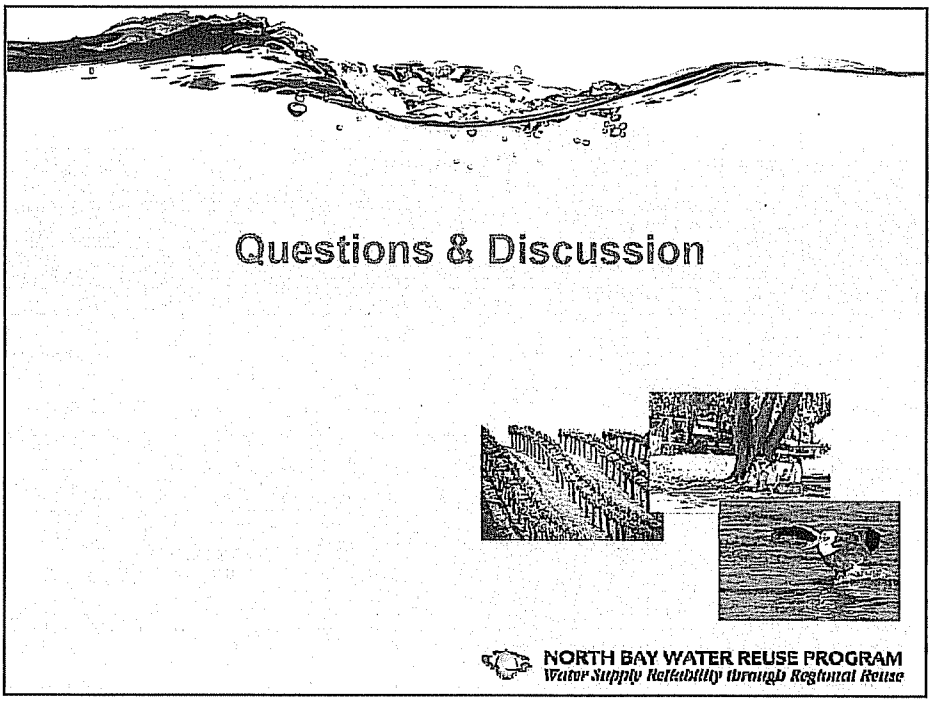
Future Activities

What will we do at the next Workshop?



NORTH BAY WATER REUSE PROGRAM
Water Supply Reliability through Regional Reuse


Activity
2013
2014
J F M A M J J A S O N D J F M
Workshops
1
2
3
4
5
6
7
•Present work plan
•Define objectives & criteria
• Review objectives & criteria for approval
• Discuss potential multi-purpose storage concepts
• Present projects & storage requirements
• Discuss the path forward to selection
• Present list of potential projects
• Project conceptual layouts
• Discuss upcoming screening process
• Review project screening & prioritization
• Provide direction on project
• Presentation of Draft findings
• Summary presentation of scoping studies & recommendations
Projects & Demands
Conceptual Operations
Screen Storage Sites
System Layout
Estimates of Cost
Preliminary Screening of Projects
Scoping Study Report


Questions & Discussion
NORTH BAY WATER REUSE PROGRAM
Water Supply Reliability through Regional Reuse

MEMORANDUM

To: Board of Directors March 1, 2013

From: Chris DeGabriele, General Manager CD

Subject: Amended North Marin Water District Lagunitas Creek Water Rights
t:\gm\west marin\water rights\bod memo re petition for chg 0313.doc

RECOMMENDED ACTION: Information

FINANCIAL IMPACT: None

Attached are the Amended Water Rights License 4324B and Amended Permits 19724 and 19725. The amendments enable a physical solution to avoid water quality impacts due to salinity intrusions by adding a point of diversion for License 4324B and Permit 19725 at the Gallagher Well; and dedicate Permit 19724 for instream issues pursuant to a settlement agreement with environmental groups circa 2005.

The amended license and permits are consistent with the drafts reviewed by the Board during closed session on November 20, 2012.

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board

FEB 20 2013

RECEIVED
FEB 25 2013
North Marin Water District

In Reply Refer to:
JH:A013965B et al.

North Marin Water District
c/o Mr. Chris DeGabriele
P.O. Box 146
Novato, CA 94948

Dear Mr. DeGabriele:

AMENDED WATER RIGHT LICENSE 4324B AND PERMITS 19724 AND 19725 (APPLICATIONS 16595B, 25062, AND 25079), LAGUNITAS CREEK IN MARIN COUNTY

Your petitions have been approved and the requested changes have been incorporated in the enclosed water rights. All previous versions of the water rights have been superseded by the present versions of the water rights. The amended water rights may be viewed at: http://www.waterboards.ca.gov/water_issues/programs/ewrims/license_search.shtml

License 4324B was previously recorded with the County Recorder's Office on August 19, 2008 as Document ID No. 2008-0038945.

The amended water rights include conditions based on any of the following which are applicable to this project: (1) protest resolution; (2) mitigation measures based on any California Environmental Quality Act document and/or public trust evaluation prepared for the petition; (3) standard terms related to (a) continuing authority and water quality (Cal. Code Regs., tit. 23, § 780 (a), (b)), (b) threatened and endangered species, and (c) archeology; and (4) previous water rights or orders of the State Water Resources Control Board. Due to changes in format, the amended water rights may have different term numbering than the original water rights. Please make sure that you have reviewed the amended water rights and understand your obligations.

Justine Herrig is the staff person currently assigned to this matter, and she may be reached at (916) 341-5759 or JMHerrig@waterboards.ca.gov. Written correspondences or inquiries should be addressed as follows: State Water Resources Control Board, Division of Water Rights, Attn: Justine Herrig, P.O. Box 2000, Sacramento, CA, 95812-2000.

Sincerely,

Matt McCarthy, Senior
Coastal Streams Unit
Division of Water Rights

Enclosures

cc: (w/o enclosures) Department of Fish and Game
Bay Delta Region
c/o Ms. Corinne Gray
7329 Silverado Trail
Napa, CA 94558

National Marine Fisheries Service
c/o Mr. David Hines
777 Sonoma Ave, Room 325
Santa Rosa, CA 95404

Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

U.S. Army Corps of Engineers
333 Market Street, 8th Floor
San Francisco, CA 94105-2197

Trout Unlimited
North Bay Chapter
P.O. Box 6016
San Rafael, CA 94903

Tomales Bay Association
P.O. Box 369
Pt. Reyes Station, CA 94656

Sierra Club – Marin Group
P.O. Box 3058
San Rafael, CA 94912

STATE OF CALIFORNIA
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

Amended License for Diversion and Use of Water

APPLICATION 13965B PERMIT 8632 LICENSE 4324B

THIS IS TO CERTIFY, That

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

has the right to the use of the waters of **Lagunitas Creek** in **Marin County**

tributary to **Tomales Bay**

for the purpose of **Municipal, Industrial and Irrigation uses.**

The Deputy Director for Water Rights finds that: (a) the change will not operate to the injury of any lawful user of water; (b) good cause has been shown for the change; (c) the petition does not constitute the initiation of a new right; and (d) the State Water Resources Control Board (State Water Board) has made the required findings pursuant to the California Environmental Quality Act (CEQA) or the project is exempt from CEQA.

Additionally, the State Water Board has complied with its independent obligation to consider the effect of the proposed project on public trust resources and to protect those resources where feasible. (*National Audubon Society v. Superior Court* (1983) 33 Cal.3d 419 [189 Cal.Rptr. 346], 658 P.2d 709.)

This amended license is being issued in accordance with the redelegations of authority (Resolution No. 2012-0029). Therefore, this amended license on **Application 13965B** filed on **September 26, 1950** has been approved by the State Water Board SUBJECT TO PRIOR RIGHTS and to the limitations and conditions herein.

Amended License 4324B supersedes the license originally issued on **October 10, 2000**, which was perfected in accordance with the laws of California, the Regulations of the State Water Board, or its predecessor, and the terms of **Permit 8632**. The priority of this right dates from **September 26, 1950**. Proof of maximum beneficial use of water under this license was made as of **April 23, 1953** (the date of inspection).

The amount of water to which this right is entitled and hereby confirmed is limited to the amount actually beneficially used for the stated purposes and shall not exceed **sixty-seven hundredths (0.67) cubic foot per second to be diverted from May 1 to November 1 of each year. The maximum amount diverted under this license shall not exceed 148.8 acre-feet per year.**

In a dry year, the maximum simultaneous rate of diversion under this license and the rights pursuant to Applications 25062 and 25079 shall not exceed **1.18 cubic feet per second**. Pursuant to State Water Board Order WR 95-17 dated October 26, 1995, a dry year shall be defined as any year in which the total precipitation that occurs from the previous period of October 1 through April 1 does not exceed 28 inches as measured at the Marin Municipal Water District's Kent Lake Precipitation Gage.

In a dry year, the equivalent of such continuous flow allowance for any 30-day period may be diverted in a shorter time provided there is no interference with other rights and instream beneficial uses and provided further that all terms or conditions protecting instream beneficial uses are observed.

THE POINTS OF DIVERSION OF SUCH WATER ARE LOCATED:

(1) By California Coordinate System of 1983, Zone 3, North 2,219,905 feet, and East 5,900,081 feet, being within SW ¼ of SE ¼ at projected Section 25, T3N, R9W, MDB&M (Coast Guard Well 1).

(2) By California Coordinate System of 1983, Zone 3, North 2,219,909 feet, and East 5,900,069 feet, being within SW ¼ of SE ¼ at projected Section 25, T3N, R9W, MDB&M (Coast Guard Well 2).

(3) By California Coordinate System of 1983, Zone 3, North 2,219,912 feet, and East 5,900,050 feet, being within SW ¼ of SE ¼ at projected Section 25, T3N, R9W, MDB&M (Coast Guard Well 3).

(4) By California Coordinate System of 1983, Zone 3, North 2,222,409 feet, and East 5,901,065 feet, being within SE ¼ of NE ¼ at projected Section 25, T3N, R9W, MDB&M (Downey Well).

(5) By California Coordinate System of 1983, Zone 3, North 2,223,665 feet, and East 5,904,382 feet, being within SE ¼ of NW ¼ at projected Section 30, T3N, R8W, MDB&M (Gallagher Well).

A DESCRIPTION OF THE LANDS OR THE PLACE WHERE SUCH WATER IS PUT TO BENEFICIAL USE IS AS FOLLOWS:

At the Annexation No. 3 service area of the North Marin Water District within T2N and 3N, R8W and 9W, MDB&M, as show on map dated February 7, 2007, filed with the State Water Board.

If the claimed existing prior right is quantified at some later date as a result of an adjudication or other legally binding proceeding, the total quantity of water diverted and/or collected to storage, the rate of diversion, and the amount beneficially used under this license shall be reduced by the net of the face value specified in this license less the respective amounts recognized under the quantified existing prior right during the season specified in this license. No water shall be diverted to the place of use during the season authorized by this license, whenever the amounts diverted can be covered by the quantified existing prior right.

Licensee shall forfeit this license if he/she transfers all or any part of the claimed existing right for the place of use covered by this license to another place of use without the prior approval of the State Water Board.

Licensee shall divert water under the claimed existing right only in accordance with the law.

(0000021)

This license shall not be construed as conferring upon the licensee the right of access to the points of diversion.

(0000022)

Licensee shall consult with the Division of Water Rights and develop and implement a municipal water conservation program. The proposed water conservation program shall be presented to the Chief of the Division of Water Rights for approval within one year from the date municipal water services commences under this license or such further time as, for good cause shown, may be allowed by the State Water Board. A progress report on the development of the water conservation program may be required by the State Water Board at any time within this period. Licensee shall submit a report on its ongoing water conservation and reclamation activities to the State Water Board annually.

All cost-effective measures identified in the approved water conservation program shall be implemented in accordance with the schedule for implementation found therein.

(0000029B)

If it is determined that the as-built conditions of the project are not correctly represented by the map(s) prepared to accompany the application, Licensee shall, at their expense have the subject map(s) updated or replaced with equivalent as-built map(s). Said revision(s) or new map(s) shall be prepared by a civil engineer or land surveyor registered or licensed in the State of California and shall meet the requirements prescribed in California Code of Regulations, title 23, section 715 et seq. Said revision(s) or map(s) shall be furnished upon request of the Deputy Director for Water Rights.

(0000030)

For the preservation or enhancement of fish and wildlife resources, Licensee shall not divert water whenever the flow in Lagunitas Creek is solely comprised of water released for the purposes of preserving or enhancing fish and wildlife resources in the water.

(0000212)

No water shall be directly diverted under this license unless Licensee is monitoring and reporting said diversion of water. This monitoring shall be conducted using a device and methods satisfactory to the Deputy Director for Water Rights. The device shall be capable of monitoring of the rate and quantity of water diverted and shall be properly maintained.

Licensee shall provide the Division of Water Rights with evidence that the device has been installed with the first annual report submitted after device installation. Licensee shall provide the Division of Water Rights with evidence that substantiates that the device is functioning properly every five years after device installation as an enclosure to the current annual report or whenever requested by the Division of Water Rights.

Licensee shall maintain a record of all diversions under this license that includes the date, time, rate of diversion, and the amount of water diverted. The records shall be submitted with the annual report or whenever requested by the Division of Water Rights.

(000000R)

The right hereby confirmed to the diversion and use of water is restricted to the point or points of diversion herein specified and to the lands or place of use herein described.

Reports shall be filed promptly by the licensee on the appropriate forms which will be provided for the purpose from time to time by the State Water Board.

Licensee shall allow representatives of the State Water Board and other parties, as may be authorized from time to time by the State Water Board, reasonable access to project works to determine compliance with the terms of this license.

Pursuant to Water Code sections 100 and 275 and the common law public trust doctrine, all rights and privileges under this license, including method of diversion, method of use, and quantity of water diverted, are subject to the continuing authority of the State Water Board in accordance with law and in the interest of the public welfare to protect public trust uses and to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of said water.

The continuing authority of the State Water Board may be exercised by imposing specific requirements over and above those contained in this license with a view to eliminating waste of water and to meeting the reasonable water requirements of licensee without unreasonable draft on the source. Licensee may be required to implement a water conservation plan, features of which may include but not necessarily be limited to: (1) reusing or reclaiming the water allocated; (2) using water reclaimed by another entity instead of all or part of the water allocated; (3) restricting diversions so as to eliminate agricultural tailwater or to reduce return flow; (4) suppressing evaporation losses from water surfaces; (5) controlling phreatophytic growth; and (6) installing, maintaining, and operating efficient water measuring devices to assure compliance with the quantity limitations of this license and to determine accurately water use as against reasonable water requirement for the authorized project. No action will be taken pursuant to this paragraph unless the State Water Board determines, after notice to affected parties and opportunity for hearing, that such specific requirements are physically and financially feasible and are appropriate to the particular situation.

The continuing authority of the State Water Board also may be exercised by imposing further limitations on the diversion and use of water by the licensee in order to protect public trust uses. No action will be taken pursuant to this paragraph unless the State Water Board determines, after notice to affected parties and opportunity for hearing, that such action is consistent with California Constitution article X, section 2; is consistent with the public interest and is necessary to preserve or restore the uses protected by the public trust.

The quantity of water diverted under this license is subject to modification by the State Water Board if, after notice to the licensee and an opportunity for hearing, the State Water Board finds that such modification is necessary to meet water quality objectives in water quality control plans which have been or hereafter may be established or modified pursuant to division 7 of the Water Code. No action will be taken pursuant to this paragraph unless the State Water Board finds that: (1) adequate waste discharge requirements have been prescribed and are in effect with respect to all waste discharges which have any substantial effect upon water quality in the area involved, and (2) the water quality objectives cannot be achieved solely through the control of waste discharges.

This license does not authorize any act which results in the taking of a threatened or endangered species or candidate species or any act which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2089) or the federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). If a "take" will result from any act authorized under this water right, the licensee shall obtain authorization for an incidental take prior to construction or operation of the project. Licensee shall be responsible for meeting all requirements of the state or federal Endangered Species Acts for the project authorized under this license.

If construction or rehabilitation work is required for the diversion works covered by this license within the bed, channel, or bank of the affected water body, the licensee shall enter into a streambed or lake alteration agreement with the State Department of Fish and Game. Licensee shall submit a copy of the agreement, or waiver thereof, to the Division of Water Rights prior to commencement of work. Compliance with the terms and conditions of the agreement is the responsibility of the licensee.

This license is granted and the licensee accepts all rights herein confirmed subject to the following provisions of the Water Code:

Section 1625. Each license shall be in such form and contain such terms as may be prescribed by the State Water Board.

Section 1626. All licenses shall be under the terms and conditions of this division (of the Water Code).

Section 1627. A license shall be effective for such time as the water actually appropriated under it is used for a useful and beneficial purpose in conformity with this division (of the Water Code) but no longer.

Section 1628. Every license shall include the enumeration of conditions therein which in substance shall include all of the provisions of this article (of the Water Code) and the statement that any appropriator of water to whom a license is issued takes the license subject to the conditions therein expressed.

Section 1629. Every licensee, if he accepts a license, does so under the conditions precedent that no value whatsoever in excess of the actual amount paid to the State therefore shall at any time be assigned to or claimed for any license granted or issued under the provisions of this division (of the Water Code), or for any rights granted or acquired under the provisions of this division (of the Water Code), in respect to the regulation by any competent public authority of the services or the price of the services to be rendered by any licensee or by the holder of any rights granted or acquired under the provisions of this division (of the Water Code) or in respect to any valuation for purposes of sale to or purchase, whether through condemnation proceedings or otherwise, by the State or any city, city and county, municipal water district, irrigation district, lighting district, or any political subdivision of the State, of the rights and property of any licensee, or the possessor of any rights granted, issued, or acquired under the provisions of this division (of the Water Code).

Section 1630. At any time after the expiration of twenty years after the granting of a license, the State or any city, city and county, municipal water district, irrigation district, lighting district, or any political subdivision of the State shall have the right to purchase the works and property occupied and used under the license and the works built or constructed for the enjoyment of the rights granted under the license.

Section 1631. In the event that the State, or any city, city and county, municipal water district, irrigation district, lighting district, or political subdivision of the State so desiring to purchase and the owner of the works and property cannot agree upon the purchase price, the price shall be determined in such manner as is now or may hereafter be provided by law for determining the value of property taken in eminent domain proceedings.

STATE WATER RESOURCES CONTROL BOARD

James W. Kassel

for *Barbara Evoy, Deputy Director*
Division of Water Rights

Dated: FEB 20 2013

STATE OF CALIFORNIA
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

AMENDED PERMIT FOR DIVERSION AND USE OF WATER

APPLICATION 25062 PERMIT 19724

Permittee: North Marin Water District
P.O. Box 146
Novato, CA 94947

The Deputy Director for Water Rights finds that: (a) the change will not operate to the injury of any lawful user of water; (b) good cause has been shown for the change; (c) the petition does not constitute the initiation of a new right; and (d) the State Water Resources Control Board (State Water Board) has made the required findings pursuant to the California Environmental Quality Act (CEQA) or the project is exempt from CEQA. The amended permit is being issued in accordance with the redelegations of authority (Resolution No. 2012-0029).

Additionally, the State Water Board has complied with its independent obligation to consider the effect of the proposed project on public trust resources and to protect those resources where feasible. (*National Audubon Society v. Superior Court* (1983) 33 Cal.3d 419 [189 Cal.Rptr. 346], 658 P.2d 709.)

Therefore, an amended permit on **Application 25062** filed on **May 6, 1976** has been approved by the State Water Board SUBJECT TO PRIOR RIGHTS and to the limitations and conditions of this amended permit.

Permittee is hereby authorized to divert and use water as follows:

1. Source of water

Source: **Lagunitas Creek**

Tributary to: **Tomales Bay**

within the County of **Marin**.

2. Location of points of diversion

By California Coordinate System of 1983 in Zone 2	40-acre subdivision of public land survey or projection thereof	Section (Projected)*	Township	Range	Base and Meridian
Coast Guard Well 1 North 2,219,905 feet and East 5,900,081 feet	**SW ¼ of SE ¼**	**25**	**3N**	**9W**	**MD**
Coast Guard Well 2 North 2,219,909 feet and East 5,900,069 feet	**SW ¼ of SE ¼**	**25**	**3N**	**9W**	**MD**
Coast Guard Well 3 North 2,219,912 feet and East 5,900,050 feet	**SW ¼ of SE ¼**	**25**	**3N**	**9W**	**MD**
Downey Well North 2,219,809 feet and East 5,900,265 feet	**SW ¼ of SE ¼**	**25**	**3N**	**9W**	**MD**

Gallagher Well North 2,223,665 feet and East 5,904,382 feet	**SE ¼ of NW ¼**	**30**	**3N**	**8W**	**MD**

3. Purpose of use	4. Place of use					
	40-acre subdivision of public land survey or projection thereof	Section (Projected)*	Township	Range	Base and Meridian	Acres
Municipal	Within the Annexation No. 3 Service Area Boundary within Township 2N and 3N, Range 8W and 9W, MDB&M as shown on map dated February 7, 2007.					
Fish and Wildlife Preservation and Enhancement	At stream segment between the Point of Diversion located by California Coordinate System of 1983, Zone 3, North 2,219,905 feet and East 5,900,081 feet, being within SW ¼ of SE ¼ of projected Section 25, T3N, R9W, MDB&M (upstream limit), and the confluence of Lagunitas Creek and Tomales Bay (downstream limit).					

The place of use is shown on map on file with the State Water Board.

5. The water appropriated shall be limited to the quantity which can be beneficially used and shall not exceed **0.699 cubic foot per second** to be diverted from January 1 to December 31 of each year. The maximum amount diverted under this permit shall not exceed **212.7 acre-feet per year**.

(0000005A)

6. In a dry year, the maximum simultaneous rate of diversion under this permit and the rights pursuant to Applications 13965B and 25079 shall not exceed **1.18 cubic feet per second**. Pursuant to State Water Board Order WR 95-17 dated October 26, 1995, a dry year shall be defined as any year in which the total precipitation that occurs from the previous period of October 1 through April 1 does not exceed 28 inches as measured at the Marin Municipal Water District's Kent Lake Precipitation Gage.

(0000005S)

7. Construction work and complete application of the water to the authorized use shall be prosecuted with reasonable diligence and completed by December 1, 2000.

(0000009)

8. If the claimed existing prior right is quantified at some later date as a result of an adjudication or other legally binding proceeding, the total quantity of water diverted and/or collected to storage, the rate of diversion, and the amount beneficially used under this permit shall be reduced by the net of the face value specified in this permit less the respective amounts recognized under the quantified existing prior right during the season specified in this permit. No water shall be diverted to the place of use during the season authorized by this permit, whenever the amounts diverted can be covered by the quantified existing prior right.

Permittee shall forfeit this license if he/she transfers all or any part of the claimed existing right for the place of use covered by this permit to another place of use without the prior approval of the State Water Board.

Permittee shall divert water under the claimed existing right only in accordance with the law.

(0000021A)

9. This permit shall not be construed as conferring upon the permittee right of access to the points of diversion.

(0000022)

10. Permittee shall consult with the Division of Water Rights and develop and implement a water conservation plan or actions. The proposed plan or actions shall be presented to the State Water Board for approval within one year from the date of this permit or such further time as, for good cause shown, may be allowed by the State Water Board. A progress report on the development of the water conservation program may be required by the State Water Board at any time within this period. Permittee shall submit a report on its ongoing water conservation and reclamation activities to the State Water Board annually.

    All cost-effective measures identified in the approved water conservation program shall be implemented in accordance with the schedule for implementation found therein.

    (0000029B)

11. If it is determined that the as-built conditions of the project are not correctly represented by the map(s) prepared to accompany the application, Permittee shall, at their expense have the subject map(s) updated or replaced with equivalent as-built map(s). Said revision(s) or new map(s) shall be prepared by a civil engineer or land surveyor registered or licensed in the State of California and shall meet the requirements prescribed in California Code of Regulations, title 23, section 715 et seq. Said revision(s) or map(s) shall be furnished upon request of the Deputy Director for Water Rights.

    (0000030)

12. Permittee shall not divert water under this permit from July 1 to October 31 of a dry year. Before July 1 of each year, Permittee shall provide to the Division of Water Rights written notification of the current year's water year type, including supporting data, and any actions Permittee will take to ensure compliance with this term.

    (0540300)

13. This permit does not authorize diversion of any water specifically released from storage by Marin Municipal Water District for fish and wildlife protection in Lagunitas Creek in compliance with the terms of any permit, permit or order of the State Water Board. Permittee shall not divert or impair the flow of such water.

    (0160400)

14. No water shall be directly diverted under this permit unless Permittee is monitoring and reporting said diversion of water. This monitoring shall be conducted using a device and methods satisfactory to the Deputy Director for Water Rights. The device shall be capable of monitoring the rate and quantity of water diverted and shall be properly maintained.

    Permittee shall provide the Division of Water Rights with evidence that the device has been installed with the first annual report submitted after device installation. Permittee shall provide the Division of Water Rights with evidence that substantiates that the device is functioning properly every five years after device installation as an enclosure to the current annual report or whenever requested by the Division of Water Rights.

    Permittee shall maintain a record of all diversions under this permit that includes the date, time, rate of diversion, and the amount of water diverted. The records shall be submitted with the annual report or whenever requested by the Division of Water Rights.

    (000000R)

THIS PERMIT IS ALSO SUBJECT TO THE FOLLOWING TERMS AND CONDITIONS:

A. The amount authorized for appropriation may be reduced in the license if investigation warrants.
(0000006)

B. Progress reports shall be submitted promptly by permittee when requested by the State Water Board until a license is issued.
(0000010)

C. Permittee shall allow representatives of the State Water Board and other parties, as may be authorized from time to time by the State Water Board, reasonable access to project works to determine compliance with the terms of this permit.
(0000011)

D. Pursuant to California Water Code sections 100 and 275 and the common law public trust doctrine, all rights and privileges under this permit and under any license issued pursuant thereto, including method of diversion, method of use, and quantity of water diverted, are subject to the continuing authority of the State Water Board in accordance with law and in the interest of the public welfare to protect public trust uses and to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of said water.

The continuing authority of the State Water Board may be exercised by imposing specific requirements over and above those contained in this permit with a view to eliminating waste of water and to meeting the reasonable water requirements of permittee without unreasonable draft on the source. Permittee may be required to implement a water conservation plan, features of which may include but not necessarily be limited to (1) reusing or reclaiming the water allocated; (2) using water reclaimed by another entity instead of all or part of the water allocated; (3) restricting diversions so as to eliminate agricultural tailwater or to reduce return flow; (4) suppressing evaporation losses from water surfaces; (5) controlling phreatophytic growth; and (6) installing, maintaining, and operating efficient water measuring devices to assure compliance with the quantity limitations of this permit and to determine accurately water use as against reasonable water requirements for the authorized project. No action will be taken pursuant to this paragraph unless the State Water Board determines, after notice to affected parties and opportunity for hearing, that such specific requirements are physically and financially feasible and are appropriate to the particular situation.

The continuing authority of the State Water Board also may be exercised by imposing further limitations on the diversion and use of water by the permittee in order to protect public trust uses. No action will be taken pursuant to this paragraph unless the State Water Board determines, after notice to affected parties and opportunity for hearing, that such action is consistent with California Constitution Article X, Section 2; is consistent with the public interest; and is necessary to preserve or restore the uses protected by the public trust.
(0000012)

E. The quantity of water diverted under this permit and under any license issued pursuant thereto is subject to modification by the State Water Board if, after notice to the permittee and an opportunity for hearing, the State Water Board finds that such modification is necessary to meet water quality objectives in water quality control plans which have been or hereafter may be established or modified pursuant to Division 7 of the Water Code. No action will be taken pursuant to this paragraph unless the State Water Board finds that (1) adequate waste discharge requirements have been prescribed and are in effect with respect to all waste discharges which have any substantial effect upon water quality in the area involved, and (2) the water quality objectives cannot be achieved solely through the control of waste discharges.
(0000013)

F. This permit does not authorize any act which results in the taking of a threatened or endangered species or any act which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). If a "take" will result from any act authorized under this water right, the permittee shall obtain authorization for an incidental take prior to construction or operation of the project. Permittee shall be responsible for meeting all requirements of the applicable Endangered Species Act for the project authorized under this permit.

(0000014)

G. Permittee shall maintain records of the amount of water diverted and used to enable the State Water Board to determine the amount of water that has been applied to beneficial use pursuant to Water Code section 1605.

(0000015)

H. No water shall be diverted under this permit, and no construction related to such diversion shall commence, until Permittee obtains all necessary permits or other approvals required by other agencies. If an amended permit is issued, no new facilities shall be utilized, nor shall the amount of water diverted increase beyond the maximum amount diverted during the previously authorized development schedule, until Permittee complies with the requirements of this term.

Within 90 days of the issuance of this permit or any subsequent amendment, Permittee shall prepare and submit to the Division of Water Rights a list of, or provide information that shows proof of attempts to solicit information regarding the need for, permits or approvals that may be required for the project. At a minimum, Permittee shall provide a list or other information pertaining to whether any of the following permits or approvals are required: (1) lake or streambed alteration agreement with the Department of Fish and Game (Fish & G. Code, § 1600 et seq.); (2) Department of Water Resources, Division of Safety of Dams approval (Wat. Code, § 6002.); (3) Regional Water Quality Control Board Waste Discharge Requirements (Wat. Code, § 13260 et seq.); (4) U.S. Army Corps of Engineers Clean Water Act section 404 permit (33 U.S.C. § 1344.); or, (5) local grading permits.

Permittee shall, within 30 days of issuance of all permits, approvals or waivers, transmit copies to the Division of Water Rights.

(0000203)

This permit is issued and permittee takes it subject to the following provisions of the Water Code:

Section 1390. A permit shall be effective for such time as the water actually appropriated under it is used for a useful and beneficial purpose in conformity with this division (of the Water Code), but no longer.

Section 1391. Every permit shall include the enumeration of conditions therein which in substance shall include all of the provisions of this article and the statement that any appropriator of water to whom a permit is issued takes it subject to the conditions therein expressed.

Section 1392. Every permittee, if he accepts a permit, does so under the conditions precedent that no value whatsoever in excess of the actual amount paid to the State therefor shall at any time be assigned to or claimed for any permit granted or issued under the provisions of this division (of the Water Code), or for any rights granted or acquired under the provisions of this division (of the Water Code), in respect to the regulation by any competent public authority of the services or the price of the services to be rendered by any permittee or by the holder of any rights granted or acquired under the provisions of this division (of the Water Code) or in respect to any valuation for purposes of sale to or purchase, whether through condemnation proceedings or otherwise, by the State or any city, city and county, municipal water district, irrigation district, lighting district, or any political subdivision of the State, of the rights and property of any permittee, or the possessor of any rights granted, issued, or acquired under the provisions of this division (of the Water Code).

STATE WATER RESOURCES CONTROL BOARD

for James W. Kassel
Barbara Evoy, Deputy Director
Division of Water Rights

Dated: FEB 20 2013

STATE OF CALIFORNIA
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

AMENDED PERMIT FOR DIVERSION AND USE OF WATER

APPLICATION 25079 PERMIT 19725

Permittee: North Marin Water District
P.O. Box 146
Novato, CA 94947

The Deputy Director for Water Rights finds that: (a) the change will not operate to the injury of any lawful user of water; (b) good cause has been shown for the change; (c) the petition does not constitute the initiation of a new right; and (d) the State Water Resources Control Board (State Water Board) has made the required findings pursuant to the California Environmental Quality Act (CEQA) or the project is exempt from CEQA. The amended permit is being issued in accordance with the redelegations of authority (Resolution No. 2012-0029).

Additionally, the State Water Board has complied with its independent obligation to consider the effect of the proposed project on public trust resources and to protect those resources where feasible. (*National Audubon Society v. Superior Court* (1983) 33 Cal.3d 419 [189 Cal.Rptr. 346], 658 P.2d 709.)

Therefore, an amended permit on **Application 25079** filed on **June 7, 1976** has been approved by the State Water Board SUBJECT TO PRIOR RIGHTS and to the limitations and conditions of this amended permit.

Permittee is hereby authorized to divert and use water as follows:

1. Source of water

Source: **Lagunitas Creek** Tributary to: **Tomales Bay**

within the County of **Marin**.

2. Location of points of diversion

By California Coordinate System of 1983 in Zone 2	40-acre subdivision of public land survey or projection thereof	Section (Projected)*	Township	Range	Base and Meridian
Coast Guard Well 1 North 2,219,905 feet and East 5,900,081 feet	**SW ¼ of SE ¼**	**25**	**3N**	**9W**	**MD**
Coast Guard Well 2 North 2,219,909 feet and East 5,900,069 feet	**SW ¼ of SE ¼**	**25**	**3N**	**9W**	**MD**
Coast Guard Well 3 North 2,219,912 feet and East 5,900,050 feet	**SW ¼ of SE ¼**	**25**	**3N**	**9W**	**MD**
Downey Well North 2,219,809 feet and East 5,900,265 feet	**SW ¼ of SE ¼**	**25**	**3N**	**9W**	**MD**

Gallagher Well North 2,223,665 feet and East 5,904,382 feet	**SE ¼ of NW ¼**	**30**	**3N**	**8W**	**MD**

3. Purpose of use	4. Place of use					
	40-acre subdivision of public land survey or projection thereof	Section (Projected)*	Township	Range	Base and Meridian	Acres
Municipal	Within the Annexation No. 3 Service Area Boundary within Township 2N and 3N, Range 8W and 9W, MDB&M as shown on map dated February 7, 2007.					

The place of use is shown on map on file with the State Water Board.

5. The water appropriated shall be limited to the quantity which can be beneficially used and shall not exceed **0.961 cubic foot per second** to be diverted from January 1 to December 31 of each year. The maximum amount diverted under this permit shall not exceed **292.5 acre-feet per year**.

(0000005A)

6. In a dry year, the maximum simultaneous rate of diversion under this permit and the rights pursuant to Applications 13965B and 25062 shall not exceed **1.18 cubic feet per second**. Pursuant to State Water Board Order WR 95-17 dated October 26, 1995, a dry year shall be defined as any year in which the total precipitation that occurs from the previous period of October 1 through April 1 does not exceed 28 inches as measured at the Marin Municipal Water District's Kent Lake Precipitation Gage.

(0000005S)

7. Construction work and complete application of the water to the authorized use shall be prosecuted with reasonable diligence and completed by December 1, 2000.

(0000009)

8. If the claimed existing prior right is quantified at some later date as a result of an adjudication or other legally binding proceeding, the total quantity of water diverted and/or collected to storage, the rate of diversion, and the amount beneficially used under this permit shall be reduced by the net of the face value specified in this permit less the respective amounts recognized under the quantified existing prior right during the season specified in this permit. No water shall be diverted to the place of use during the season authorized by this permit, whenever the amounts diverted can be covered by the quantified existing prior right.

Permittee shall forfeit this license if he/she transfers all or any part of the claimed existing right for the place of use covered by this permit to another place of use without the prior approval of the State Water Board.

Permittee shall divert water under the claimed existing right only in accordance with the law.

(0000021A)

9. This permit shall not be construed as conferring upon the permittee right of access to the points of diversion.

(0000022)

10. Permittee shall consult with the Division of Water Rights and develop and implement a water conservation plan or actions. The proposed plan or actions shall be presented to the State Water Board for approval within one year from the date of this permit or such further time as, for good cause shown, may be allowed by the State Water Board. A progress report on the development of the water conservation program may be required by the State Water Board at any time within this period.

Permittee shall submit a report on its ongoing water conservation and reclamation activities to the State Water Board annually.

All cost-effective measures identified in the approved water conservation program shall be implemented in accordance with the schedule for implementation found therein.

(0000029B)

11. If it is determined that the as-built conditions of the project are not correctly represented by the map(s) prepared to accompany the application, Permittee shall, at their expense have the subject map(s) updated or replaced with equivalent as-built map(s). Said revision(s) or new map(s) shall be prepared by a civil engineer or land surveyor registered or licensed in the State of California and shall meet the requirements prescribed in California Code of Regulations, title 23, section 715 et seq. Said revision(s) or map(s) shall be furnished upon request of the Deputy Director for Water Rights.

(0000030)

12. For the preservation or enhancement of fish and wildlife resources, Permittee shall not divert water whenever the flow in Lagunitas Creek is comprised solely of water released for the purpose of preserving or enhancement of fish and wildlife resources in the water.

(0000212)

13. Permittee shall not divert water under this permit from July 1 to October 31 of a dry year. Before July 1 of each year, Permittee shall provide to the Division of Water Rights written notification of the current year's water year type, including supporting data, and any actions Permittee will take to ensure compliance with this term.

(0540300)

14. This permit does not authorize diversion of any water specifically released from storage by Marin Municipal Water District for fish and wildlife protection in Lagunitas Creek in compliance with the terms of any permit, permit or order of the State Water Board. Permittee shall not divert or impair the flow of such water.

(0160400)

15. No water shall be directly diverted under this permit unless Permittee is monitoring and reporting said diversion of water. This monitoring shall be conducted using a device and methods satisfactory to the Deputy Director for Water Rights. The device shall be capable of monitoring the rate and quantity of water diverted and shall be properly maintained.

Permittee shall provide the Division of Water Rights with evidence that the device has been installed with the first annual report submitted after device installation. Permittee shall provide the Division of Water Rights with evidence that substantiates that the device is functioning properly every five years after device installation as an enclosure to the current annual report or whenever requested by the Division of Water Rights.

Permittee shall maintain a record of all diversions under this permit that includes the date, time, rate of diversion, and the amount of water diverted. The records shall be submitted with the annual report or whenever requested by the Division of Water Rights.

(000000R)

THIS PERMIT IS ALSO SUBJECT TO THE FOLLOWING TERMS AND CONDITIONS:

A. The amount authorized for appropriation may be reduced in the license if investigation warrants.

(0000006)

B. Progress reports shall be submitted promptly by permittee when requested by the State Water Board until a license is issued.

(0000010)

C. Permittee shall allow representatives of the State Water Board and other parties, as may be authorized from time to time by the State Water Board, reasonable access to project works to determine compliance with the terms of this permit.

(0000011)

D. Pursuant to California Water Code sections 100 and 275 and the common law public trust doctrine, all rights and privileges under this permit and under any license issued pursuant thereto, including method of diversion, method of use, and quantity of water diverted, are subject to the continuing authority of the State Water Board in accordance with law and in the interest of the public welfare to protect public trust uses and to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of said water.

The continuing authority of the State Water Board may be exercised by imposing specific requirements over and above those contained in this permit with a view to eliminating waste of water and to meeting the reasonable water requirements of permittee without unreasonable draft on the source. Permittee may be required to implement a water conservation plan, features of which may include but not necessarily be limited to (1) reusing or reclaiming the water allocated; (2) using water reclaimed by another entity instead of all or part of the water allocated; (3) restricting diversions so as to eliminate agricultural tailwater or to reduce return flow; (4) suppressing evaporation losses from water surfaces; (5) controlling phreatophytic growth; and (6) installing, maintaining, and operating efficient water measuring devices to assure compliance with the quantity limitations of this permit and to determine accurately water use as against reasonable water requirements for the authorized project. No action will be taken pursuant to this paragraph unless the State Water Board determines, after notice to affected parties and opportunity for hearing, that such specific requirements are physically and financially feasible and are appropriate to the particular situation.

The continuing authority of the State Water Board also may be exercised by imposing further limitations on the diversion and use of water by the permittee in order to protect public trust uses. No action will be taken pursuant to this paragraph unless the State Water Board determines, after notice to affected parties and opportunity for hearing, that such action is consistent with California Constitution Article X, Section 2; is consistent with the public interest; and is necessary to preserve or restore the uses protected by the public trust.

(0000012)

E. The quantity of water diverted under this permit and under any license issued pursuant thereto is subject to modification by the State Water Board if, after notice to the permittee and an opportunity for hearing, the State Water Board finds that such modification is necessary to meet water quality objectives in water quality control plans which have been or hereafter may be established or modified pursuant to Division 7 of the Water Code. No action will be taken pursuant to this paragraph unless the State Water Board finds that (1) adequate waste discharge requirements have been prescribed and are in effect with respect to all waste discharges which have any substantial effect upon water quality in the area involved, and (2) the water quality objectives cannot be achieved solely through the control of waste discharges.

(0000013)

F. This permit does not authorize any act which results in the taking of a threatened or endangered species or any act which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). If a "take" will result from any act authorized under this water right, the permittee shall obtain authorization for an incidental take prior to construction or operation of the project. Permittee shall be responsible for meeting all requirements of the applicable Endangered Species Act for the project authorized under this permit.

(0000014)

G. Permittee shall maintain records of the amount of water diverted and used to enable the State Water Board to determine the amount of water that has been applied to beneficial use pursuant to Water Code section 1605.

(0000015)

H. No water shall be diverted under this permit, and no construction related to such diversion shall commence, until Permittee obtains all necessary permits or other approvals required by other agencies. If an amended permit is issued, no new facilities shall be utilized, nor shall the amount of water diverted increase beyond the maximum amount diverted during the previously authorized development schedule, until Permittee complies with the requirements of this term.

Within 90 days of the issuance of this permit or any subsequent amendment, Permittee shall prepare and submit to the Division of Water Rights a list of, or provide information that shows proof of attempts to solicit information regarding the need for, permits or approvals that may be required for the project. At a minimum, Permittee shall provide a list or other information pertaining to whether any of the following permits or approvals are required: (1) lake or streambed alteration agreement with the Department of Fish and Game (Fish & G. Code, § 1600 et seq.); (2) Department of Water Resources, Division of Safety of Dams approval (Wat. Code, § 6002.); (3) Regional Water Quality Control Board Waste Discharge Requirements (Wat. Code, § 13260 et seq.); (4) U.S. Army Corps of Engineers Clean Water Act section 404 permit (33 U.S.C. § 1344.); or, (5) local grading permits.

Permittee shall, within 30 days of issuance of all permits, approvals or waivers, transmit copies to the Division of Water Rights.

(0000203)

This permit is issued and permittee takes it subject to the following provisions of the Water Code:

Section 1390. A permit shall be effective for such time as the water actually appropriated under it is used for a useful and beneficial purpose in conformity with this division (of the Water Code), but no longer.

Section 1391. Every permit shall include the enumeration of conditions therein which in substance shall include all of the provisions of this article and the statement that any appropriator of water to whom a permit is issued takes it subject to the conditions therein expressed.

Section 1392. Every permittee, if he accepts a permit, does so under the conditions precedent that no value whatsoever in excess of the actual amount paid to the State therefor shall at any time be assigned to or claimed for any permit granted or issued under the provisions of this division (of the Water Code), or for any rights granted or acquired under the provisions of this division (of the Water Code), in respect to the regulation by any competent public authority of the services or the price of the services to be rendered by any permittee or by the holder of any rights granted or acquired under the provisions of this division (of the Water Code) or in respect to any valuation for purposes of sale to or purchase, whether through condemnation proceedings or otherwise, by the State or any city, city and county, municipal water district, irrigation district, lighting district, or any political subdivision of the State, of the rights and property of any permittee, or the possessor of any rights granted, issued, or acquired under the provisions of this division (of the Water Code).

STATE WATER RESOURCES CONTROL BOARD

for James W. Kassel
Barbara Evoy, Deputy Director
Division of Water Rights

Dated: FEB 20 2013

NOTICE OF MEETING OF
NORTH BAY WATERSHED ASSOCIATION

Notice is hereby given that a meeting of the North Bay Watershed Association will be held as follows:

Date: Friday, March 1, 2013

Time: 9:30 a.m. – 11:30 a.m.

Location: Novato Sanitary District
500 Davidson Street
Novato, CA 94945

AGENDA

Item	Recommendation
1. Call to Order (Jack Gibson, Chair)	
2. Public Comment	
3. Approval of the Agenda (1 min.)	Approve
4. Approval of Minutes	Approve
5. Treasurer's Report (1 min.)	Accept
6. Bay Area Climate Change Adaptation (45 min.) Guest Speaker: Bruce Riordan, Bay Area Joint Policy Committee	Information
7. Budget 2013-2014/Strategy Session (45 min.) 2012 Project Approval Stormwater – $30k Cost of Compliance Forum – $5k	Action
8. Items of Interest	
9. Items for Next Agenda	

Next Meeting Information:

Next Meeting: **April 5, 2013**
Conference Room 2
Petaluma (Lucchesi) Community Center
320 N. McDowell Boulevard
Petaluma, CA 94954

NORTH BAY WATERSHED ASSOCIATION

Minutes for the meeting of the North Bay Watershed Association (NBWA) Board of Directors.

Date: February 1, 2013
Time: 9:30 a.m.
Location: Petaluma (Lucchesi) Community Center
320 N. McDowell Boulevard
Conference Room 2
Petaluma, CA 94954

Directors Present: Directors present included:

Board Member	Agency/Organization	Board Member	Agency/Organization
Steve Barbose	City of Sonoma and Sonoma Valley County Sanitation District	Mark Luce	Napa Sanitation District
Mike DiGiorgio	Novato Sanitary District	Judy Schriebman	Las Gallinas Valley Sanitary District
Rick Fraites	North Marin Water District	Kate Sears	County of Marin
Jack Gibson	Marin Municipal Water District	Madeline Thomas	Bell Marin Keys Community Services District
Kathy Hartzell	Central Marin Sanitation Agency	Pamela Tuft	City of Petaluma

Directors present represented 11 out of the 16 agencies signatory to the Association MOU.

Board Actions:

1. **Call to Order.** Jack Gibson, Chair, called the meeting to order at 9:40 a.m.

2. **Public Comment.** None.

3. **Approval of the Agenda.** (See Handout) The Board unanimously approved the agenda.

4. **Approval of the Minutes of the Board Meeting held January 4, 2013.** (See Handout) The Minutes of the Board Meeting held on January 4, 2013 were unanimously approved.

5. **Treasurer's Report.** (See Handout) The Treasurer's Report was accepted as presented by Harry Seraydarian.

6. **Adapting to Sea Level Rise along the North Bay Shoreline.** Sam Veloz, PRBO, presented a PowerPoint entitled, "Adapting to Sea Level Rise along the North Bay Shoreline" and provided a handout of the draft report. Sam began by summarizing previous PRBO estuary-wide work that showed marshes are sensitive to sediment and sea level rise. He highlighted various scenarios with different sediment loadings and high and low sea level rise conditions and noted that including all scenarios leads to robust planning results. Sam explained what they wanted to do with this project: make results more usable on a smaller scale; make enhancements to the online decision support tool; and ensure products support future decisions. He then described the two workshops held last summer in Petaluma and San Rafael to solicit management information needs. Sam then summarized what they learned based on workshops and surveys. Greatest impact concerns exist for ecosystem services, wildlife habitat, and human infrastructure. Sam also presented more specific aspects of sea level rise that are of concern and noted future studies will include severe storms in addition to sea level rise. Sam then provided a long list of management needs that were identified in the workshops. He explained that case studies were suggested and PRBO did three: Gallinas Creek, Novato Creek, and Tam Highway/Miller Avenue Richardson Bay. Sam then presented results from the case studies and noted that Richardson Bay is a low sediment area and sensitive to sea level rise, while Gallinas Creek is sensitive to sediment loading. He also presented graphs showing the benefit of marshes in providing flood protection by reducing wave energy and how that varies in six different drainage areas. Sam then presented results specific to Bothin Marsh in Richardson Bay and noted the low adaptive capacity and high vulnerability. He presented a similar analysis for Santa Venetia and highlighted how the marsh protects the existing levee. Sam identified the enhancements to the PRBO decision support tool: add wave retention layers; provide site level reports; and the addition of a tutorial YouTube video. Sam described next steps looking at economic tradeoffs: answering the question: Is it more cost efficient to raise levees or enhance marsh protection? (By combining

their work with the Bay Institute analysis on cost benefit at sites.) Sam provided an overall summary: Sites in North Marin and along the Petaluma River are less vulnerable to sea level rise; estimates of wave retention help identify where levees are vulnerable and where marsh restoration and enhancement can limit vulnerability; and results can be used to identify where engineered solutions should be prioritized. The NBWA Board Members had a number of questions: What are ecosystem services? (Services from tidal marsh such as flood control and carbon sequestration.) What are avenues for sediment management given that the Bay is considered sediment deficient, while tributaries have "too much sediment"? (Cost tradeoffs in identifying sources for sediment such as dredging.) Are mud flats good for birds? (Yes, good for shore birds but also need to accommodate tidal marsh birds.) What do you think of ecotone slopes? (Will work in certain places and have multiple benefits.) Any thoughts on FEMA standards and levee protection? (FEMA will update maps in 2016 to include wind/wave action.)

7. **Petaluma Projects Update.** Pamela Tuft, City of Petaluma, provided a PowerPoint entitled, "Project Update". Pam first presented a map of Petaluma showing 7 flood control and habitat enhancement projects and a list of approved 2010 projects. She provided some history of local efforts including a 1996 River Action Plan that was re-adopted as part of the General Plan in 2008 and the FEMA re-mapping which included the first use of a dynamic computer model. This led to looking at newly identified flood areas for project opportunities. Pam described one completed project at Denman Reach and provided some visuals and a summary of funding. She then summarized the efforts at Capri Creek and highlighted the future Prop 84 funding of $825k requested for re-contouring a low flow bench and restoring habitat. She also presented visuals and budget summaries for Adobe Creek and Washington Creek. The NBWA Board Members had several questions: What is a single loaded street? (Street closer to stream than backyards.) How do you avoid bad projects? (Public Works approvals must be consistent with the General Plan.) Payran area has flooded a lot – Is it close to being fixed? (95% complete and authorization exists for remaining portion.) Vegetation has increased on Adobe Creek golf course – Is that good? (Yes, trees are not a hindrance to flood flows.) How does flood easement work? (It allows maintenance of flood flow capacity with compensation for granting authority.) What is a flood terrace? (Modify elevations to increase flood control.) Is the 25 year flood old or new 25 year flood? (City uses build out, whereas FEMA only uses existing development.)

8. **Items of Interest.**
   * April 18, 10:00 am-12 noon Workshop for Elected Officials – "Stormwater and Wastewater Regulations – Costs of Compliance – Forum for North Bay"

9. **Items for Next Agenda.**
   * Bay Area Climate Change Adaptation, Bruce Riordan, Bay Area Joint Policy Committee
   * Budget 2013-2014/Strategy Session, Harry Seraydarian

Jack Gibson, Chair, adjourned the meeting at 11:25 a.m.

SUBJECT TO BOARD APPROVAL
Submitted By: Elizabeth O. Preim-Rohtla
Assistant to the Executive Director

NEXT MEETING INFORMATION:
March 1 – Novato Sanitary District, 500 Davidson Street, Novato, CA 94945
April 5 – Petaluma (Lucchesi) Community Ctr., 320 N. McDowell Blvd., Petaluma, CA 94954-Conf. Rm. 2

North Bay Watershed Assessment (NBWA) Regional Project Proposal

Project Title: Phase II Permit (2013) E.12 Guidance Manual Development

Objective: Assist North Bay municipalities, counties and countywide programs, working together through the Marin Napa Sonoma Solano Stormwater Agencies Association (MNSSSA), to comply with Section E.12 – Post-Construction Storm Water Management Program - of the new Phase II Stormwater Municipal Permit requirements, adopted on February 5, 2013. The E.12 requirements apply to specific public and private development (including redevelopment) projects. Section E.12 requires municipal Phase II Permittees (cities, towns and county governments in the North Bay) to impose ongoing stormwater treatment and control requirements on development projects. The objective of these permit requirements is to prevent impacts to water quality from development and impervious surface by requiring pollutant source control design and on-site stormwater infiltration, evapotranspiration, and capture and reuse (treatment using bioretention facilities allowed when the other methods are not feasible). Low Impact Development (LID) design is required. Ongoing operations and maintenance requirements will apply to regulated development projects. Therefore, assistance is needed by Phase II municipal Permittees to plan for and to comply with the new requirements.

Project Description: The North Bay Watershed Association (NBWA) Water Quality Technical Committee recommends the following project in order to achieve the stated objective: 1) Hire an experienced consultant to prepare a guidance manual for use by municipal staff and development professionals that describes the Phase II Permit E.12 Post-Construction requirements and provides site design and implementation guidance for development and redevelopment projects; 2) Prepare and implement three training workshops for municipal and county staff and development professionals who work in the North Bay. Improve implementation of Low Impact Development design in order to achieve all of the associated benefits (evapotranspiration, infiltration, Stormwater treatment, water conservation, cost-effective permit compliance, green infrastructure, etc.).

The NBWA Water Quality Technical Committees recommends hiring an experienced consultant to revise and update an existing guidance manual[1] to reflect the new Phase II permit requirements. It is proposed that Dan Cloak Environmental Consulting revise the existing guidance manual for all participants in the Marin Napa Sonoma Solano Stormwater Agencies Association (includes many NBWA members). A template will be tailored for each county that can be further adapted for use by individual cities, towns and unincorporated county areas. The project will also include at least three workshops to be held in Marin, Napa and Sonoma (one workshop each). The target audiences are municipal staff and the development professional community of the North Bay.

Project Team: Specific agencies of the Marin Napa Sonoma Solano Stormwater Agencies Association (MNSSSA): Marin County Stormwater Pollution Prevention Program (MCSTOPPP), Napa Countywide Stormwater Pollution Prevention Program (NCSPPP), City of Sonoma, City of Petaluma, County of Solano and City of Benicia.

Collaborative Partners: MNSSSA Participants: Marin's cities, town and county through MCSTOPPP; Napa's cities, towns and county through NSPPPP; Sonoma's cities, towns, county draining to the San Francisco Bay and Sonoma County Water Agency; Phase II Solano County, cities and towns draining to the San Francisco Bay.

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[1] Existing guidance manual (*Guidance for Applicants: Stormwater Quality Manual for Development Projects in Marin County – A Low Impact Development Approach)* was prepared for Marin County Stormwater Pollution Prevention Program by Dan Cloak Environmental Consulting to assist with current Phase II municipal stormwater permit post-construction requirements. A sole source contract is warranted in this case based on unique experience and expertise of Dan Cloak Environmental Consulting.). In addition, Dan Cloak Environmental Consulting worked directly with the California Stormwater Quality Association (CASQA) Phase II Subcommittee (statewide group of Phase II municipal Permittees) to E.12 permit requirements in the new Phase II Stormwater Permit.

Timing: Complete guidance manual(s) and implement trainings by January 31, 2015, with milestones identified in the attached scope of work.

Request to NBWA: $30,000

Total Project Budget: $40,000

Requested Funds: Hire Dan Cloak Environmental Consulting to complete the following tasks[2]

Task		Hours	Labor	Expenses	Total
1	Coordination	20	$ 2,900	$ 150	$ 3,050
2	Model Guidance	116	$ 16,820		$ 16,820
3	Guidance Versions	20	$ 2,900	$ 120	$ 3,020
4	Workshops	48	$ 6,960	$ 150	$ 7,110
			$ 29,580		**$ 30,000**

TOTAL REQUEST $30,000

Matching Funds: $10,000
In-kind services provided by MCSTOPPP, Napa Countywide Stormwater Pollution Prevention Program (NCSPPP), City of Sonoma and City of Petaluma, County of Solano and City of Benicia.

In-kind commitments:
MCSTOPPP: $2500
NCSPPP: $2500
City of Petaluma: $1250
City of Sonoma: $1250
County of Solano: $1250
City of Benicia: $1250

(**In-kind service**s include pre-planning and contract preparation, communication with cities, towns and counties who will use the guidance document, guidance document review and coordination, workshop planning meetings, and workshop participation and administrative assistance.)

Products:
- **All written materials will identify NBWA and agencies providing match (in-kind services) as guidance manual and workshop sponsors**
- Written workshop summaries with list of next steps and solutions and ideas for future effective implementation of E.12 requirements in the North Bay.
- List of workshop attendees
- Workshop effectiveness evaluation
- PowerPoint presentations-Workshop
- Final Guidance Manuals (4)

Work Plan –See attached Scope of Work

Scope of Work

Stormwater NPDES Phase II Provision E.12 Compliance Assistance for North Bay Municipalities

The California State Water Resources Control Board adopted a reissued Phase II Municipal Stormwater NPDES Permit (Permit) on February 5, 2013. Dan Cloak Environmental Consulting (DCEC) will assist North Bay municipalities and countywide stormwater programs to prepare for compliance with Section E.12, Post Construction Storm Water Management Program, of the Permit. The work will be coordinated through the Marin Napa Sonoma Solano Stormwater Agencies Association (MNSSSA).

Task 1: Project Coordination

DCEC will participate in up to three planning meetings at North Bay locations to identify permittee needs, refine the compliance approach, and discuss comments on draft documents. Meeting participants may include permittee staff, San Francisco Bay Regional Water Quality Control Board staff, State Water Resources Control Board staff, and interested parties. DCEC will assist MNSSSA participants (individual city/town staff or countywide program staff) with preparation of agendas and meeting summaries.

Task 2: Model Guidance Manual

DCEC will prepare a draft guidance document for use by applicants for development approvals and municipal staff of North Bay municipalities. The draft guidance document will be based on *Guidance for Applicants: Stormwater Quality Manual for Development Project in Marin County. A Low Impact Development Approach* (February 2008), prepared by the Marin County Stormwater Pollution Prevention Program (MCSTOPPP) with assistance from DCEC. The *Guidance for Applicants Manual* will be updated as necessary to incorporate the requirements of the Permit and to address the needs of all North Bay permittees. As required by the Permit, updates will address:

- Applicability of Provision E.12 (description of project types subject to requirements)
- Development Site Assessment
- Site Design Measures
- Source Control Measures
- Low Impact Development Design Standards
- Hydromodification Management Measures—this will be addressed based on currently available technical analyses
- Operation and Maintenance of Storm Water Control Measures

The Model Guidance for Applicants Manual will include a glossary. DCEC will incorporate one round of comments on the draft model guidance manual into a final model guidance manual.

DRAFT Schedule: DCEC shall complete draft Model Guidance for Applicants Manual by August 30, 2013. MNSSSA and NBWA Water Quality Technical Committee participants shall provide comments by September 30, 2013. DCEC shall incorporate comments by October 30, 2013 and shall use the revised draft Manual to complete Task 3 below.

Task 3: Guidance Manual County-Specific Versions

DCEC will prepare up to four versions of the guidance manual, one each for Marin, Sonoma, Napa, and Solano counties. DCEC will collect, via questionnaire and/or meetings, county-specific information needed for the versions, and will incorporate that information into drafts of each version. The extent of customization will be within the budget allocated for this task. DCEC will incorporate one round of comments on each version into a final draft of each version.

Task 3 DRAFT Schedule: DCEC shall complete county-specific guidance manuals by November 30, 2013. Representatives from cities, towns, and county, and MNSSSA/NBWA Water Quality Technical Committee participants shall provide comments on the applicable tailored guidance manual to DCEC by January 30, 2014. MCSTOPPP staff shall coordinate review of the manual throughout Marin, Napa Countywide Stormwater Pollution Prevention Program staff shall coordinate review of the manual throughout Napa, City of Sonoma staff shall coordinate review of the manual throughout Sonoma and City of Benicia or County of Solano staff shall coordinate review of the manual throughout Solano County. DCEC shall provide a tailored final Guidance for Applicants Manual to each county by February 28, 2014.

Task 4: Workshops

DCEC will prepare presentation slides for and will deliver up to three half-day workshops at North Bay locations. The workshops will be targeted to land development professionals and municipal development review staff and will focus on:

- Understanding the Provision E.12 requirements in the context of the development review process
- Using the guidance manual (prepared under the previous tasks) to prepare and review stormwater compliance submittals
- Low Impact Development—design of features and facilities in compliance with Provision E.12

The workshops will include one or more examples/exercises (either worked through or hands-on) and opportunities for questions and answers. DCEC will assist with agendas and participant surveys and will summarize the results of the surveys. MNSSSA participants will arrange and provide for a venue, conduct outreach, register participants, provide any needed refreshments, and copy agendas and other handouts (For Marin workshop, MCSTOPPP staff will implement these tasks, for the Sonoma workshop, City of Sonoma staff will implement these workshop tasks, for the Napa workshop, Napa Countywide Stormwater Pollution Prevention Program staff will implement these tasks).

Schedule

Complete all tasks by January 31, 2015.

Budget

All labor hours are for Dan Cloak, P.E., at $145/hour.

Task		Hours	Labor	Expenses	Total
1	Coordination	20	$ 2,900	$ 150	$ 3,050
2	Model Guidance	116	$ 16,820		$ 16,820
3	Guidance Versions	20	$ 2,900	$ 120	$ 3,020
4	Workshops	48	$ 6,960	$ 150	$ 7,110
			$ 29,580		**$ 30,000**

NBWA FY 2013-2014 Proposed Budget

Overhead and General Benefit Projects

			NBWA Cash Requirement					CASH ALLOCATION																
		In-Kind Services	NBWA staff	Other consultants	ODCs	Assumed grant contribution	2013 - 2014 Total Cash Budget	CMSA	Marin Co	LGVSD	Bel Marin Keys, SASM, City of Mill Valley	McSTPP	MMWD	NMWD	NapaSan	NapaFlood	NovatoSan	Petaluma	San Rafael	City Sonoma	Sonoma Co.	SCWA	SVCSD	NBWA TOTAL
A- Overhead																								
1	Board Meetings/Workshops	12,500	39,300	-	-	-	39,300	1,375	8,198	1,289	1,270	1,240	2,299	1,422	1,467	1,246	1,385	2,409	2,059	1,405	7,049	3,762	1,446	39,300
2	Board Meeting Minutes	3,000	4,560	-	-	-	4,560	159	951	150	147	144	267	165	170	145	158	280	239	163	818	436	168	4,560
3	Agency Coordination	-	13,680	-	-	-	13,680	478	2,854	449	442	432	800	495	511	434	475	839	717	489	2,454	1,309	503	13,680
4	Administrative Steering Comm.	-	4,460	-	-	-	4,460	156	930	146	144	141	261	161	166	141	155	273	234	159	800	427	164	4,460
5	Office support	4,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Overhead Subtotals	*20,000*	*62,000*				*62,000*	*2,168*	*12,934*	*2,033*	*2,004*	*1,956*	*3,628*	*2,244*	*2,314*	*1,966*	*2,153*	*3,800*	*3,248*	*2,216*	*11,121*	*5,934*	*2,281*	*62,000*
	Overhead Totals							*2,168*	*12,934*	*2,033*	*2,004*	*1,956*	*3,628*	*2,244*	*2,314*	*1,966*	*2,153*	*3,800*	*3,248*	*2,216*	*11,121*	*5,934*	*2,281*	*62,000*
B- General Benefit Projects																								
6	Public Outreach Materials	-	7,500	-	-	-	7,500	262	1,565	246	242	237	439	271	280	238	260	460	393	268	1,345	718	276	7,500
7	Committee Activities	-	27,360	-	-	-	27,360	957	5,708	897	884	863	1,601	990	1,021	868	950	1,677	1,433	978	4,907	2,619	1,006	27,360
8	Website	-	3,644	-	-	-	3,644	127	760	119	118	115	213	132	136	116	127	223	191	130	654	349	134	3,644
9	Data Management	-	10,000	-	-	-	10,000	350	2,086	328	323	316	585	362	373	317	347	613	524	357	1,794	957	368	10,000
10	Legislative Action*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	Watershed Council	-	22,800	-	-	-	22,800	797	4,756	748	737	719	1,334	825	851	723	792	1,398	1,195	815	4,090	2,182	839	22,800
12	NBWA Water Conference	-	5,000	-	-	-	5,000	175	1,043	164	162	158	293	181	187	159	174	306	262	179	897	479	184	5,000
13	Update of IRWMP	-	20,000	-	-	-	20,000	700	4,172	656	646	631	1,170	724	746	634	695	1,226	1,048	715	3,587	1,914	736	20,000
14	Contingency Reserve	-	20,000	-	-	-	20,000	700	4,172	656	646	631	1,170	724	746	634	695	1,226	1,048	715	3,587	1,914	736	20,000
	General Benefit Subtotals		*116,304*				*116,304*	*4,068*	*24,262*	*3,814*	*3,758*	*3,670*	*6,805*	*4,209*	*4,340*	*3,688*	*4,039*	*7,129*	*6,094*	*4,157*	*20,861*	*11,132*	*4,278*	*116,304*
	General Benefit Totals							*4,068*	*24,262*	*3,814*	*3,758*	*3,670*	*6,805*	*4,209*	*4,340*	*3,688*	*4,039*	*7,129*	*6,094*	*4,157*	*20,861*	*11,132*	*4,278*	*116,304*
FY 2013 - 14 TOTAL A + B		20,000	178,304	-	-	-	178,304	6,236	37,196	5,847	5,762	5,626	10,433	6,453	6,654	5,654	6,192	10,929	9,342	6,373	31,982	17,066	6,559	178,304
FY 2013 - 14 TOTAL A + B								6,236	37,196	5,847	5,762	5,626	10,433	6,453	6,654	5,654	6,192	10,929	9,342	6,373	31,982	17,066	6,559	178,304

Specific Benefit Projects

			NBWA Cash Requirement					CASH ALLOCATION																
Project #	C- Specific Benefit Projects	In-Kind Services	NBWA staff	Other consultants	ODCs	Assumed grant contribution	2013 - 2014 Total Cash Budget	CMSA	Marin Co	LGVSD	MCSD #5 (See Note 1)	McSTPP	MMWD	NMWD	Napa San	NapaFlood	NovatoSan	Petaluma	San Rafael	City Sonoma	Sonoma Co.	SCWA	SVCSD	NBWA TOTAL
1	Project "A"	-	-	-	-	NA	30,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	Project "B"	-	-	-	-	NA	30,000	Funded from prior year carryover.			-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	Project "C"	-	-	-	-	NA	20,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FY 2013-14 Specific Benefit Project Total		-	-	-	-		80,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NBWA Total for FY 2013-14		20,000	178,304	-	-	-	258,304	6,236	37,196	5,847	5,762	5,626	10,433	6,453	6,654	5,654	6,192	10,929	9,342	6,373	31,982	17,066	6,559	178,304

Note 1 City of San Rafael has withdrawn from NBWA. However, membership dues will be covered by carry over funding from prior years and FY 2013-14 membership dues will remain at prior year funding levels.

Note 2 Total Budget allocations based on 16 members (incl City of San Rafael).

FOR ACCESSIBLE
MEETING INFORMATION
CALL: (707) 543-3350
ADD: (707) 543-3031

TECHNICAL ADVISORY COMMITTEE

MONDAY, MARCH 4, 2013

9:00AM

Utilities Field Operations Training Center

35 Stony Point Road, Santa Rosa, CA

1. Check In
2. Public Comment
3. FY 2013/14 Draft SCWA Budget
4. SCWA Strategic Plan Workshops
5. Water Supply Strategies Action Plan Update 2013
6. Potential Projects for Further Evaluation
7. Biological Opinion Status Update
8. 02/26/2013 Sonoma County Board of Supervisors Meeting – Oral Health Update
9. Items for next agenda
10. Check Out

March 4, 2013
TAC Agenda Item #6

MEMORANDUM

To: Technical Advisory Committee February 26, 2013
From: Chris DeGabriele, General Manager
Subject: Potential Projects for Further Evaluation
t:\gm\scwa\potential projects for future evaluation\potential projects update 022513.doc

At the February 4 WAC/TAC meeting the WAC authorized the TAC and SCWA to identify available funding to engage consultants and conduct more in depth analysis of the following water supply sources:

1. Future Recycled Water For Non- Potable Uses and Off-Setting Potable Use
2. Aquifer Storage and Recovery- Potable Supply
3. Additional Groundwater – Water Contractor Production Wells
4. Additional Agency Supply – Groundwater Production Wells
5. Windsor Water Rights
6. Future Water Conservation
7. Additional Agency Supply – Russian River

Currently both local Water Contractor and SCWA funding is being expended for future Recycled Water development, Aquifer Storage and Recovery, SCWA Groundwater production, Local Groundwater production and Windsor Water Right Development.

It is my recommendation to hold off on spending SCWA or Water Contractor funds on Future Water Conservation and additional Russian River Supply until the 2015 Urban Water Management Plan work is undertaken. At that time the Water Contractors will hopefully engage a consultant to evaluate future water conservation. Subsequent to the 2015 Urban Water Management Plan preparation the Water Contractors and SCWA will have a better idea of the amount of additional Russian River Water Supply that may be necessary in the future.

Some additional information will be required from the Water Contractors and SCWA to monitor activities that are currently ongoing (items through 1 though 5 above). In the next few months I will be contacting the Water Contractors to identify plans and funding for Future Recycled Water, Participation in Aquifer Storage and Recovery Pilot Studies proposed by Sonoma County Water Agency, and Potential Development of Local Groundwater Production. Additionally, I will contact the Town of Windsor to get an update on their Water Right development status.

Once this information is available a schedule will be prepared to monitor progress in evaluating these potential projects and ultimately determining the most reliable, affordable, environmentally friendly water supplies that will meet the needs of current and future generations.

March 4, 2013
TAC Agenda Item #6

POTENTIAL REGIONAL, SUBREGIONAL AND LOCAL WATER SUPPLY PROJECTS FOR FURTHER EVALUATION

INTRODUCTION

Water purveyors are responsible for providing reliable, high quality water supply to current and future customers. In 2010, after a 16-month collaborative process among the Sonoma County Water Agency (Agency), the Water Contractors, Marin Municipal Water District (MMWD) and the public, the Agency Board of Directors adopted the Water Supply Strategy Action Plan (Action Plan). The Action Plan consists of nine water supply strategies developed to increase water supply system reliability, resiliency and efficiency and plan for the future, taking into consideration the numerous challenges and uncertainties that face our region. To help address Water Supply Strategy 5 – *Build Partnerships with Water Users that Facilitate Information-Based Water Supply Planning Programs*, Strategy 6 – *Implement Projects to Improve Transmission System Reliability,* Strategy 8 – *Implement Integrated Water Management Into Agency Programs*, and Strategy 8, Immediate Action 6 - *Work with water contractors to evaluate local and sub-regional projects that could be combined with regional Water Agency projects to increase overall water supply reliability in most cost-effective manner*, the Water Contractors and MMWD, in partnership with the Agency, have undertaken an analysis of existing and future water supplies. The goal of the analysis is to determine the most reliable, affordable, environmentally friendly water supplies that will meet the needs of current and future generations.

PURPOSE

The purpose of this document is to describe projects that the Technical Advisory Committee (TAC) believe are most viable for improving regional water supply resiliency with the goal of improving reliability and meeting water demand forecasts in accordance with each water contractors' and MMWD's Urban Water Management Plans. Because the Agency's transmission system facilities connect several local systems operated by individual water contractors, there may be opportunities to collectively manage these systems in a coordinated manner with a regional perspective to the benefit of all water contractors. For example, local or subregional water supply projects directly serving one or more water contractors can benefit all water contractors, may alleviate the need for more expensive regional infrastructure or may increase reliability of water supplies during times of constrained Russian River water supply conditions.

This document examines several new water supply opportunities, presents the results of a screening evaluation, and recommends certain projects to prioritize for further evaluation. It is envisioned that this analysis will be updated and revised as new information becomes available.

ANALYSIS – EXISTING SOURCES

Working collectively, the Water Contractors', MMWD and Agency staffs met and identified all currently known existing water supply sources. Six existing water supply sources currently provide the following volumes of annual water supply:

Existing Sources	Volume (Acre-feet/Year)
Existing Agency Supply - Russian River	75,000
Existing Agency Supply – Groundwater	2,300
Existing Groundwater – Local	2,600
Existing Water Conservation	4,055
Existing Recycled Water for Non-Potable uses and offsetting Potable Use	3,017
Existing Graywater for Non-Potable uses	1

It was determined by the Water Contractors', MMWD and Agency staffs that for purposes of this analysis, all necessary additional funding and activities will be implemented by the Agency, MMWD and Water Contractors to maintain these existing water supply volumes and that further evaluation of these existing sources is not required at this time.

ANALYSIS – FUTURE SOURCES

Working collectively, the Water Contractors', MMWD and Agency staffs met and identified all currently known future water supply sources. The list of all possible future water supply sources included the following:

Additional Sources
Additional Agency Supply – Russian River
Additional Agency Supply – Production Wells
Additional Groundwater – Water Contractor – Production Wells
Additional Groundwater – Water Contractor – Standby Wells
Future Water Conservation
Future Recycled Water for Non-Potable uses and offsetting Potable Use
Small Scale Recycled Water for Non-Potable Uses and offsetting Potable Use - Satellite treatment plants
Small Scale Storm water Capture (i.e. - Individual homeowner rain water harvesting for potable use; individual rainwater harvesting for non-potable use)
Aquifer Storage and Recovery - Potable Supply (i.e. - Winter water purchased from Agency; Agency storage of surface water in the ground)
Windsor Water Rights

Locally Driven Sources
Water Supply Agreement - Valley of the Moon, Sonoma and Sonoma Development Center
Raise Lake Stafford
Regional Sources
Desalination - Bay Area Regional Desalination
Large Scale Storm water Capture (i.e. – Service area-wide storm water capture for non-potable purposes; Service area-wide storm water capture & treatment for potable purposes)
Raise Coyote Valley Dam
Water Transfer from Humboldt Bay Municipal Water District
Aquifer Storage and Recovery - Other Supply (Recycled Water or Storm water)

All projects were screened by the Water Contractors', MMWD and Agency staffs at a conceptual, planning level for feasibility, regulatory, environmental and legal constraints, reconnaissance level capital and operation and maintenance costs, current status of studies and additional information needed. Upon completion of the initial screening, ten future water supply sources were identified for further evaluation and prioritization. Although some water supply sources will not be evaluated further at this time, over time, these sources may become more feasible and will be revisited from time to time to determine if/when they should be further evaluated and prioritized.

FEASIBLE FUTURE PROJECTS

The ten future water supply sources that were determined to be feasible were further evaluated by the Water Contractors', MMWD and Agency staffs and more detailed information was developed for each of these sources. Information included an analysis of the volume of water that could be provided based on existing UWMPs, review of any environmental, regulatory or legal constraints, a summary of known cost information, and consideration of rate payer impact.

The following ten water supply sources were determined to be feasible at this time and are recommended for further analysis. The projects are listed in no particular order.

Additional Sources
Future Water Conservation
Future Recycled Water for Non-Potable uses and offsetting Potable Use
Small Scale Storm water Capture (i.e. - Individual homeowner rain water harvesting for potable use; individual rainwater harvesting for non-potable use)
Additional Agency Supply – Russian River
Additional Agency Supply – Production Wells
Additional Groundwater – Water Contractor – Production Wells
Additional Groundwater – Water Contractor – Standby Wells

Windsor Water Rights
Small Scale Recycled Water for Non-Potable Uses and offsetting Potable Use - Satellite treatment plants
Aquifer Storage and Recovery - Potable Supply (i.e. - Winter water purchased from Agency; Agency storage of surface water in the ground)

New water supply projects developed by one or more water contractors will merit further analysis if the project promotes improved regional resiliency by increasing the overall reliability of water supplies (thus benefiting all water contractors) and/or helps to meet future water demands forecast in the water contractors' UWMPs. It is assumed that any additional supplies resulting from such new water supply projects will not result in a reduction of entitlement limits for a water contractor or replacement of future amounts of surface water that the Agency would provide to a water contractor, unless that water contractor agrees to such a reduction/replacement.

RECOMMENDATION

The Water Contractors', MMWD and Agency staffs further prioritized the list of water supply sources and recommends 7 sources be further evaluated. The Water Contractors', MMWD and Agency staffs recommend that the TAC and Water Advisory Committee (WAC) consider this list and, if recommended by the WAC, the Agency set aside funding for the TAC to solicit a consultant to conduct an analysis of the following future water supply sources, which are listed in no particular order:

Water Source: Future Water Conservation

- Estimated Volume of Water: Up to 15,545 Acre-feet
- Potential Costs: $218 – 529/acre-foot
- Constraints: Compliance with 20%x2020 needed; customer implementation.
- Ratepayer Impact: Costs as listed above.
- Issue: Project is not feasible unless it results in additional water supply for the contractor(s) developing the project.

Water Source: Future Recycled Water for Non-Potable Uses and offsetting Potable Use

- Estimated Volume of Water: Up to 2,649 acre-feet
- Potential Capital Costs: $6,000 – 50,000/acre-foot; varies based on pipeline alignment and storage needs.
- Potential O&M Costs: To be determined; varies per water contractor.
- Constraints: Approval from Department of Public Health and Regional Water Quality Control Board; CEQA compliance would be needed.
- Ratepayer Impact: Costs as listed above.
- Issue: Project is not feasible unless it results in additional water supply for the contractor(s) developing the project.

Water Source: Aquifer Storage and Recovery - Potable Supply

- Estimated Volume of Water: To Be Determined – Feasibility studies currently underway.
- Potential Capital Costs: To Be Determined – Feasibility studies currently underway.
- Potential O&M Costs: To Be Determined – Feasibility studies currently underway.
- Constraints: Approval from Department of Public Health and Regional Water Quality Control Board; CEQA compliance would be needed.
- Ratepayer Impact: Costs as listed above.
- Issue: Project is not feasible unless it results in additional water supply for the contractor(s) developing the project.

Water Source: Additional Agency Supply – Russian River

- Estimated Volume of Water: Up to 10,000 Acre-Feet/year
- Potential Capital Costs: To Be Determined.
- Potential O&M Costs: To Be Determined; Current wholesale cost is approx $650/Acre-Foot with estimated increases of 4-7% annually through 2030 for existing projects.
- Constraints: Regulatory changes to d1610; compliance with Endangered Species Act; CEQA compliance would be needed.
- Ratepayer Impact: Costs to be determined for additional water supply.

Water Source: Additional Agency Supply – Groundwater Production Wells

- Estimated Volume of Water: To Be Determined.
- Potential Capital Costs: To Be Determined.
- Potential O&M Costs: To Be Determined.
- Constraints: Information from USGS Study and collaboration with Santa Rosa Plain Groundwater Management Plan process needed; Approval from Department of Public Health; CEQA compliance would be needed.
- Ratepayer Impact: Costs to be determined for additional water supply.

Water Source: Additional Groundwater – Water Contractor – Production Wells

- Estimated Volume of Water: Up to 540 Acre-Feet/year
- Potential Capital Costs: $350 -1200/Acre-foot; Varies based on treatment and operational needs.
- Potential O&M Costs: $100 – 130/Acre-foot; Varies based on treatment and operational needs.
- Constraints: Approval from Department of Public Health; CEQA compliance would be needed.
- Ratepayer Impact: Costs as listed above.

- Issue: Project is not feasible unless it results in additional water supply for the contractor(s) developing the project.

Water Source: Windsor Water Rights

- Estimated Volume of Water: 4,725 Acre-Feet
- Potential Capital Costs: To be determined; Estimate $300,000 for CEQA compliance.
- Potential O&M Costs: To be determined.
- Constraints: State Water Resources Control Board approval needed; compliance with Endangered Species Act; CEQA compliance would be needed
- Ratepayer Impact: Costs to be determined for additional water supply.

March 4, 2013
TAC Agenda #8

MEMORANDUM

To: Technical Advisory Committee

March 1, 2013

From: Chris DeGabriele, Chair

Subject: Sonoma County Oral Health Update
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The County of Sonoma Department of Health Services presented a Sonoma County Oral Health update to the Board of Supervisors at their February 26, 2013 meeting. At the meeting, the County Health Officer presented a summary of the Sonoma County Fluoridation Assessment Draft Report (attached) and the Board of Supervisors unanimously adopted the following:

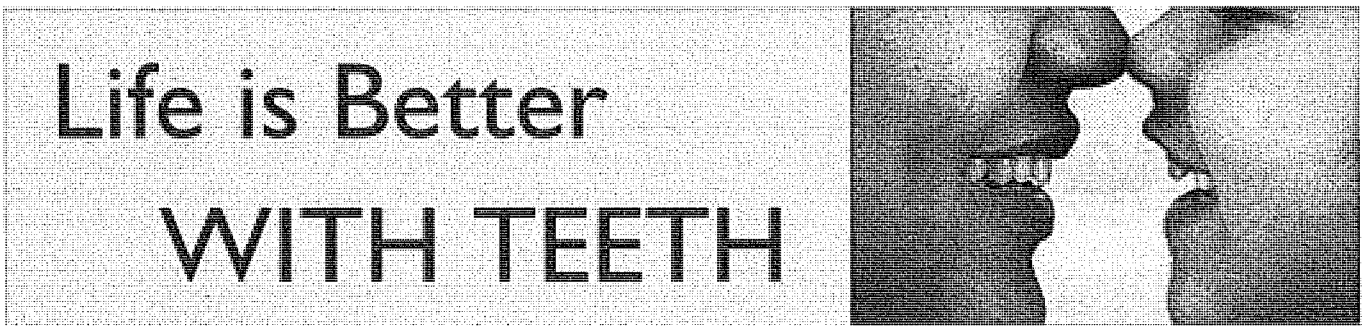
A) Accept staff report on continuing efforts related to oral health, and authorize various activities relating to promoting and advancing oral health in Sonoma County, including: an agreement with Community Action Partnership to lead community-based oral health activities; and an agreement with The Lew Edwards Group to develop a public education campaign related to oral health efforts.

B) Direct staff to continue efforts to analyze the potential of fluoridation in Sonoma County including: convening an advisory committee to provide guidance on the fluoridation assessments, planning and implementation process; enter into an agreement with California State University, Sacramento to facilitate the advisory committee and discussion with water retailers and community stakeholders; and an agreement with MWH Americas, Inc. to develop a Preliminary Engineering Design Report for fluoridation of Sonoma County Water Agency's drinking water supply.

The Board also directed staff to determine upfront costs and develop a financial plan; provide information on health risks, environmental impacts, and health impacts to pets; explore alternatives; expand the Advisory Groups' role to explore available funding sources; and include measures of success in the marketing and outreach components.

At the meeting I made comments on the information provided with the Board of Supervisors agenda packet (see Attachment 2). A copy of the Press Democrat article recapping the meeting is included as Attachment 3.

My understanding is that Sonoma County Water Agency is a public water system and is subject to the health and safety code provisions regarding fluoridation of its water supply. Those regulations provide that a public water system is not required to fluoridate if sufficient funding is not available from an outside source. North Marin does not believe that the Water Agency could unilaterally pass through the cost of fluoridation to the Water Contractors. This includes both capital and operation and maintenance (O&M) costs.



Sonoma County Fluoridation Assessment Draft Report

Prepared by:

Lynn Silver Chalfin, MD, MPH, FAAP
Sonoma County Health Officer

February 26, 2013

sonomacounty
DEPARTMENT OF HEALTH SERVICES

Rita Scardaci
Director of Health Services

Acknowledgement: This report was prepared with the assistance of the California Dental Foundation (CDAF), Ms. Marjorie Stocks and Engineer Lyle Hoag, with technical input from Sonoma County Water Agency and from surveys on water retailer systems. All cost estimates and system descriptions were prepared by CDAF. Percent of water supplied locally was from the Sonoma County Water Agency (SCWA). The summary of benefits and costs is primarily from the Centers for Disease Control and Prevention. The final report is the responsibility of the Sonoma County Department of Health Services.

Table of Contents

Executive Summary

Dental health problems continue to be a major source of preventable suffering and expenditures for Sonoma County residents of all ages. An epidemic of dental disease is compromising the health and quality of life of Sonoma County's children. Almost half of our kindergarteners and about 6 out of every 10 of our third graders have experienced tooth decay, and over 16 percent of them have *untreated* decay. Poor and Latino children have over twice the rate of dental disease of wealthier or white children. The elderly are also particularly severely affected by the discomfort, dangers and cost of dental disease. Left untreated, tooth decay often has serious consequences, including needless pain and suffering, difficulty speaking and chewing and lost days in school. For adults, this situation has been exacerbated by the discontinuation of Medical dental services in 2009.

Fluoridation is the single most cost-effective and equitable approach to improving dental health. Nevertheless fluoridation is only one of several tools needed to optimize oral health. These pillars of oral health also include education on good oral hygiene and dietary practices, provision of varnishes and sealants, access to dental care. Strengthening of each of these pillars is being pursued in concert in Sonoma County. Former Surgeon General Richard H. Carmona, MD said of water fluoridation that it "is a powerful strategy in our efforts to eliminate differences in health among people and is consistent with my emphasis on the importance of prevention." [1] After sixty years, water fluoridation remains the primary method of preventing dental caries in public health dentistry. In northern California, all the major cities except San Jose are fluoridated, and fluoridation in Santa Clara County in now beginning. That includes Sacramento, San Francisco, most of Contra Costa and Alameda counties, and southern Marin County. All the Peninsula communities that are served by the San Francisco Public Utilities Commission system are also fluoridated. In Sonoma County, only Healdsburg and the adjacent Fitch Mountain area, and the Coast Guard facility in Petaluma, receive fluoridated water.[2]

Creating local policy in favor of fluoridation is complex, and the progress in the communities named above has taken place over several decades. However, developments in California, beginning with AB 733 (the Fluoridation Act of 1996), have helped to move fluoridation forward, particularly in the

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[1] Surgeon General Richard H. Carmona, *Statement on Community Water Fluoridation, 2004*, U.S. Centers for Disease Control and Prevention. Retrieved on August 2, 2010, from http://www.cdc.gov/fluoridation/fact_sheets/sg04.htm/

[2] "Toothache: Unending Fight About Fluoride Leaves a Cavity in Kids' Health," *Sonoma Press Democrat*, May 20, 2008, retrieved on July 7, 2010, from http://www.pressdemocrat.com/article/20080520/OPINION/805200313/

metropolitan areas of southern California. In the last five years, the percentage of Californians who receive fluoridated water has risen from 27 to 58 percent.[3]

Although the Fluoridation Act of 1996 applies to retail water systems with over 10,000 connections, requiring them to fluoridate if funding is available, recent approaches to fluoridation have begun with an investigation of regional water delivery systems, which often involve a wholesale system. Most urban populations in the state are supplied by a wholesale water delivery system. Given the current economic climate, achieving optimally fluoridated water in the most cost-effective way possible is essential. Engaging wholesale systems often results in cost containment in the installation of fluoridation equipment. That would be the case in Sonoma County, where fluoridation of the major population centers would best be achieved by beginning with the fluoridation of the wholesale supplier, Sonoma County Water Agency (henceforth referred to as the Water Agency). For the cities of Santa Rosa, Petaluma, Rohnert Park, Cotati and Sonoma and the Valley of the Moon water district, the SCWA provided an average of 84 percent of the water supply over 4 years. Windsor receives a lesser percent of its water from SCWA.

The service area of the Water Agency includes communities served primarily by eight major retail systems, commonly called the Water Retailers. In addition to the Water Agency water that they purchase, each of the major Water Retailers owns and operates a retail water supply, herein referred to as "supplemental." Certain supplemental supplies of the retail systems may ultimately require installation of fluoridation equipment if they are to deliver optimally fluoridated water to their customers, if they are regularly used and supply significant volumes of water. In addition to the funding required for the Water Agency, financial challenges in the fluoridation of the supplemental supplies of these retail systems will need to be addressed over time. Financial planning for fluoridation should seek to minimize the impact on ratepayers.

Oral Health in Sonoma County

Oral health continues to be a major public health challenge in Sonoma County. This is particularly the case for the County's poor and minority residents. Access to dental services for children, while improving, remains precarious. Since State MediCal coverage of dental services was ended July 2009 as a result of the budget crisis, access for low-income adults has been an even more serious challenge for the safety net. Even

[3] The 27% figure is from the U.S. Centers for Disease Control and Prevention, *2006 Water Fluoridation Statistics*, retrieved on August 2, 2010, from http://www.cdc.gov/fluoridation/statistics/2006stats.htm/. The 58% figure is from an e-mail communication on August 3, 2010 from Rosanna Jackson, Chief of the Oral Health Unit of the California Department of Public Health.

for the middle class, care for caries, root canals, extractions and infections represent a frequent and significant burden of preventable suffering, lost productivity, and family expenditures. While the focus is usually on children, in reality poor dental health is also a particularly severe problem in pregnancy, and for the elderly. One third of poor elderly in the United States have no teeth remaining. Amongst middle aged adults, aged 45 - 64, nationally only 29 percent had a full set of permanent teeth (excluding third molars); this includes 19 percent of Hispanic adults and 11 percent of non-Hispanic black adults compared with nearly 35 percent of non-Hispanic white adults.[4]

Almost 25 percent of Sonoma County residents are under the age of 18.[5] In 2010, 13 percent of county families were living under the Federal poverty level. Over 40 percent of the County's school children are eligible for the free or reduced price meal program, with school districts in Santa Rosa, Petaluma, Sonoma, and Monte Rio having the greatest number of participants. According to a recent Community Health Needs Assessment, many of the County's poorest children live in a small number of low-income neighborhoods clustered along the Highway 101 corridor and in the Sonoma Valley, largely served by the Sonoma County Water Agency.

The Sonoma County Smile Survey of June 2009, an oral health assessment of a sample population of kindergarten and third-grade children, revealed that:

An epidemic of dental disease is compromising the health and quality of life of Sonoma County's children. Almost half of our kindergarteners and about 6 out of every 10 of our third graders have experienced tooth decay, and over 16 percent of them have *untreated* decay. Left untreated, tooth decay often has serious consequences, including needless pain and suffering, difficulty speaking and chewing and lost days in school.

Hundreds of Sonoma County kindergarteners and third graders in the study had serious problems from dental disease - abscesses, inflammation, and pain. All of these can lead to reduced school performance, lack of concentration, and absenteeism. Extrapolated to all school children in Sonoma County, thousands of school children are suffering from advanced dental disease. The problem is so severe that every day there are children in the County requiring treatment under general anesthesia, with its attendant risks, to manage dental disease.

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[4] Dye BA, Li X, Thornton-Evans G. Oral health disparities as determined by selected Healthy People 2020 oral health objectives for the United States, 2009–2010. NCHS data brief, no 104. Hyattsville, MD: National Center for Health Statistics. 2012.

[5] *Community Health Needs Assessment, Sonoma County 2008–2011.* Retrieved on June 3, 2010, from http://www.sonoma-county.org/health/ph/data/pdf/needsassessment2008.pdf/

Fewer than one in five children in Sonoma County have received dental sealants, a well accepted clinical intervention to prevent tooth decay on molar teeth.

Poor children and children of color are much more likely to have tooth decay and suffer the consequences of untreated disease. While even one third of white or high income children exhibit decay, two thirds of Latino or low-income children have decay. One of every five Latino children, and one in ten white children, needed early or urgent dental treatment.

Both of these studies recommended community water fluoridation as a primary means of preventing tooth decay and improving oral health.

Figure 1. Oral Health of Kindergarten and Third Grade Sonoma County Children by Percent

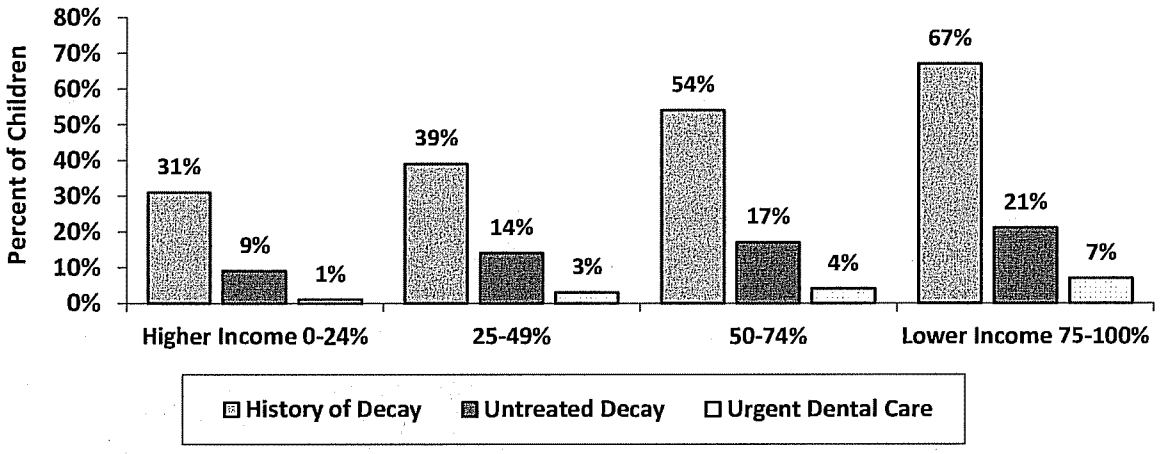

Table 1. Oral Heath of Kindergarten & 3rd Grade Children By Race/Ethnicity (Source:Sonoma County Smiles Survey, 2009)

Variable	Non Hispanic White % Children	Hispanic/Latino % Children
Number Screened	475	828
% With Decay	32	65
% with Untreated Decay	11	20
% Need Treatment (Early or Urgent)	11	19
% need Urgent Treatment	2	6
% 3rd Graders with Sealant	16	17

There are five basic pillars on which to improve dental health. The first and most wide reaching is fluoridation. The second is provision of dental sealants in school aged children. The third is the use of varnishes in infancy and childhood. The fourth is expansion of access to dental care. The fifth is education on appropriate personal dental habits, including brushing and flossing and good dietary practices. The United States Task Force on Community Preventive Services considers the first two, water fluoridation and school based sealant programs, the most strongly evidence based and recommends implementation of both.

In their review of the evidence,[6] the Task Force found that:

- Tooth decay typically decreased by 30 percent to 50 percent after starting or continuing community water fluoridation.
- In examining the effectiveness of school-based or school-linked dental sealant programs, there was typically a 60 percent decrease in tooth decay on the chewing surfaces of posterior teeth after sealant application. School-based and linked programs in the United States generally target vulnerable populations less likely to receive private dental care such as children eligible for free and reduced lunch programs.

The County is working to address **all** five of these. We are working with the Oral Health Task Force, the Sonoma County oral Health Access Coalition (SCOHAC), Community Action Partnership and Santa Rosa Junior College to expand delivery of dental sealants to elementary school children and to strengthen community education. Sealants however only prevent caries in molar teeth. WIC programs are expanding the regular use of fluoride varnishes in low income infants and young children. We are working through the Oral Health Task Force and with the major provider systems in the County to expand access to dental care, although care for low income adults continues deficient. However fluoridation continues to be the strategy that can reach the largest number of residents of all walks of life, permanently and at low cost, and contribute to preventing suffering and reducing disparities. Implementation of the other practices does not replace the value of fluoridation.

Fluoridation Safety and Effectiveness

While this report will not seek to review the scientific literature on the safety and efficacy of fluoridation in depth, a brief summary from the Centers for Disease Control and Prevention (CDC) is included below. Suffice it to say that both older and recent systematic reviews of the scientific literature, and new studies from around the world, continue to substantiate the important public

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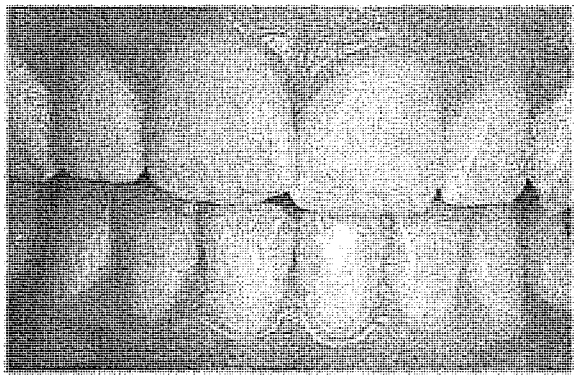
[6] United States Task Force on Community Preventive Services. Promoting Oral Health: Interventions for Preventing Dental Caries, Oral and Pharyngeal Cancers, and Sports-Related Craniofacial Injuries. MMWR November 30, 2001/50 (RR21) pp 1-13.

health benefits of fluoridation. No health problems have been substantiated as being associated fluoride at the levels used in water fluoridation with the exception of dental fluorosis, usually a minor cosmetic change, also associated with water supplies naturally high in fluoride. Many of the studies cited by those opposed to water fluoridation in fact take out of context literature on recognized problems associated with very high levels of fluoride in drinking water, levels much higher than that used for water fluoridation. Fluoride, like Vitamin A or salt, is not good to lack completely, keeps you healthy in small amounts, and causes harm in excess. Many countries use either water fluoridation, or salt fluoridation (not employed in the United States). A recent proposal by the Department of Health and Human Services lowers the recommended fluoride level for water to the bottom of the currently recommended range (0.7 mg/L). It responds to increases in fluoride intake from other sources and should reduce the occurrence of fluorosis, which is generally mild.



"Fluoride, like Vitamin A or salt, is not good to lack completely, keeps you healthy in small amounts, and causes harm in excess."

Reviews of scientific literature are an important resource to judge the safety of community water fluoridation. Scientific reviews are helpful because they:

- Consider evidence from published studies on a subject.
- Use carefully-designed methods to critically examine scientific evidence.
- Use national and international panels of experts in various health and scientific disciplines. This includes experts that may come from fields outside of oral health; such as, medicine, biophysics, chemistry, toxicological pathology, and epidemiology.
- Judge the quality of individual studies and summarize the strength of the entire body of evidence.

Scientific and public health organizations have conducted scientific reviews about fluoridation during the past two decades. These reviews provide compelling evidence that community water fluoridation is a safe and effective method for reducing tooth decay across all ages. While some developed countries have recently matched reductions in tooth decay of those in fluoridated countries, these are in general countries which created universal health and dental systems and have lesser income inequality than the United States. Sadly, income inequality is rising in the US and while access to health insurance is improving, dental coverage has deteriorated in California.

United States Public Health Service Review of Fluoride: Benefits and Risks, 1991

This report provides a comprehensive review and evaluation of the public health benefits and risks of fluoride from drinking water and other sources.

Institute of Medicine Dietary Reference Guidelines, 1997 [7]

These guidelines describe the dietary reference intakes for specific nutrients known to be beneficial to health including fluoride.

National Academy of Sciences on Fluoride in Drinking Water [8]

The National Academy of Sciences, and its National Research Council (NRC), has considered the health effects of fluoride in drinking water on several occasions, most recently 2006, when they evaluated the maximum allowable level in water. They recognized evidence of toxicity of fluoride naturally present in high concentrations in some settings and suggested that some effects may still be present at the current maximum level of 4 milligrams per liter (mg/L). That level however is more than 5 times the level currently recommended for water fluoridation of 0.7 mg/L.

Australian Government [9]

Australia's National Health and Medical Research Council (NHMRC) conducted a systematic review published in 2007 that considered recent evidence relating to the efficacy and safety of fluoride interventions, with an emphasis on widespread public health initiatives. The report, *A Systematic Review of the Efficacy and Safety of Fluoridation*, primarily addressed the caries-reducing benefits and associated health risks of providing fluoride systemically. The council found that:

- Community water fluoridation is beneficial for reducing dental caries (tooth decay).
- Water fluoridation at optimal levels does not affect the risk of bone fractures.
- There is no clear association between water fluoridation and overall cancer incidence or mortality.

The reviewed studies do not suggest an increased risk of adverse health effects at optimal fluoridation levels.

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[7] Institute of Medicine. Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride. National Academy press, Washington, D.C., 1997.
[8] Board on Environmental Studies and Toxicology (BEST), National Research Council. Fluoride in Drinking Water: A Scientific Review of EPA's Standards. National Academy Press, Washington DC 2006
[9] National Health and Medical Research Council of Australia. A Systematic Review of the Efficacy and Safety. Canberra 2007

NHMRC is Australia's main agency for supporting health and medical research; developing health advice for the Australian community, health professionals, and governments; and providing advice on ethical behavior in health care and conduct for health and medical research.

University of York

A systematic review of public water fluoridation was released in 2000 by the National Health Service (NHS) Centre for Reviews and Dissemination, University of York, United Kingdom.[10] This review looked at the evidence of positive and negative effects for community water fluoridation. They identified five objectives and evaluated the studies relating to each objective. Based on the best available research they found that:

- Community water fluoridation reduces tooth decay.
- Fluoridation is still effective even with the use of many other sources of fluoride.
- There is no clear association between fluoridation and bone fractures or cancer.
- There appears to be no difference between benefits from natural and artificial fluoridation.
- There is an association between the water fluoride concentration and the occurrence of dental fluorosis.
- No clear evidence of other potential negative health effects were found.

Cost Savings of Community Water Fluoridation

In general studies continue to show that widespread community water fluoridation prevents cavities and saves money, both for families and the health care system.

An Economic Evaluation of Community Water Fluoridation [11]

An analysis of the most current data available on the effectiveness and costs of water fluoridation. The study compares average per person cost of community water fluoridation with the cost of prevented disease. This study:

- Demonstrates that fluoridation not only is cost-effective, but also is cost saving, which is rare for public health interventions.
- Shows that the reduction in costs of fillings (dental restorations) greatly exceeds the cost of water fluoridation in communities of any size.
- Illustrates the annual per person water fluoridation costs for communities of various sizes.

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[10] NHS Centre for Reviews and Dissemination. Systematic review of the efficacy and safety of the fluoridation of drinking water. CRD Report 18. York: University of York. 2000

[11] Griffin SO, Jones K, Tomar SL. *J Public Health Dent* 2001;61(2):78–86

- Determines an average cost savings, which ranges from $15.95 per person per year in a small community to $18.62 per person per year in a larger community.

Water Fluoridation and Costs of Medicaid Treatment for Dental Decay - Louisiana, 1995-1996.[12]

Findings suggest that Medicaid-eligible children in communities without community water fluoridation had an increased cost for dental treatment per child that was twice as high as those children living in fluoridated communities.

Geographic variation in Medicaid claims for dental procedures in New York State: role of fluoridation under contemporary conditions [13]

This 2010 study found that, compared with the predominantly fluoridated counties, the mean number of restorative, endodontic, and extraction procedures per recipient was 33.4 percent higher in less fluoridated counties. The mean number of claims per child for caries-related services was inversely correlated with the extent of fluoridation in a county.

Environmental Safety Concerns

A recent review by Pollick [14] found that issues related to discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise have been found to be non-significant. Emissions of fluoride into the air are not released outside the well houses. Fluoride concentrations in rivers downstream of the discharges increase by less than 0.01 mg/L due to adding fluoride to the water supply system. In a literature review, Osterman found no instance of municipal water fluoridation causing recommended environmental concentrations to be exceeded. Nor does the concentration of fluoride in the treated water reach levels known to harm any plant or animal species.[11, 12]

While highly concentrated fluoride is corrosive, at the concentration found in potable water it is not, although pH may require adjustment. Concentrated fluoride does require that workers use appropriate occupational protection precautions.

Fluoride pollution, when it occurs, is unrelated to water fluoridation and comes from industries, particularly phosphate ore production and use as well as aluminum manufacture, mining, and coal burning.[28, 47, 48] Fluoride pollution is therefore recognized as an industrial hazard; however water fluoridation is not considered a potential source of fluoride pollution.[46]

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[12] *MMWR*, September 3, 1999; 48(34):753–757.
[13] Kumar JV, Adekugbe O, Melnik TA, Public Health Rep. 2010 Sep-Oct;125(5):647-54
[14] Pollick HF. Water Fluoridation and the Environment: Current Perspective in the United States. Int J Occup Environ Health 2004;10:343–350

Fluoridation is supported by the American Water Works Association, the World Health Organization (WHO), American Medical Association (AMA), Canadian Medical Association (CMA), Centers for Disease Control (CDC), American Dental Association (ADA), Canadian Dental Association (CDA) and many other professional organizations.

Fluoridation in California and Regional Approaches

In 2006, with just 27 percent of the population receiving the benefits of community water fluoridation, California was ranked 48th in the nation *in the percent of the population receiving fluoridated water* by the Centers for Disease Control and Prevention (CDC).[15] Recent gains by proponents based primarily in southern California have resulted in a substantial increase in the number of Californians drinking fluoridated water, including the residents of the City of Los Angeles and the City of San Diego. Now, more than 58 percent of Californians drink optimally fluoridated community water.

This paper will (a) describe the water delivery system in southern Sonoma County that is served by the Water Agency and eight retailers, (b) provide a rough cost estimate to fluoridate the Sonoma County Water Agency system, and (c) highlight the barriers and challenges to fluoridation.

As a result of the Fluoridation Act of 1996, and subsequent grant funding from The California Endowment, a dramatic change occurred in the state relative to fluoridation. Extensive work has been done to educate communities on the health benefits of fluoridation. Legal and legislative efforts have underscored the intent of the Fluoridation Act to make fluoridation a matter of statewide concern. The Act was written to apply to retail delivery systems. However, engagement of major wholesale systems in the state has changed the current approach to fluoridation. The fluoridation of the Metropolitan Water District of Southern California (which is the largest urban wholesale water district in the state) and the fluoridation of the San Francisco PUC site at Sunol Valley (which serves the Peninsula) have resulted in cost efficiencies in engineering and in greater population numbers being served. Fluoridation provided by a wholesale Water Agency typically negates the need to install equipment at each turnout to the retail systems it supplies.

A Regional Approach

Given the success of fluoridation proponents in working with wholesale distributors, such as the Metropolitan Water Agency, recent planning for fluoridation has become more regional in nature, rather than more locally focused, as it used to be. From the perspective of both engineering and cost, logic favors an approach to fluoridation that begins with wholesale agencies. Most communities in California are served by a configuration of wholesale and retail water suppliers.

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[15]U.S. Centers for Disease Control and Prevention, *2006 Water Fluoridation Statistics*, retrieved on August 2, 2010, from http://www.cdc.gov/fluoridation/statistics/2006stats.htm/

Retail agencies served by a wholesale Water Agency need to be involved in the latter's decision to fluoridate, because retail agencies will frequently supplement their water supply with groundwater or water from other sources to which fluoride has *not* been added. Therefore, in order to provide optimal level of fluoridation in the distribution system, some retail agencies may need to install fluoridation equipment at their sites. This may be the case with some retail customers of the Sonoma County Water Agency.

In Sonoma County there are approximately 139 local providers of water. Twenty of these have over 1000 service connections. Only two are over 10,000 connections.

Table 2. Sonoma County Water Retailers with Over 1,000 Connections

Water System Name	Service Connections	Population
City of Santa Rosa	54,603	157,985
City of Petaluma	19,125	55,900
City of Rohnert Park	9,095	42,650
Town of Windsor	9,052	26,955
Valley of the Moon Water District	6,854	23,858
City of Healdsburg	4,431	11,254
City of Sonoma	4,214	10,807
City of Cloverdale	3,114	8,200
City of Sebastopol	2,885	7,750
City of Cotati	2,575	7,532
Sweetwater Springs CWD – Guerneville	2,522	6,000
California-American Larkfield (PUC)	2,367	7,775
Sea Ranch Water Company (PUC)	1,838	1,299
Russian River County Water District	1,255	3,400
Sonoma State University	1,100	8,700
Sweetwater Springs CWC – Monte Rio	1,063	3,000
Bodega Bay Public Utility District	1,058	1,423

Source: CDPH Drinking Water Field Operations Branch

The **Sonoma County Water Agency** is the largest single source of water in the county. There are eight major retail systems that purchase water from the Water Agency and their representatives serve as an advisory committee to the Water Agency's Board of Directors. These eight major customers provide treated water to the communities in southern Sonoma County and northern Marin County. The Water Agency also supplies supplemental water to the Marin Municipal Water District, which serves the communities in southern Marin County. Marin Municipal currently fluoridates its water supply.

Wholesale distributors are not impacted by the Fluoridation Act. Therefore, to gain widespread support for fluoridation, it is important for fluoridation proponents to work with the wholesale distributors' customers. Presenting wholesale fluoridation's economies of scale to decision-makers has been a key point in this often prolonged and sensitive process.

Legal and Legislative Support for Fluoridation

The Fluoridation Act requires retail systems of 10,000 service connections or more to fluoridate their water supplies when funds are provided from an outside source. In Sonoma County, only Petaluma and Santa Rosa are over the 10,000 connection limit that would require them to fluoridate if funding is available. The Act applies to retail systems, but due to the configuration of wholesale and retail sources in metropolitan areas, the impact of the Act is often realized after the wholesale system in a region begins fluoridation. Frequently, the water supplied by wholesale systems is blended with supplemental sources by retail systems. Depending on the percentage of water supplied by the wholesale system considerable benefit for oral health can be obtained, however if wholesale water is mixed with significant amount of local water the level of fluoridation can be "suboptimal" for caries prevention. To adjust this, many retail systems install fluoridation equipment.

One challenge for many retail systems has been that while engineers may be able to design and build cost-efficient fluoridation systems for treatment plants and wells, they tend to resist construction at turnouts - that is, connections from a wholesale distributor. This is because these connections, having often been created decades ago, now lie in areas that are hard to access, which makes the costs prohibitive. Furthermore, obtaining the necessary land and permits can be costly and time-consuming.

In 2004, the Fluoridation Act was amended by SB 96 (Alpert/San Diego) which was designed to clarify funding provisions and address issues for retailers receiving water from multiple sources. In addition, SB 96 added language declaring that the Fluoridation Act preempts local regulations, ordinances, and initiatives that prohibit or restrict fluoridation of drinking water by public water systems subject to the Act.

California courts have upheld the Fluoridation Act declaring that it preempts local efforts to prohibit fluoridation of water systems subject to its requirements.[16] Courts have also rejected private citizen challenges to fluoridation claiming the addition of fluoride violated their constitutional rights. In rejecting such claims, the court stated there is no fundamental constitutional right to fluoride-free

[16] *City of Watsonville v. California State Department of Health Services*, 133 Cal. App. 4th 875 (2005), review denied.

water and that fluoridation is a reasonable and proper exercise of the police power in the interest of public health.[17]

Due to the application of these legislative and legal efforts, communities in California continue to fluoridate their water supplies. Most notable is the change in the largest city in the nation that lacked fluoridated water - San Diego - which began providing optimal fluoridation to residents in 2011. The Board of Supervisors of Santa Clara County approved a measure to move forward on fluoridation in December 2012.

Funding for Capital Costs and Coalition Support

Capital funding for fluoridation in other parts of the state has been provided by The California Endowment and the county - level First 5 Commissions of San Diego, Sacramento, and Los Angeles. Early in the statewide fluoridation effort (1990s), support for community activity was provided by The California Wellness Foundation. The PEW Charitable Trusts currently has an oral health initiative, of which fluoridation is a part, but does not fund large capital projects. The Health Trust is supporting Santa Clara County's efforts. Local foundations have provided small grants for community education and coalition activity. Community leaders have engaged federal and state legislative representatives to seek appropriations for capital funding. In general efforts have used approaches that seek to minimize any potential impact on ratepayers.

Description of Water Systems and Capital Estimates

Obtaining clear cost estimates for fluoridation is an essential component of the planning required for policy development. The following sections provide an overview of (a) the water production facilities of the Water Agency and the Water Retailers, and (b) the communities they serve. The sections also provide (a) rough conceptual estimates by CDAF for installing fluoridation facilities, and (b) rough estimated operating costs for the first year. Table 1 provides estimated capital and operating costs for centralized fluoridation of the Water Agency. Table 2 illustrates the higher estimated costs of fluoridating SCWA water at all of the turnouts. Table 3 provides additional information on the percent of water supplied locally, supplementary local sources, and natural fluoride levels.

The Sonoma County Water Agency

The Water Agency operates a wholesale water supply and transmission system that operates under a Board of Directors, which is composed of the Sonoma County Board of Supervisors. The Water Agency provides potable water for roughly 600,000 people in Sonoma and Marin counties.

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[17] *Coshow, et al. v. City of Escondido, et al.*, 132 Cal. App. 4th 687 (2005), review denied.

According to 2011 data, the average fluoride concentration in the Sonoma County Water Agency's two collectors is 0.13 mg/L, well below the level recommended.

The Water Advisory Committee (WAC)

The WAC, which meets quarterly, represents the major municipal systems and water districts that receive water from the Water Agency. The members of the WAC are also called the Water Agency's Prime Water Retailers (or Water Retailers). The WAC is composed of eight elected officials from the districts and communities served by the Water Agency. Each member is appointed by his or her council or board. The purpose of the WAC is to advise the Water Agency's Board of Directors on policy and fiscal matters affecting the Water Retailers. An affirmative ballot requires a minimum of five votes and 50 percent of the weighted vote (which is based on usage).

The member agencies of the WAC include:

- City of Cotati
- North Marin Water District
- City of Petaluma
- City of Rohnert Park
- City of Santa Rosa
- City of Sonoma
- Valley of the Moon Water District
- Town of Windsor

The liaison from the Water Agency Board of Directors to the WAC is Supervisor Efren Carrillo.

The Technical Advisory Committee (TAC), which meets monthly, is a second tier of the WAC that advises on decisions regarding water supply issues in the Water Agency's service area.

Water Agency Customers

In addition to the eight Water Retailers, the Water Agency serves approximately fifty other customers. However, the discussion surrounding capital and operating costs in this report will essentially be limited to the 8 Water Retailers. The Water Agency also sells water to Marin Municipal Water District and to California American Water, Larkfield District, and supplies Forestville but they are not part of the WAC.

Water Agency Production Facilities

The Water Agency's water originates from six Collector Wells (or caissons), seven production wells along the Russian River, and three wells in the Santa Rosa plain.

Collector Wells. Six collector wells extract water from the aquifer beneath the streambed adjacent to the Russian River, near Wohler and near Mirabel. Chlorine is added to water pumped from the collector wells at two active chlorination facilities to provide a residual amount of disinfection. Additionally, the pH of the water is adjusted for corrosion control purposes.

Russian River Well Field. Seven vertical wells at the Mirabel Road site, collectively called the Russian River Well Field, draw water from the aquifer adjacent to the Russian River. Chlorine is added to the supply and the pH of the water is adjusted for corrosion control purposes.

Santa Rosa Plain Wells. Three vertical groundwater supply wells are located along the Russian River Cotati Intertie pipeline in the Santa Rosa Plain: the Occidental Road Well, the Sebastopol Road Well, and the Todd Road Well. Chlorine is added to the supply.

Proposed Fluoridation Sites and Capital Estimates

Rough planning-level cost estimates have been prepared for construction costs, capital costs, and first-year operation and maintenance (O&M) costs for the Water Agency water supply system.[18]

Several of the local water systems of retailers use groundwater, primarily or exclusively, for meeting peak demands or emergencies. Many of their wells are of small capacity and on constrained well sites. The per-gallon cost of providing fluoridation at each well would be so high that it would be prudent to investigate alternatives, such as using controlled source water blending, combining sources for treatment, or designating some wells as standby sources. Given these factors, a study of which wells need to be addressed and of alternative approaches to fluoridating seems particularly appropriate for the cities of Petaluma and Rohnert Park, the Valley of the Moon Water District, and perhaps others.

The Sonoma County Water Agency supplied approximately 84 percent of the water provided to customers by its retailers (excluding Windsor) in Sonoma County between in 2007-2011, (87% in 2007, 86% in 2008, 80% in 2009, 82% in 2010 and 84% in 2011). Therefore almost two thirds of the population of the county would receive near optimally fluoridated water through fluoridation of the SCWA. In Windsor the agency provides only approximately 12 percent of the water (with SCWA serving primarily a non-residential area) and the percentage in Marin County is lower, however Marin Municipal Water district already fluoridates. Fluoridation at these levels (with the exception of Windsor) would provide substantial health benefits, and local fluoridation of supplementary sources,

[18] A questionnaire was distributed to the Prime retailers and the California American Water Company to obtain site-specific information about the supplemental sources. Nearly all the systems responded. When a response was not obtained, information was obtained from the system's website.

as appropriate, could proceed gradually over a period of years to achieve optimal fluoridation where local sources are significant suppliers.

Water Agency engineers anticipate five source points for installing new fluoridation equipment. The rough estimated costs for fluoridation facilities at the source points, and the first year estimated annual costs for operating and maintaining the system, are presented in Table 1 below. The next step to obtain more refined estimates of cost would be to carry out a preliminary engineering design plan after an on-site assessment.

Table 3: Estimate of Costs for an Optimally Cost-Effective First Step: Fluoridation at Water Agency Sites (Source: California Dental Foundation 2012)

Site	Cost
Wohler Collector	$2,700,000
Mirabel Collector	$2,700,000
Occidental Well	$390,000
Sebastopol Well	$390,000
Todd Well	$390,000
Total Expected Capital Costs	$6,570,000
Contingencies, 30%	$1,971,000
Total Planning-Level Capital Cost	**$8,541,000**
Total First Year O&M Cost	**$973,000**
Capital Cost per Sonoma County Connection served	**$67**

The efficiency of approaching the Water Agency to assist the retail agencies in reaching a uniform level of fluoride in their systems is clear. If all eight customers sought to fluoridate at the turnouts, the capital costs could be as high as $22 million (Table 4). The regional approach to fluoridation negates the need to advocate for a costly and complex system of fluoridation at individual turnouts.

Distribution

The Water Agency distribution system consists of about 156 active turnouts, of which 74 serve the Water Retailers. If the Water Agency did not fluoridate, each turnout would require installation of equipment similar to that used at a well site, with an average capital cost of $300,000 per turnout. Table 4 provides an overview of the Water Retailers, the number of active turnouts, and the estimated cost to fluoridate at the turnouts, and indicates whether the Water Retailers are subject to the Fluoridation Act, once funds are provided.

Table 4: Higher Cost Approach: Fluoridation of SCWA Water at Each Turnout*

Retail System	Active Turnouts	Approximate Number of Service Connections	Estimated Average Capital Cost to Fluoridate Turnouts	Subject to Fluoridation Act
Cotati	2	2,500	$600,000	No
N. Marin W.D.	2	20,575	$600,000	Yes
Petaluma	7	19,300	$2,100,000	Yes
Rohnert Park	11	8,900	$3,300,000	No
Santa Rosa	40	57,000	$12,000,000	Yes
Sonoma	1	3,381	$300,000	No
Valley of the Moon W.D.	10	6,800	$3,000,000	No
Windsor	1	9,200	$300,000	No
Total	**74**	**127,656**	**$22,200,000**	
Capital Cost per Sonoma County Connection Served			**$173.90**	

*The Estimated Average Capital Cost to Fluoridate at the Turnouts is calculated by multiplying the average cost per turnout ($300,000) by the number of turnouts. Source: California Dental Foundation 2012.

Supplemental Sources for the Water Retailers

All of the Water Retailers supplement the water purchased from the Water Agency with local supplies, mostly from groundwater wells. Typically, water sources contain some level of fluoride. The optimal level of fluoride for caries prevention benefit, while minimizing dental fluorosis, is 0.7 mg/L , as recommended by the Department of Health and Human Services.[19] The HHS proposed recommended optimal level of 0.7 mg/L is set to promote public health benefits of fluoride for preventing tooth decay while minimizing the chance for dental fluorosis. The EPA's enforceable maximum standard for the highest level of fluoride that is allowed in public water supplies is 4.0 mg/, and is set to protect against risks from exposure to too much fluoride. Table 3 below illustrates the primary communities served by the retail system, the average percent of water from the SCWA 2007-2011, the number and nature of supplemental sources of water, the current average fluoride levels in the supplemental sources. Additionally Forestville is fully supplied by SCWA water. It is evident that the percent of water supplied locally varies widely, and that the cost of fluoridation per connection served by the retailer could vary enormously between retailers, if a strategy of fluoridating <u>all</u> sources were used rather than starting with the wholesaler. This strongly suggests that, after fluoridation of the wholesale supplier, a careful mapping and analysis of local sources,

[19] This agrees with the current CDC recommendation regarding optimal fluoride levels. http://www.hhs.gov/news/press/2011pres/01/20110107a.html, retrieved on November 22, 2011

their volume and distribution, and of alternative approaches, would be a critical next step to assess which sources it would sensible to fluoridate is addition to the wholesaler and with what priority for an optimally cost effective approach. These preliminary analyses suggest that after SCWA, fluoridation of Windsor and of selected wells from Rohnert Park and from Valley of the Moon Water District might serve the largest number of residents with a lesser percentage from of water from SCWA. However even Rohnert Park, Valley of the Moon and Cotati, with the lowest percentage of SCWA water after Windsor, would benefit substantially from SCWA fluoridation.

Table 5: Characteristics of supplemental SCWA local water retailer systems

Contractor	Major Communities Served	Average% of Water from local sources 2007-2011*	Approx. Number of Service Connections	Active Local Sources	Current Fluoride Level (mg/L)
Cotati	Cotati	31.4	2,500	3 wells	0.26
North Marin W.D.	Novato	23.4	20,575	1 Treatment plant	0.10
Petaluma	Petaluma	8.1	19,300	8 wells	0.18
Rohnert Park	Rohnert Park	26.44	8,900	30 wells	0.05
Santa Rosa	Santa Rosa	5.3	57,000	2 wells	0.21
Sonoma	Sonoma	4.34	3,381	5 wells	0.38
Valley of the Moon W.D.	Sonoma (part); Glen Ellen; Agua Caliente; Fetters Hot Springs, Boyes Hot Springs; El Verano	16.2	6,800	6 wells	0.1
Windsor	Windsor	88**	9,200	5 wells	not available

* Source: CDAF 2012

** T. Schram SCWA

Description of Estimates

Obtaining a final estimate for capital and operating costs is often a process of negotiation between the funding agency and the water system. The amended Fluoridation Act allows for a state-appointed engineer to intervene in the process of developing a reliable estimate for a retail system. In theory, this provision should help to contain capital costs. However, it is important to remember that the state does not intervene in the determination of the design for fluoridation installation. Therefore, every local water system can design and build to its unique standards.

Cotati: Cotati is the smallest incorporated community in Sonoma County, with a population of approximately 7,100 residents. The percent of water received from SCWA between 2007 and 2011 was 69 percent. The city has two turnouts from the Water Agency and three wells that are chlorinated individually.

The City Council has five members, who are elected at large and select the Mayor from among themselves.

North Marin Water District: This district has two systems, one that serves Novato and the other that serves the Point Reyes area in West Marin. For this report, we are interested in the system that purchases water from the Water Agency and serves the City of Novato's approximately 53,000 residents. This system is supplemented by the surface water treatment plant at Stafford Lake.

The North Marin Water District receives approximately 80 percent of its water from its two turnouts from the Water Agency Aqueduct (77% between 2007 and 2011). The Stafford Water Treatment Plant is owned by the North Marin Water District and supplies approximately 20 percent of Novato's water. The plant is typically operated in the spring through early fall to supplement the supply from the Water Agency. Because it provides surface water, full treatment of the supply is required.

The North Marin Water District is governed by a five-member elected Board of Directors.

Petaluma: 92 percent of the water (2007-2011) supplied to the approximately 60,000 residents of Petaluma came from the city's seven active turnout connections from the Water Agency. The city supplements that supply with eight local groundwater sources. The Petaluma City Council governs the city's municipal water supply. The Council consists of six members and the Mayor, who is elected at large.

Rohnert Park: Rohnert Park provides treated water to its approximately 43,000 residents primarily from 11turnouts from the Water Agency (providing 74 percent of the water supply 2007-2011.). The water supply is supplemented with water from a series of 30 groundwater wells located throughout the city. The water distributed from city wells is treated with chlorine.

The high number of wells in Rohnert Park and the attendant cost to fluoridate at each well site requires consideration of an alternative approach to achieve optimal fluoridation over time. Some alternatives mentioned previously include: using controlled source blending, combining sources for treatment, or designating some wells as standby sources.

The five-member City Council governs the city's municipal water supply.

Santa Rosa: The City of Santa Rosa is the Water Agency's largest retail customer. Most of the water supplied to the approximately 150,000 residents is received from the Water Agency through 40 active turnout connections (95% 2007-2011) Fluoridation of the SCWA would result in very close to optimal fluoridation of Santa Rosa's water benefitting over one third of County residents, including many low income residents. A small portion of the city's water supply is produced by groundwater wells.

The Santa Rosa City Council, which has seven members elected at large, one of whom is selected as Mayor, governs the retail water system.

Sonoma: The City of Sonoma water system serves a population of approximately 9,000 residents. The city receives treated water from the Water Agency from one turnout, representing 96 percent of its water in 2007-2011. In addition, it has five active groundwater wells.

The City Council has five members elected at large, who select the Mayor from among themselves and oversee all municipal operations.

Valley of the Moon Water District: The service area of this district encompasses a population of approximately 23,000 residents in Glen Ellen and the Sonoma Valley. It receives treated water from the Water Agency from 10 turnouts, which provide 84 percent of its water 2007-2011, and supplements that supply with six groundwater wells and one leased well.

A five-member board of directors governs the district, with each director elected at large for a four-year term.

Windsor: The Town of Windsor's approximately 26,000 residents are served by Water Agency water and supplemental wells. Windsor has one direct connection from the Water Agency, Five large wells located adjacent to the Russian River, and three emergency wells. The supply is predominantly from local wells.

The Windsor Town Council consists of five elected Council members, one of whom is chosen by the Council to serve as Mayor. The Town Council also serves as the Board of Directors for the Windsor Water District.

Other Customers of the Water Agency: Included in the customers of the Water Agency are additional permitted retail water systems, agricultural users, and institutional users.

Additional Retail Systems: California American Water Company (Cal American) serves the unincorporated area of Larkfield-Wikiup and the township of Fulton with 2,400 service connections. Cal American purchases Water Agency water through one turnout. In order to supply optimally fluoridated water to their customers, Cal American would have to fluoridate at their treatment plant where the water from the wells is blended.[20]

Kenwood Village Water Company is an example of a smaller retail customer of the Water Agency that may have considerations similar to those of the Water Retailers. As mentioned previously, the

[20] The capital and O&M estimate for Cal American can be found in Appendix A, page 37.

Water Agency supplies supplemental water to the Marin Municipal Water District which currently fluoridates its water supply.

Agricultural Users: Many of the Water Agency's 60 customers use "surplus agricultural water." It would be helpful to discover to what extent groundwater sources are used by the growers in addition to water purchased from the Water Agency, since growers may have a concern for the potential of increased costs for water used in irrigation and in processing their products.

Institutional Users: The Sonoma Developmental Center is an example of an institutional customer of the Water Agency.

Community/System Impact

If the Water Agency were to fluoridate its water supply, the communities served by the Water Agency's retail customers would be impacted in the following manner. The largest city in the Water Agency's service area, Santa Rosa, as well as the City of Sonoma, would derive the greatest benefit and would receive almost optimally fluoridated water. Santa Rosa has 40 turnouts, the greatest number of turnouts from the Water Agency, with relatively few wells. The costs to fluoridate through the Water Agency would be significantly lower than if Santa Rosa were to fluoridate at its turnouts. Similarly, Petaluma would also have well over 90 percent of their supply well fluoridated. These three areas represent 62 percent of the connections amongst these Water Agency retailers (Figure 1).

Rohnert Park, Cotati, and Valley of the Moon would still derive significant clinical benefit from substantial but partial fluoridation as they would have a third, a quarter, and a sixth of their supply respectively unflouridated with fluoridation of SCWA alone. Windsor's water would receive little fluoride. The number of wells and costs involved will represent a greater challenge. These Water Retailers could have a relatively greater number of supplemental sources and higher costs to bring their systems up to optimal, however the real cost of *an ideal* fluoridation strategy for each city requires further study and analysis well by well to identify appropriate priorities and technology.

Communities Not Served by the SCWA

Of the County's incorporated areas, only the Cities of Cloverdale, Sebastopol and Healdsburg are not served by SCWA, and Healdsburg has been fluoridating its water since 1952. A significant part of the county's population resides in unincorporated areas not served by the SCWA, served either by individual wells or small water companies. Further assessment of the feasibility and cost of fluoridation of water supplies for these additional locations is warranted, as is the case for Windsor. None are covered by the 1996 law fluoridation requirement.

Potential Support to Fluoridation in Sonoma County

In general fluoridation receives broad support from the medical, dental, and public health communities, and others familiar with the burden of dental disease. Most people in the United States and many other countries reside in communities that support and maintain fluoridation as a public health service. Locally, for example, the Sonoma County Oral Health Task Force, representing many leading health organizations; the County Maternal and Child Health Advisory Committee, also representing a large number of local community organizations; the Sonoma County Medical Association; St. Joseph's Health; Sutter Health; Santa Rosa Community Health Centers; and other health providers have expressed support.

Potential Concerns to Fluoridation in Sonoma County

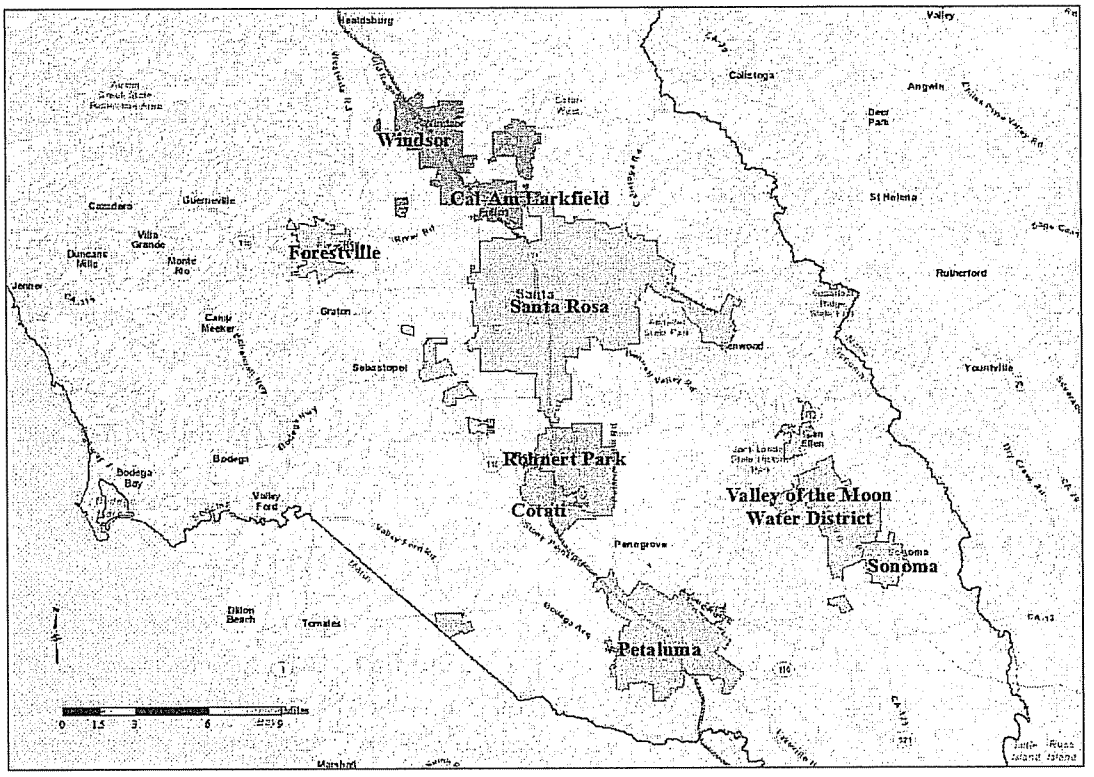
Possible concerns about fluoridation in Sonoma County may arise from three primary sources: agricultural, environmental, and water interests.

Agricultural interests served by the Water Agency may have concerns about how fluoridated water will impact the safety or taste of their products and the sales of those products. Although it has been demonstrated that fluoridated water does not affect the safety or taste of agricultural products, it is important to address the potential concerns of growers. Healdsburg has long maintained its successful agricultural endeavors with fluoridated water in place.

Environmental concerns about fluoride are generally expressed through various local community grassroots environmental organizations. It is important to engage these organizations to understand their concerns and attempt to educate the community on the scientific basis of fluoridation. No significant negative environmental impact of water fluoridation has been established. Concerns may be framed as protecting freedom of choice, while fluoridation advocates argue that the public water supply is designed to protect public health and it is more important to protect people's health than to protect some people's concern for their freedom to use unfluoridated water.

There are several organizations in Sonoma County that are involved with water-related issues, such as distribution, conservation, and pollution. Local water retailers and political leaders express concern about how the cost of fluoridation will be addressed and what impact it will have on their ratepayers. Several individuals have expressed concerns over fluoridation efforts in the county, and further input from this sector is expected. The Department of Health Services has held a number of meetings to receive input from all sides of the debate and will continue to do so. It will be important to hear the opinions of all, to broadly engage and educate members of the community and to seek to address any concerns raised. Fluoridation has, unfortunately, not been the object of consensus in many communities, and the creation of public policy has generally required weighing the public benefit for many in relation to the concerns of some residents.

Figure 2. Approximate Percentage of Local Water in Communities served by the Water Agency that would be fluoridated with Initial Fluoridation of the Sonoma County Water Agency alone.



Retailer	Average % of Water from Sonoma County Water Agency 2007-2011	Approx. # of Service Connections	Active Local Sources	Current Fluoride Level (mg/L)
Forestville	100%	909	0	-
Sonoma	96%	3,381	5 wells	0.38
Santa Rosa	95%	57,000	2 wells	0.21
Petaluma	92%	19,300	8 wells	0.18
Valley of the Moon W.D.[1]	84%	6,800	6 wells	0.1
Subtotal Approximate Number of Service Connections		87,390		
Rohnert Park	74%	8,900	30 wells	0.05
Cotati	69%	2,500	3 wells	0.26
Subtotal Approximate Number of Service Connections		31,975		
Cal-Am Larkfield	30%	2,367	5 wells	-
Windsor	12%	9,200	5 wells	-
Subtotal Approximate Number of Service Connections		11,567		

[1] Serving Glen Ellen; Agua Caliente; Fetters Hot Springs; El Verano; and part of Sonoma.

Map Legend: Average % of Water from Sonoma County Water Agency							
	80-100%			60-80%			< 60%

Financial Challenges in Supplementary Systems

The information above supports fluoridation of the wholesale system as the most economical initial approach to fluoridation in the Water Agency's service area, which will bring the overall water supply for most of the SCWA customers close to optimal fluoridation. However, there are potential financial challenges to the retail systems. The ideal goal in fluoridation is to provide optimally fluoridated water to all customers of a water system. However the cost and benefits of pursuing perfect fluoridation vary from retail system to retail system and well to well and should be carefully analyzed to design the optimal strategy for rolling out ideal fluoridation over time. Nevertheless, **the perfect should not be the enemy of the good**. The systems or communities with the greatest number of supplemental sources are Rohnert Park (30 wells), Petaluma (8 wells), Windsor (6 wells), and Valley of the Moon (6 wells). These sources should be analyzed with care to balance fiscal implications, timing and the optimization of health.[21] However the existence of significant but less than perfect fluoridation during a transition period of years in some communities, will provide a significant degree of dental protection, far greater than that currently available to residents, and will not cause harm.

Ongoing Costs

In many communities in California, fluoridation capital costs were awarded to systems with the anticipation that they would incorporate the ongoing costs for fluoridation into their annual budgets. Although ongoing costs are a relatively small percentage of a system's annual budget, consumers or a system itself could raise concerns about potential rate increases. In fact, when the Water Agency previously raised rates to its customers 6.9 percent in April 2010,[22] several retail systems passed all or some of those costs on to their customers.[23] The range of increases was from approximately $1.00 per month to $4.00 per month.[24] Nationally, the average cost of fluoridation is approximately $1.25 per household per year, or fifty cents per person.[25] According to city officials, in Healdsburg, which has a small population, the cost of operating the system is roughly $3.20 ($37,100/11,725 residents) per resident per year. Larger systems tend to have lower costs per gallon or per capita. This cost

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[21] Petaluma and Rohnert Park face fiscal challenges. See respectively City of Petaluma, California, Fiscal Year 2010 Budget (http://cityofpetaluma.net/finance/pdf/2010budget/BudgetSections/message-from-CM.pdf), and *Sonoma Press Democrat*, August 24, 2010.

[22] Sonoma County Water Agency, *Water Rates: 2010–2011 Water Transmission Budget Approved.* Retrieved on August 21, 2010, from http://www.scwa.ca.gov/water-rates

[23] As of July 1, 2010, Santa Rosa water ratepayers saw a 2.8% increase in the usage component of their water charges. City of Santa Rosa, California, *Water and Sewer Rage Information*, retrieved on August 24, 2010, from http://ci.santa-rosa.ca.us/departments/utilities/aboutus/Pages/ProposedWaterandSewerRateInformation.aspx/

[24] The Board of Directors of the North Marin Water District unanimously adopted a 9% increase in residential water rates, effective on July 1, 2010. See the *Marin Independent Journal*, May 27, 2010.

[25] American Dental Association, *Fluoridation Facts* (Chicago: Author, 2005). According to the U.S. Census Bureau, there are, on average, 2.59 people per household. U.S. Census Bureau, *State & County QuickFacts*, retrieved on August 20, 2010, from http://quickfacts.census.gov/qfd/states/00000.html

would need to be considered for the ongoing sustainability of the effort. It is important to remember that, when compared with the restorative costs of dental disease in a community, fluoridation is one of the most cost-effective public health measures available. The CDC estimates that for every dollar spent on community water fluoridation, $38 are saved in dental restorative care.[26]

"The CDC estimates that for every dollar spent on community water fluoridation, $38 are saved in dental restorative care." [27]

Next Steps

The next key step in this process would be to go beyond CDAF's rough estimates and verify what the actual cost of fluoridation of the Sonoma County Water Agency will be. To do so will require the execution of a preliminary engineering design plan. Only with such a plan, which can provide a cost estimate on the order of plus or minus 15-20 percent, will it be practical to assess the financial requirements for fluoridation and develop a financing plan. We also recommend the creation of a Fluoridation Advisory Committee to advise the Department of Health Services in this process. The Department, in coordination with the Water Agency, will continue to work with local water retailers to understand their needs and concerns in relation to this issue.

The County's other work to improve the dental health of the community should continue irrespective of decisions in relation to fluoridation, as these approaches are complementary and synergistic.

We recommend as the next steps in this process that the Board of Supervisors resolve to:

Continue various activities relating to promoting and advancing oral health in Sonoma County including:

1) Contracting with Community Action Partnership to lead community-based oral health activities; and
2) Contracting with The Lew Edwards Group to develop a public education campaign related to oral health efforts.

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[26] U.S. Centers for Disease Control and Prevention, *Community Water Fluoridation*, retrieved on August 25, 2010, from http://www.cdc.gov/fluoridation/fact_sheets/cost.htm/

[27] U.S. Centers for Disease Control and Prevention, *Community Water Fluoridation*, retrieved on August 25, 2010, from http://www.cdc.gov/fluoridation/fact_sheets/cost.htm/

Continue efforts to analyze the potential of fluoridation in Sonoma County including:

1) Convening an advisory committee to provide guidance on the fluoridation planning and implementation process;
2) Contracting with California State University, Sacramento to facilitate the advisory committee and discussions with community stakeholders and water retailers; and
3) Contracting with MWH Americas, Inc. to develop a Preliminary Engineering Design Report for fluoridation of Sonoma County Water Agency's drinking water supply with Sonoma County Water Agency staff providing technical assistance and oversight of the agreement.

By March 2014 staff will return to the Board with a detailed design and implementation plan for fluoridation of Sonoma County Water Agency's drinking water supply. This plan will include more accurate cost estimation and proposed financing details and will be developed in partnership with the Water Agency, community stakeholders, and city representatives.

Appendix A
Fluoridation Cost Estimates
Consideration of Fluoridation of Public Water Supplies
in the Sonoma County Water Agency Service Area

Method

Planning level cost estimates were prepared for construction costs, capital costs and first year operation and maintenance costs for the Sonoma County Water Agency (Water Agency) water supply system.

Sonoma County Water Agency Estimate

The CDAF consultant met with Water Agency interim General Manger Grant Davis to provide an overview of the assessment process and gain preliminary information about the Water Agency system. A subsequent meeting was held with Pamela Jeanne, Deputy Chief Engineer - Operations, the CDAF consultant and the CDAF consulting engineer to discuss the project. An estimate prepared by Water Agency staff in November 2008 for capital and operating costs was provided to the CDAF consultants. That estimate was reviewed and revised to be consistent with the assumptions used in this study (See Appendix B, Basis of Cost Estimates).

Appendix B
Basis of Cost Estimates

Cost Estimates

A large majority of the total public water supply in the Sonoma County Water Agency (Water Agency) service area is provided by the Water Agency through its Russian River water supply facilities, its three off-river wells, and its aqueduct system. If the Water Agency were to fluoridate its entire supply to the optimum fluoride concentration of near 0.7 mg/L (0.7 parts per million) of fluoride ion, then the average fluoride concentration delivered by each retailing water utility within the Water Agency would vary. California water supply regulations require that, with some exceptions, each fluoridated public water supply maintain near-optimum fluoride concentration. However the state understands that fluoridation and extension to local sources can take time and that suboptimal fluoridation has immediate health benefits. It is open to receiving proposals for initial fluoridation of wholesale systems.

Planning-level cost estimates have been prepared for construction costs, capital costs, and first year operation and maintenance (O&M) costs for the Water Agency supply system.

Basis of Cost Estimates

Price Level. These cost estimates are based on review and tabulation of costs for similar projects in Northern California. In the case of the Water Agency facilities a staff cost estimate developed in 2008 was the starting point for this study. Construction of facilities included in this project is assumed to commence in 2012, and initial operation in 2013.

Construction prices change (generally increase) with time. For purposes of adjusting costs for price escalation, the published Engineering News-Record 20-cities Construction Cost Index (ENR-CCI) is used. In August 2010 the index was 8840. Cost estimates herein are based on an ENR-CCI of 9300. First-year O&M costs are for calendar year 2013.

Estimating Accuracy. These planning-level cost estimates are not precise. Allowances believed to be adequate are included for every cost element of a utility capital improvement project. The total costs presented should be within plus or minus 30 percent of actual program costs.

Fluoridation Chemical and Price. The design of each fluoridation project should include a site-specific evaluation of alternative fluoride chemicals and feeding systems. The choice of chemical can vary with the size of project, available chemical supply (reliability and price), and the experience and preferences of the utility personnel.

This concept-level plan assumes the use of liquid fluorosilicic acid (FSA). FSA is by far the most commonly used fluoride chemical in the U.S. and is usually of lowest cost. FSA as purchased is a concentrated acid, and all appropriate care must be taken in design and operation of systems using any fluoride chemical - especially FSA.

In recent years, FSA supplies have had some unsettling changes in reliability and price. The FSA supply situation is now believed (by EPA, AWWA, and other experts) to be largely stabilized. It is assumed that FSA will be delivered by a vendor to each fluoridation facility in the form of a 23 percent solution of FSA. In most cases, on-site storage of 35 day's supply is included. The delivered unit price is assumed to vary from $3.50 to $4.20 per pound of fluoride ion, for largest to smallest facilities covered by this study.

In the design phase each water source should be assessed for the need for caustic or other stabilizing chemicals to be fed along with the fluoride chemical. The costs of such possible additional treatments are not included herein. Coordination of fluoridation and other water treatment processes should, of course, also be investigated during design.

Site-Specific Information. Some basic technical information about each water supply source was requested from each of the water suppliers listed above. The purpose of this information was to tailor each cost estimate, albeit roughly, to the site-specific circumstances of each source. Most of the cost estimates herein are based on such site-specific information.

Cases where no (or incomplete) information was provided are noted. Best available data were obtained from on-line sources including water master plans, Water Agency annual reports, capital improvement plans, annual water quality reports, etc. It should be noted that estimates provided do not include right-of-way costs which are site specific.

Construction Cost. Each construction cost estimate represents expected construction bid prices in mid-2012 for construction, complete, of all fluoridation facilities required by a utility under one, or a few, contracts awarded to experienced general contractors.

Construction cost estimates are based on data from similar projects adjusted for price escalation and major scope differences. The basic component for cost estimating is a complete and operable fluoridation facility constructed within an existing water production housing having adequate space, access, utilities, and Supervisory Control and Data Acquisition (SCADA) service to the new fluoride system. The minimum construction cost for such a basic facility at a well station is about $100,000. Additional amounts are added for upsizing and additional components or space required on a site-specific basis.

Expected Capital Cost. Expected project capital cost is the estimated construction cost (defined above) plus these allowances:

Engineering, including all planning, engineering, and other professional technical services required (except 2, below) during all phases of the project. An allowance of 20 percent of estimated construction cost is made.

Construction management services, including management of bidding, awards and payments, inspection and testing of construction, and system startups. An allowance of 20 percent of estimated construction cost is made.

Program management, including scoping, contracting, regulatory and permitting coordination, financing, legal, and public information. An allowance of 10 percent of estimated construction cost is made.

In total, these additional components of capital cost (allowances) add 50 percent to the estimated project construction cost, and the resulting total is termed the "Expected Capital Cost".

Total Planning-Level Capital Cost. Finally, a Total Planning-level Capital Cost is presented. This is the Expected Capital Cost (defined above) plus a 30 percent allowance for scoping and pricing contingencies. These are unanticipated items of work and unforeseen pricing changes. This contingency allowance can be reduced as the project proceeds toward completion.

First-Year O&M Cost. An estimate is given the expected first year (2013) actual cost of operation and maintenance (O&M) of the new fluoridation systems. This cost does not include depreciation or capital replacements or other long-term asset management factors. First-year O&M cost estimates herein do include:

Operating labor at a total unit cost of $80.00 per hour. In most cases, fluoridation system operation will be coordinated with other system operations for best efficiency. We assume an incremental labor requirement of about 300 hrs/yr for an individual well station, up to about 500 hours per year for a larger plant.

Non-routine maintenance and short term replacements; an annual allowance of 3 percent of estimated construction cost is made.

Utilities, supplies, and services other than fluoride chemical; an annual allowance of 3 percent of estimated construction cost is made.

Fluoride chemical. Purchase of fluorosilicic acid (FSA) to treat annual water production of each facility to a finished fluoride concentration of 0.7 mg/L. FSA purchase assumptions are outlined above. [28]

[28] Estimates were prepared at .7 mg/L. Current CDC recommendation is .7 mg/L.

Comments of Chris DeGabriele
Sonoma County Board of Supervisor Meeting
February 26, 2013

Sonoma County Oral Health Update

- My name is Chris DeGabriele, General Manager of the North Marin Water District and Chair of the Technical Advisory Committee to Sonoma County Water Agency.
- My comments today are solely my own since neither the North Marin Water District Board of Directors nor the Water Advisory Committee or the Technical Advisory Committee have had an opportunity to collectively review the subject board item including the Sonoma County Fluoridation Assessment Draft Report.
- I did attend the public meeting at Sonoma County Department of Health Services last Friday, February 22nd and was pleased to learn that Sonoma County Department of Health Services intends to update the Sonoma County Smile Survey completed in June 2009. I do have some suggestions how that survey may be improved including analysis of the data.
- I am also pleased to see in the staff report that none of today's recommended actions will have an immediate cost impact on the Water Agency or the Water Contractors.
- With regard to the Fluoridation Assessment Draft Report, it is my understanding that Sonoma County Water Agency is a public water system and subject to the health and safety code provisions regarding fluoridation of its water supply. North Marin Water District, and I believe the other Water Contractors, understand that the capital and operation and maintenance costs to fluoridate the water supply cannot be funded from water rate payers or tax payers from within its water system.
- Fluoridation of the water supply is always controversial. Prior to enactment of the 1996 Fluoridation Act many Boards and Councils asked for a community vote to decide the matter. That's what happened at MMWD in the early 1970's. The Act took the decision out of local provider's hands. If sufficient outside funds, such as from Federal block grants or donations from private foundations, are available the public water system must be fluoridated notwithstanding any objection by the water systems customers.

Board of Supervisors takes next step toward fluoridating county water

By DEREK MOORE
THE PRESS DEMOCRAT
Published: Tuesday, February 26, 2013 at 3:00 a.m.

The Sonoma County Board of Supervisors on Tuesday pressed forward with a controversial plan to put fluoride into most of the county's drinking water during an emotional hearing in which dozens of speakers debated whether the chemical compound is a panacea or a poison.

Dentists and other health care professionals, along with a larger, more vocal contingent of fluoride skeptics, packed board chambers for the marathon five-hour public hearing.

Despite reservations expressed by some supervisors, the board unanimously authorized additional financial analysis and engineering studies of adding fluoride to most of the county's drinking water. The final decision is not expected until March 2014.

"We can't ignore the data and the statistics in this county when it comes to the oral health epidemic," Supervisor Efren Carrillo said.

Dozens of speakers, however, expressed anger and dismay over the proposal, citing health concerns, distrust of mainstream science and doubts about how the county would be able to fund the project.

Based on preliminary estimates, the project could cost up to $8.5 million in capital upgrades to the county's central water system, plus ongoing upkeep starting at $973,000 a year, according to a county report.

"I'm assuming this will be necessary because our roads will be so bad we won't be able to drive to the dentist," said Elizabeth Van Dyke of Guerneville, in what became a recurring theme about the county's spending priorities.

Fluoride is a chemical compound and was introduced to U.S. drinking water nearly 70 years ago. About three-quarters of the nation's population served by public water systems, or about 196 million people, are now receiving fluoridated water.

The measure is backed by the Centers for Disease Control and Prevention, the surgeon general, the World Health Organization and the American Dental Association, which called it "the single most effective public health measure to prevent dental decay."

Currently in Sonoma County, the only fluoridated water is delivered to residents of Healdsburg, the adjacent Fitch Mountain area and Two Rock Coast Guard Base.

Dr. Lynn Silver Chalfin, the county's health officer, told the board that in Sonoma County every day, 10 to 12 children undergo general anesthesia while being treated for severe dental disease.

She cited a CDC study that found that for every dollar spent on community water fluoridation, the result is a $38 savings on dental expenses.

ATTACHMENT 3

Stacey Stirling, dental operations manager for St. Joseph Health Sonoma County, described a 5-year-old girl whose face was so swollen because of oral disease her eyes were nearly shut.

Stirling said the girl's parents brought her to the emergency room and that she spent five days in the hospital. The total bill for her dental care: $80,000.

"We see children like this every day," Stirling said. "My fear is that we're going to see a death in Sonoma County, for those children who don't make it in in time."

Santa Rosa dentist Anthony Fernandez, a proponent of fluoride as a preventive measure, said the least expensive filling he offers is $160. He urged supervisors to "do the right thing," and for dramatic effect, he played the shrill sound of a dentist's drill on the public address system via his smartphone.

Opponents were not amused. Several speakers likened fluoride to a toxic substance they said can cause a range of health ailments when ingested, everything from bone cancer to hip fractures.

"You're listening to members of the dental association that gave us mercury," Dr. Robert Rowen, who has an integrative and nutritional family medicine practice in Santa Rosa, told the board.

He said if he were to prescribe medications the way he said supervisors are essentially considering with mass fluoridation, the medical establishment would "jerk my ticket," meaning strip him of his licence to practice.

Several speakers said county health officials should concentrate their efforts instead on getting children weaned off of sugar and soda drinks.

They also raised the issue of people taking personal responsibility to teach their children good oral-hygiene habits.

The dissenters clearly got to Supervisor Shirlee Zane, who said after more than two hours of public testimony, "We are so behind the curve here. Shame on us for being so far behind."

She then pointed her finger toward the audience and said, "I have listened to you. You will now listen to me."

That prompted Brenda Adelman, a Guerneville resident and longtime activist on Russian River water issues, to stand up and yell loudly back at Zane, "Please don't point your finger at me. That's clearly obnoxious."

Supervisor David Rabbitt, the chairman of the board, pounded the gavel several times seeking order.

"I'm not going on until they stop," Zane said.

The fluoridation project would affect three quarters of the county, including 350,000 residents served by the Sonoma County Water Agency in Windsor, Santa Rosa, Rohnert Park, Cotati, Petaluma, Sonoma, Forestville and the Valley of the Moon. More than 50,000 Novato-area residents served by the Water Agency also would get fluoridated water for the first time.

Perhaps the biggest hurdle to the county's plans is that it would require the unanimous consent of all eight of the water agency's retailers.

Rabbitt cautioned that the last time those agreements were opened up for review it took "eight-and-a-half years to bottle it up again."

The Graton Community Services District is not one of the major municipal systems that receives water from the water agency. But Robert Rawson, the district's general manager, said the district opposes the fluoride project because he said the chemical will cause environmental damage, including to aquatic organisms.

Rabbitt and Supervisor Susan Gorin expressed concerns about how the project would be funded and, also, over how much money the county is spending on studies. The engineering analysis approved Tuesday is estimated to cost the county about $103,000.

At questioning from Gorin, County Counsel Bruce Goldstein said the cost of the flouride project could be passed on to ratepayers.

Gorin said she also was "conflicted" about putting fluoride in water, saying she's not expecting it to lead to "miraculous cures, especially among our disadvantaged population."

DISBURSEMENTS - DATED FEBRUARY 28, 2013

Date Prepared: 2/26/13

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 2/15/13	$115,607.91
EFT*	US Bank	Federal & FICA Taxes PPE 2/15/13	48,510.46
EFT*	State of California	State Tax & SDI PPE 2/15/13	8,552.28
1	Allen, Debra	Novato "Washer Rebate" Program	50.00
2	Allied Heating & Air Conditioning	Quarterly Maintenance on HVAC System (12/1/12-2/28/13)	466.08
3	Alpha Analytical Labs	Lab Testing (PR Well #3 Replacement)	3,794.00
4	American Family Life Ins	February Employee Contribution for Accident, Disability & Cancer Ins.	4,000.20
5	Athens Administrators	Feb Workers Comp Admin Fee	1,000.00
6	AT&T	Telephone Charges: Leased Lines	63.42
7	Automation Direct	Analog Input Modules for RTU's ($332) & Filler Cover for Point Reyes Treatment Plant RTU	350.00
8	Backflow Distributors	Freeze Protection Bags for Backflow Devices (10)	667.03
9	Bay Area Barricade Service	Barricades (12) ($343), Marking Paint (48-17 oz cans) ($178), Spray Chalk (36-17oz cans) ($137), Flag Stands (6) ($587), "Road Closed" & "Sidewalk Closed" Signs (4) ($185)	1,429.52
10	Bellucci-Rich, Donna	Novato "Toilet Rebate" Program	500.00
11	Calif Contractors Supplies	Cut-Off Wheels (250) ($331) & Penetrating Lubricants (24) ($798)	1,129.19
12	California State Disbursement	Wage Assignment Order PPE 2/28/13 (2)	1,143.00
13	Case Excavating	Change Order #1 for Ocean Marin CIPP Sewer Lining Project ($5,343) & Final Pymt: OM Sewer Lining Project (Project Total: $151,279)	19,206.92

Seq	Payable To	For	Amount
14	CDW-Government	PCI Card ($50) (Jackson) & Port for Meter Reading Devices ($94)	144.06
15	Chase Card Services	Minute Books (2) ($263) (Young), Birthday Breakfasts ($74), Breakfast Meeting ($67) (DeGabriele), Business Writing Seminar ($179) (Young), Valve, Coil ($234) (STP) & Ad Notice for RW On-Site Retrofit Group 2 ($476)	1,292.30
16		Vision Reimbursement	184.00
17	Correia, Joseph	Novato "Toilet Rebate" Program	300.00
18	Data Instincts	Public Outreach for RW South Phs 2 (Bal Remaining on Contract $26,575)	6,130.07
19	Duran, Susan	Novato "Toilet Rebate" Program	300.00
20	Charles Z. Fedak	Final Payment: Financial Statement Audit FY12 (Project Total: $20,600)	2,400.00
21	GHD	Engineering Services: AEEP (San Antonio Creek Curve Correction, Environmental CEQA & NEPA Services) (Bal Remaining on Contract $18,960) & Novato Water System 2012 Master Plan Update (Bal Remaining on Contract	2,555.58
22	Gibson, Whitney	Novato "Washer Rebate" Program	50.00
23	Golden Gate Petroleum	Gasoline ($3.84/gal) & Diesel ($4.06/gal)	3,927.19
24	Harrington Industrial Plastics	Repair Peristaltic Chemical Feed Pump (STP)	833.72
25	IDI-Dupont	Sodium Chlorite for Generation of Chlorine Dioxide @ STP (44,960 lbs)	29,224.00
26	InfoSend	January Additional Fee for Water Bills Postmarked After Jan 27 Postage Increase	156.01
27	Lincoln Life	Deferred Compensation PPE 2/28/13	8,821.14
28	McClanahan, Deb	Novato "Washer Rebate" Program	50.00
29	Miller Pacific Engineering	Geotechnical Services: Backfill Compaction Testing (Bal Remaining on Contract $22,321)	1,472.00
30	Nationwide Retirement Solution	Deferred Compensation PPE 2/28/13	1,025.00

Seq	Payable To	For	Amount
31	Neopost USA	Quarterly Postal Meter Rental	212.06
32	Nixon, Laura	Novato "Washer Rebate" Program	50.00
33	Novato Disposal Service	January Trash Removal	413.20
34	Pace Supply	Nipples (12) ($166), Follower, Gaskets (2) ($49), Corp Stops (10) ($405) & Couplings (44) ($743)	1,403.60
35	PERS Retirement System	Pension Contribution PPE 2/15/13	46,112.58
36	Point Reyes Prop Mgmt Assn	February HOA Dues (25 Giacomini Rd)	75.05
37	Rebelo, Frank	Novato "Toilet Rebate" Program	100.00
38	RKN Remodeling	Jonsen Small Claims Hearing "Expert Witness" Fee	540.00
39	Roberts & Brune	Butterfly Valve ($1,203) & Sales Tax on Previously Paid Invoice ($913)	2,115.47
40	Rogers Machinery	Reed Valve Assembly for Compressor (STP)	133.62
41	Sequoia Safety Supply	Anti-Fog Lens Wipes (400) & Safety Glasses (12) ($40)	70.07
42	Siemens Water Technologies	Service on Lab Deionized Water System ($218) & Pump Repair Kit ($119)	337.35
43	Soiland	Asphalt Recycling Fee	20.00
44	Sommers, Flora	Novato "Washer Rebate" Program	50.00
45	Sonoma County Water Agency	January Contract Water	332,571.46
46	Township Building Services	January Janitorial Service	1,754.84
47	URS	Prog Pymt#11: Construction Management Services for RW So Project (Bal Remaining on Contract $155,111)	44,837.94
48	USA BlueBook	Electrode (STP)	107.92
49	VWR International	pH Testers (100)	30.37
50	White & Prescott	Reviewed Proposed Easement & Marked Suggested Revisions (Digital to Leveroni Looping) (Bal Remaining on Contract $5,125)	240.00

Seq	Payable To	For	Amount
51	YRC (Yellow Roadway Corp)	Freight on Valve & Gasket	368.18
		TOTAL DISBURSEMENTS	**$696,878.79**

The foregoing payroll and accounts payable vouchers totaling $696,878.79 are hereby approved and authorized for payment.

David Smith 2/26/13

Auditor-Controller Date

Chris D. Gabriel 2/26/2013

General Manager Date

DISBURSEMENTS - DATED FEBRUARY 21, 2013

Date Prepared: 2/19/13

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	Able Tire & Brake	Tires (5) ('01 Dodge Ram-$169, '03 Chevy Silverado-$393, '01 Dodge Dakota-$232) & Alignment ($81) ('01 Chevy C1500)	874.62
2	Able Fence	Install 2 New Gates to Solar Field Entrance @ STP	2,700.00
3	Ackerman, Gerald	Retiree Exp Reimbursement (Bal of 2013 Health Ins)	997.59
4	AirGas NCN	Adaptor ($62) & Cylinder Rental	77.21
5	Argueta, Vilma	Novato "Toilet Rebate" Program	196.00
6	AT&T	Telephone Charges: Local ($71) & Min ($143)	214.65
7	Autoworld	Brake Pad Kit ('01 Dodge Ram)	163.68
8	Badger Meter	2" Meters (10) ($4,629), Replacement Meter Reading Devices ($16,430), (Budget $17,000)	21,059.28
9	Bank of Marin	Bank of Marin Loan Principal & Interest (Pymt 16 of 240)	46,066.67
10	Borges & Mahoney	Vacuum Regulator (STP)	556.75
11	Building Supply Center	Material to Protect Pipes from Frost	17.70
12	Bundesen, Gerald	Retiree Exp Reimb (Monthly Health Ins)	884.31
13	Butler, Ken	Novato "Washer Rebate" Program	50.00
14	Butti, Lou	Retiree Exp Reimb (Monthly Health Ins)	884.31
15	Calif Public Health Services	Water Treatment Certification Renewal Fee (Grade T2) (Connolly) (3/13-3/15) (Budget $80)	60.00
16	California State Disbursement	Wage Assignment Order PPE 2/15/13	1,143.00
17	Cole-Parmer Instrument	Lab Supplies (STP)	228.38

Seq	Payable To	For	Amount
18	Contreras, Jennifer	Refund Overpaid Closed Account	313.89
19		Cafeteria Plan: Uninsured Medical Reimbursement	341.00
20	Derby, Richard	Retiree Exp Reimbursement (Bal of 2013 Health Ins)	997.59
21	Diggs, James	Retiree Exp Reimb (Monthly Health Ins)	884.31
22	Duhig	Stainless Steel Fitting for Pressure Regulator	129.38
23	Eyler, John	Retiree Exp Reimbursement ($998) (Bal of 2013 Health Ins) & Replace Lost Check ($90)	1,088.28
24	Hach	Reagents (Lab & STP)	356.62
25	InfoSend	January Processing Fee for Water Bills ($990) & Postage ($4,329)	5,319.19
26	ITRON Service Center	Replacement Meter Reading Device Software (Budget $2,300)	2,254.00
27	Johnstone, Daniel	Retiree Exp Reimbursement (Bal of 2013 Health Ins)	997.59
28	Jones, Katherine	Novato "Washer Rebate" Program	50.00
29		Cafeteria Plan: Uninsured Medical Reimbursement	20.00
30		Cafeteria Plan: Uninsured Medical Reimbursement	2,500.00
31	Li, Ju-An	Novato "Toilet Rebate" Program ($300) & Refund Alternative Compliance Reg 15 Deposit ($945)	1,245.00
32	Lincoln Life	Deferred Compensation PPE 2/15/13	8,846.14
33	MacKenzie, Gerald	Novato "Washer Rebate" Program	50.00
34	Marin Reprographics	Bond Paper (36" x 150') (6) (Eng)	145.74
35	Matchette, Tim	Retiree Exp Reimb (Monthly Health Ins)	282.55
36	MCC Control Systems	Progress Modification for STP (Bal Remaining on Contract $1,450)	782.50
37	McLellan, WK	Misc Paving (Novato Area) (645 S.F.)	5,875.75

Seq	Payable To	For	Amount
38	MegaPath	DSL Internet Service (2/12/13-3/11/13)	142.88
39	Nationwide Retirement Solution	Deferred Compensation PPE 2/15/13	1,025.00
40	Nelson, John O.	Retiree Exp Reimbursement (Bal of 2013 Health Ins)	997.59
41	North Bay Gas	Mig Welder Wire ($61), Hose for Cutting Torch, Coupling Set, Nitrogen ($524) (STP) & January Cylinder Rental ($105)	736.21
42	Office Depot	Copy Paper (11" X 17") (2,500) ($94) & Storage Boxes (48) ($98)	192.16
43	One Stop Resource	Repair Variable Frequency Drive (STP)	776.00
44	Pace Supply	Gate Valve ($474), Service Saddles (11) ($1,350), Caps (4) & 36" Dewatering Hand Pumps (10) ($277)	2,110.13
45	Pape Material Handling	Rebuild Hydraulic Controls ('00 Bobcat Steer Loader)	577.38
46	PG&E	Power: Bldgs/Yard ($3,263), Rectifier/Controls ($422), Pumping ($11,780), Treatment ($166) & Other ($104)	15,733.95
47	Phillips & Associates	Feb O & M of O.M. Wastewater Treatment	5,187.96
48	Protection Engineering	Primer (12 qts)	294.20
49	Radio Shack	Cat 5 Cable Ends & Diode	19.11
50	Roberts, Renee	Retiree Exp Reimb (Monthly Health Ins)	282.55
51	Sequoia Safety Supply	Leather Gloves (36 pr) ($197), Brief Relief Urine Bags (100) ($220) & Disposable Gloves (500) ($44)	461.89
52	Sierra Chemical	Chlorine (2 tons)	1,532.49
53	Sjoblom, Jeff	Exp Reimb: Safety Boots	200.00
54	SPG Solar	Energy Delivered Under Solar Services Agreement (1/1/13-1/31/13)	8,082.82
55	Staples	Microscreen Reader & Stamp (Eng)	59.95

Seq	Payable To	For	Amount
56	Stephens Sr, Mark	Novato "Washer Rebate" Program	50.00
57	Sullivan, Dennis	Novato "Washer Rebate" Program	50.00
58	T & T Valve & Instrument	Positioner to Control Raw Water Valve @ STP	2,118.20
59	United Parcel Service	Delivery Services: Eagle Drive Flow Meter Sent for Repair	11.15
60	USA BlueBook	Chemical Resistant Boots (3) (STP) ($286) & Electrode	391.15
61	Velloza, Richard	Retiree Exp Reimbursement (Bal of 2013 Health Ins)	997.59
62	Verizon California	Telephone Charges: Leased Lines	1,168.70
63	Verizon Wireless	Cellular Charges: Data ($71) & Airtime ($131) (19)	202.76
64	Vernon, Janet	Novato "Cash for Grass" Program	200.00
65	Weber, Jeanette	Novato "Washer Rebate" Program	50.00
66	White & Prescott	Engineering Services: Match Surveyed Aqueduct Locations with Boundaries on Record Map (Balance Remaining on Contract $5,365), Reviewed Proposed Cal Trans & NMWD Plans (Bal Remaining on Contract $4,365)	2,000.00
		TOTAL DISBURSEMENTS	**$154,305.50**

The foregoing payroll and accounts payable vouchers totaling $154,305.50 are hereby approved and authorized for payment.

Auditor-Controller — Date 2/19/13

General Manager — Date 2/19/2013

MEMORANDUM

To: Board of Directors March 1, 2013

From: Nancy Williamson – Sr. Accountant

Subj: Reimbursement Program 2012
t:\finance\reimb program\reimbmemo2012.doc

RECOMMENDED ACTION: Information Only

FINANCIAL IMPACT: $10,150 Reimbursement Payment to Developers

Regulation 30 (attached), Reimbursement for Extension of Pipelines that Benefit Others, allows developers to receive reimbursement for pipelines they are required to install which are not within the developers property. Reimbursement eligibility is determined by the District prior to execution of the Water Service Agreement, and is based upon the benefit to be derived from other potential users of the extended pipeline. The reimbursement entitlement is available only for installation of six-inch diameter pipeline and larger, and the first one hundred feet of said pipeline and fittings are not eligible for reimbursement.

Regulation 30 provides that each year following the first full year after completion of the extension, the District pays to each developer having a reimbursement entitlement a pro-rata share of all Reimbursement Fund Charges ($420 in Novato and $1,950 in West Marin for each 1" residential meter installed in 2012) held by the District in its Reimbursement Fund Account. Reimbursement Fund Charges received and reimbursement entitlements are accounted for separately for the Novato and West Marin Service Areas (the current year schedule is attached). A developer's reimbursement entitlement expires upon payment thereof by the District in full without interest, or on the tenth year of payment, whichever occurs first.

There were twelve participants in the Novato Reimbursement Program in 2012 representing $1,534,742 in original reimbursement entitlements. We collected $8,200 in Reimbursement Fund Charges during calendar year 2012 (versus $8,197 in 2011) and that total was applied against the remaining reimbursement obligation of $1,017,035 leaving a zero balance in the Reimbursement Fund Account. After this year's payment there remains an outstanding entitlement balance of $1,008,835 in Novato.

There were two participants in the West Marin Reimbursement Program in 2012 representing $216,183 in original reimbursement entitlements. We collected $1,950 in Reimbursement Fund Charges during calendar year 2012 (versus $0 in 2011) and that total was applied against the remaining reimbursement obligation of $160,821 leaving a zero balance in the Reimbursement Fund Account. After this year's payment there remains an outstanding entitlement balance of $158,871 in West Marin.

NORTH MARIN WATER DISTRICT

REGULATION 30

REIMBURSEMENT FOR EXTENSION OF PIPELINES THAT BENEFIT OTHERS

a. Reimbursement Entitlement for Off Tract Pipelines

The Reimbursement Entitlement for pipelines paid for by the Applicant but not within the Applicant's property shall be based upon the benefit to be derived by other potential users of said pipelines as estimated and determined by the District in its sole discretion. Reimbursement Entitlement will be considered only for pipelines and fittings of six-inch diameter and larger. The first one hundred feet of said pipelines and fittings except for the oversized portion are not eligible for Reimbursement Entitlement. In determining the Reimbursement Entitlement any pipeline footage traversing land in other water service zones or paralleling an existing water main shall not be considered eligible for reimbursement unless the District determines that such footage can reasonably be expected to be of benefit to abutting lands. The maximum Reimbursement Entitlement shall not exceed the maximum potential benefit to be derived by other users of the facilities paid for by the Applicant as determined by the District in its sole discretion.

b. Reimbursement Payments

In January of each year following the first full year after completion of the extension, the District will pay to each Applicant having a Reimbursement Entitlement, a portion of the total amount of Reimbursement Fund Charges established by Regulation 1.c. and received by the District from Applicants located within the same service area during the previous calendar year. Said portion shall be determined by multiplying said total amount of Reimbursement Fund Charges received by the quotient obtained by dividing the Applicant's unexpired reimbursement entitlement by the total of all unexpired reimbursement entitlements within the same service area. For the purpose of this Regulation, the Point Reyes and Paradise Ranch Estates Service Areas shall be considered one service area called the West Marin Service Area. Reimbursement Fund Charges received and unexpired Reimbursement Entitlements shall be accounted for separately for the Novato and West Marin Service Areas.

c. Expiration of Reimbursement Entitlement

The Applicant's unexpired Reimbursement Entitlement for a given year shall be determined by subtracting all prior reimbursement payments made to said Applicant from said Applicants' Reimbursement Entitlement. An Applicant's Reimbursement Entitlement shall expire and become invalid upon payment thereof by the District in full without interest, or on December 31 of the tenth year of payment on account thereof pursuant to Regulation 30.b. whichever shall first occur.

d. Acknowledgment of Necessity

Anyone who pays, deposits or agrees to pay all or part of the cost of any extension or improvement of the District's Water Distribution system hereby acknowledges that such extension or improvement is necessary and reasonable and releases the District from any liability based on a claim that a determination made by the District pursuant to Regulation 21 is or was unnecessary or unreasonable.

NORTH MARIN WATER DISTRICT 1/31/2013
REIMBURSEMENT PROGRAM - 2012
Allocation Calculations
GL Acct 22700-01
t:\accountants\financials\stmtfy13\[reim13yr.xls]reim12yr

Job Number	PROJECT	FIRST YEAR	FINAL YEAR	ORIGINAL ENTITLEMENT	- TOTAL PRIOR REIMB PAID	= ENTITLEMENT REMAINING 12/31/2012	REIMB PAID THIS YEAR	GRAND TOTAL REIMB PAID	ENTITLEMENT REMAINING 12/31/2013	% REIMB TO DATE
	NOVATO:									
1.2546.00	Point Marin (aka Rafael Village)- Phase 1	2006	2015	$11,395.00	$4,733.44	$6,661.56	$53.71	$4,787.15	$6,607.85	42.01%
1.2574.00	Tamalpais Hill Subdivision	2006	2015	$218,250.00	$90,660.08	$127,589.92	$1,028.71	$91,688.79	$126,561.21	42.01%
1.2576.00	Cherryhill Pipeline Extension	2006	2015	$642,542.00	$266,909.08	$375,632.92	$3,028.60	$269,937.68	$372,604.32	42.01%
1.2597.00	Point Marin Phases 2 & 3	2006	2015	$233,170.00	$96,857.78	$136,312.22	$1,099.04	$97,956.82	$135,213.18	42.01%
1.2598.00	Atherton Estates	2006	2015	$91,820.00	$38,141.62	$53,678.38	$432.79	$38,574.41	$53,245.59	42.01%
1.2659.00	Lehman Land Division	2007	2016	$24,492.00	$1,970.39	$22,521.61	$181.58	$2,151.97	$22,340.03	8.79%
1.2635.00	Channel Drive Water Main Extension	2007	2016	$18,486.00	$1,487.21	$16,998.79	$137.06	$1,624.26	$16,861.74	8.79%
1.2617.00	Marion Heights	2007	2016	$88,322.00	$7,105.52	$81,216.48	$654.82	$7,760.34	$80,561.66	8.79%
1.2282.00	Oak Park Estates	2008	2017	$16,319.00	$960.24	$15,358.76	$123.83	$1,084.07	$15,234.93	6.64%
1.2576.01	Cherryhill Pipeline - Phase 2	2008	2017	$143,341.00	$8,434.45	$134,906.55	$1,087.70	$9,522.15	$133,818.85	6.64%
1.2692.00	Whole Foods	2010	2019	$42,368.00	$413.20	$41,954.80	$338.27	$751.47	$41,616.53	1.77%
1.2614.00	Somerston Park	2011	2020	$4,237.00	$33.88	$4,203.12	$33.89	$67.76	$4,169.24	1.60%
				$1,534,742.00	$517,706.88	$1,017,035.12	$8,200.00	$525,906.88	$1,008,835.12	34.27%
	Total Invested			$1,534,742.00	$517,706.88	$1,017,035.12	$8,200.00	$525,906.88	$1,008,835.12	34.27%
	% Earned			0.53%						

Amt Remaining in Reimb Acct from 2011	$0.00
Reimb collected 1/1/12 - 12/31/12 (22700-01)	8,200.00
Balance in Reimb Fund at 12/31/11	8,200.00
Paid out this year	(8,200.00)
Remaining in Reimb Acct after payments	$0.00

	WEST MARIN:									
2.2530.00	Vallejo Avenue Extension	2007	2016	$51,183.88	$13,107.66	$38,076.22	$461.68	$13,569.34	$37,614.54	26.51%
2.2529.00	Pt. Reyes Affordable Housing	2007	2016	$165,000.00	$42,254.77	$122,745.23	$1,488.32	$43,743.09	$121,256.91	26.51%
	Total Invested			$216,183.88	$55,362.43	$160,821.45	$1,950.00	$57,312.43	$158,871.45	
	% Earned			0.90%						

Amt Remaining in Reimb Acct from 2011	$0.00
Reimb collected 1/1/12 - 12/31/12 (22700-02)	1,950.00
Balance in Reimb Fund at 12/31/12	1,950.00
Paid out this year	(1,950.00)
Remining amount in reimbursement account	$0.00

MEMORANDUM

To: Board of Directors March 1, 2013

From: David L. Bentley, Auditor-Controller

Subj: Meters by Size
t:\ac\word\meters\meters by size.docx

RECOMMENDED ACTION: None - Information

FINANCIAL IMPACT: None

Director Baker expressed interest in reviewing a schedule of water meters by size, divided between residential and non-residential (i.e., commercial/institutional/irrigation, etc.). As you can see from the table below, the far majority of meters in the system are 5/8" serving residential customers. Since 1985 all new housing requires a 1" service to provide adequate fire flow protection, thus we see the number of residential 1" meters increasing. A chart graphically showing meters by size is attached.

Meter Size	Residential	Non-Res	Total
5/8"	14,907	679	15,586
1"	4,347	423	4,770
1.5"	168	292	460
2"	58	199	257
3"		82	82
4"		8	8
6"	1	5	6
8"		3	3
10"		1	1
DCA*		413	413
Total	**19,481**	**2,105**	**21,586**

* Detector Check Assembly used on Fire Services

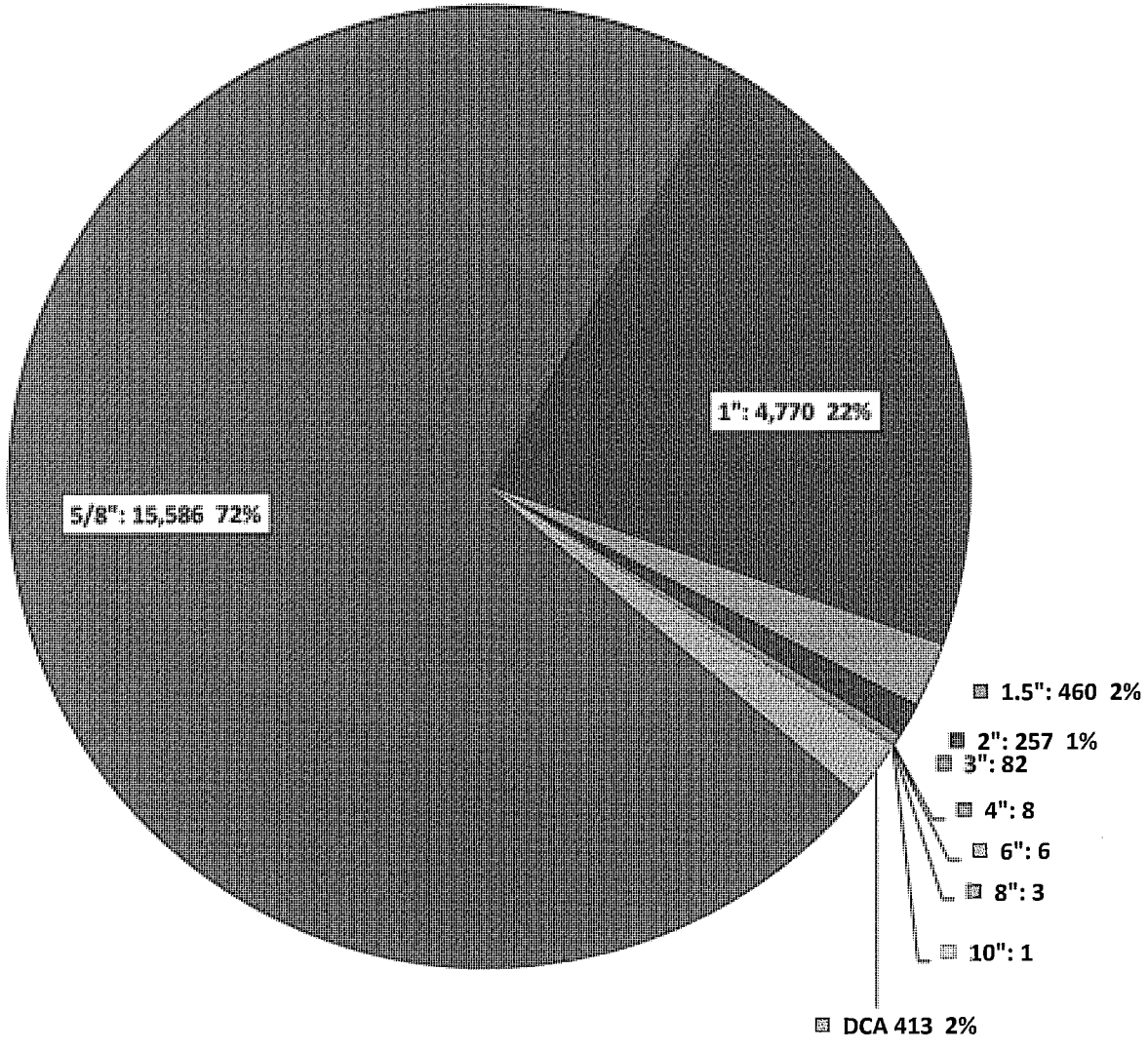
2/28/13

t:\ac\excel\meters\[meters by size.xlsx]table (2)

Meters by Size

Total Meters: 21,586

Large Meter Customers	
4"	Loma Verde Elementary
4"	Birkenstock
4"	Stafford Lake Park
4"	Marin Comm College
4"	Fireman's Fund Ins
4"	Buck Institute
4"	Hamilton Elementary
6"	Novato High School
6"	Coast Guard Spanish Housing
6"	Olompoli State Park
6"	Stonetree Golf
6"	Deer Island RW TP
6"	NMWD Davidson St RW Backstop
8"	Idle Service - HAFB
8"	Fireman's Fund Ins
8"	Pt Reyes National Seashore
10"	Indian Valley Golf Club



Legend

Size: Number %

Marin Municipal Water District board changes meeting days

Posted: marinij.com

corte madera

The Marin Municipal Water District Board of Directors has changed its regular board meeting dates to the first and third Tuesday of each month from the first and third Wednesday.

Board members said the new meeting schedule is designed to mesh with the schedules of individual board members, all of whom have full-time jobs and other obligations.

The meetings still begin at 7:30 p.m. and are still held in the MMWD board room, 220 Nellen Ave. in Corte Madera.

Send us your news: We want more news items from Marin's cities and towns. Email them to our City Desk at localnews@marinij.com, mail them to City Desk, Marin Independent Journal, 4000 Civic Center Drive, San Rafael, CA 94903, or fax them to 415-382-7209. For more information about towns in Marin, visit the IJ's website at marinij.com.

BOD MISC PVP File

Block water release looks hopeful for Eel River salmon; Pikeminnow population may be stabilizing

Redwood Times Redwood Times
Posted: RedwoodTimes.com

Redwood Times

Detailed reports on a block water release from Lake Pillsbury into the main stem Eel River last spring and on programs to monitor water temperatures and pikeminnow populations in the river were presented to the Eel-Russian River Commission (ERRC) at its most recent meeting in Santa Rosa on Friday, Feb. 15.

Second district supervisor Estelle Fennell represents Humboldt County on the commission, which is made up of one member of the board of supervisors from Humboldt, Mendocino, and Sonoma counties. First district supervisor Rex Bohn, as Humboldt's alternate commissioner, also attended.

The ERRC was established as a forum for the counties in the Eel and Russian watersheds, primarily to address issues arising from the diversion of water from the Eel River through an eight-mile tunnel that discharges the water into Pacific Gas & Electric's Potter Valley hydroelectric plant and then into the East Branch of the Russian River.

Under the Reasonable and Prudent Alternative (RPA), a 2004 protocol to protect salmonid populations in the Eel River, PG&E is required to reserve 2,500 acre feet of water for release into the Eel River from its major reservoir, Lake Pillsbury, if needed to aid salmonid migration.

In May 2012 this block water was released in a series of pulses over a six-day period coinciding with the new moon in the hope of encouraging juvenile Chinook to move out of Van Arsdale Reservoir, where the diversion is located, and start their journey to the ocean before the water in the lower reaches of the Eel River became too warm to sustain them.

Scott Downie, senior biologist supervisor for the California Department of Fish and Wildlife (CDFW), expressed cautious optimism about the results in a preliminary report at the ERRC's previous meeting in Eureka on July 30, 2012.

At the Feb. 15 meeting, both Downie and CDFW environmental scientist Scott Harris, who manages the fish counting station at Van Arsdale, made a more detailed presentation on the block water release.

The numbers of juvenile Chinook that left Van Arsdale during the release, which took place over eight days around the time of the new moon, May 18-25, 2012 increased and the young fish appeared to be growing fast, Harris said.

The water was released from the top of Lake Pillsbury rather than through the needle valve at the bottom of Scott dam because warmer water signals the fish to migrate. Juvenile fish also grow faster in warmer water.

It takes the young fish approximately three weeks to get to Alderpoint, where water temperatures can reach the 70s in early summer. It is important to make sure the fish get moving before downstream water temperatures become too warm, which is stressful and possibly lethal to salmonids.

The big surprise was the appearance of hundreds of Pacific lamprey, the eel-like fish after which the river is named. In two nights 600 lamprey were counted at Van Arsdale. At one point 160 lamprey crowded into a pipe, completely blocking it.

A total of 3,471 Chinook were counted during the overall spring 2012 migration, a record year. Harris counted 750 fish on a single day, "a record day in a record year," he said.

But Downie and Harris stated that these numbers, while encouraging, are not a good index to the numbers of fish in the entire Eel River system because there are so many factors that can affect the migration.

Furthermore, even though block water is required by the RPA, the actual availability of that water depends on the level of water behind Scott Dam, since the warmer water at the top of the lake has to be released through gates at the top of the dam. If the lake level is too low to reach the gates, warmer water is not available for release.

This year, two months of plentiful rain have been followed by seven weeks without any significant rainfall or snow in the upper Eel, added Paul Kubicek, senior consulting scientist for PG&E.

Unless the dry spell is followed by another "miraculous March" Lake Pillsbury will be too low for a block water release this spring, Kubicek said.

Nevertheless, CDFW is starting to plan for a block water release this spring. "As long as we have questions to answer we'll keep on doing this," Downie said in conclusion.

Asked for comments on this report after the meeting, Scott Greacen, executive director of Friends of the Eel River said, "It's important to note that [the report] starts with the relatively extraordinary admission that normal operation of the Potter Valley Project is retarding out-migration, hence reproductive success, of the fish that climb the Van Arsdale Fish Station. That suggests the relatively intact habitat in the between-dam reach is not necessarily as functional as we otherwise hope it to be, but it also undermines the VAFS numbers as an indication of the overall health of the run, and makes it all the more important that we find ways to gather more and better information about salmon across the whole Eel watershed."

Fisheries biologist Park Steiner, PG&E's outside consultant, joined Kubicek to report on the ongoing monitoring and pikeminnow suppression projects required by PG&E's operating license.

Steiner began with a brief history, noting that the numbers of Chinook and steelhead counted at Van Arsdale increased in the 1980s when PG&E began fall releases of block water to aid up-migrating fish.

But in the 1990s the counts declined again, with only a handful counted in the late years of that decade. This coincided with the accidental release of pikeminnow, a predatory fish from the

Sacramento River, into Lake Pillsbury, followed by the flood of 1986, which forced fish over the dam and into the main stem Eel.

The pikeminnow is particularly destructive to steelhead populations because young steelhead stay in the river system for several years and are eaten by the pikeminnow. Like the Chinook, steelhead need cold water to remain healthy, whereas pikeminnow thrive in warm water, giving them the advantage.

The RPA requires PG&E to monitor water temperatures as well as pikeminnow and steelhead populations. Additionally, the RPA calls for PG&E to develop and use a pikeminnow suppression program.

Steiner presented a series of graphs that indicate water temperatures at several sites predictably increasing through spring, summer, and into the early fall.

Also predictably, the most steelhead are found near Cape Horn Dam, which impounds the Van Arsdale reservoir, where the water is coldest. Some steelhead are found as far downstream as Outlet Creek (near Willits), where the Eel River makes an S-shaped bend that provides shade and cooler water temperatures.

Pikeminnow are evenly distributed among all the monitoring sites, but their numbers have somewhat decreased, both in total population and in comparison with the steelhead, Steiner said.

He believes that the pikeminnow population has peaked and is stabilizing. Large numbers of small pikeminnow first appeared in the Eel River after the 1986 flood, but the pikeminnow population has slowly matured.

Steiner speculated that as they grow the bigger pikeminnow eat or chase away the smaller ones, and now comprise a more stable population of fewer but larger fish.

He also pointed out that PG&E will continue to monitor temperatures and fish population, and said that they missed only one year of monitoring in 2011 due to danger from commercial marijuana grows.

On the other hand, pikeminnow suppression efforts were curtailed several years ago after gillnetting killed 13 steelhead as well as over 60 pikeminnow, which amounted to a "take" of an endangered species.

PG&E and its consultants still monitor fish at three sites between the two dams by raft electro-fishing, Kubicek reported. The fish are shocked, captured, identified by species, measured and returned to the water - except for pikeminnow, which are killed.

Various methods of eliminating pikeminnow have been studied and found inadequate or inappropriate. Fennell asked about derbies that reward fishermen for catching pikeminnow. Steiner replied that it's both expensive and ineffective because so much of the river is inaccessible and because when they are hooked pikeminnow release a pheromone that warns off other pikeminnow.

Both Steiner and Kubicek pointed out that other fish species, including the Chinook, that once seemed to be disappearing have made comebacks.

"It appears that the pikeminnow is here to stay, but the good news is that the Chinook seem to be doing well," said Kubicek.

"I'd like to see a lot more to convince me that pikeminnow are not a problem for the salmon or that they've come into equilibrium with severely depressed (at best) salmonids," FOER's Greacen said to the Redwood Times.

Greacen was also skeptical about reasons for the failure of the suppression efforts. "... Pikeminnow control was not supposed to be an optional duty for PG&E under the RPA as I understand. Rather, they are supposed to make a difference somehow. They keep coming up with problems, but the big one seems to be they don't want to spend more money on it."

The ERRC is also working on a memorandum of agreement to form an inter-county coalition to develop an invasive species management plan. The plan specifically will address the spread of quagga and zebra mussels, tiny but prolific freshwater mollusks that clog water systems, damage docks and piers, and consume plankton vital to the diets of other marine animals.

The next meeting of the ERRC will be coordinated with the field trip to the Potter Valley Project so it will probably be held in Potter Valley if a suitable meeting site can be found there, said commission chair Carre Brown.

The meeting after that will be held in Eureka, possibly in early July, and will address specific Humboldt issues as well as the invasive species management plan.

The ERRC has recently obtained a website, www.eelrussianriver.org. Although the site can be visited, it is still a work in progress.

For more information, contact Wells Hutchins, secretary of the Eel-Russian River Commission, at hutchinw@co.mendocino.ca.us or by phone at 707-234-6665.

BOD misc.

Novato journalist hired as county publicist

Posted: marinij.com

Marin County has hired a veteran Novato journalist to serve as its public information officer.

Brent Ainsworth, 49, a former Independent Journal editor and reporter who most recently headed the Novato Patch website, will fill the $81,000-a-year post under a consulting contract the county has with the Regional Government Services Authority, a joint powers organization that provides local governments in Marin and elsewhere with contract workers.

A $72-an-hour tab for the position includes the cost of benefits as well as "overhead" charged by the Carmel-based authority under a three-year contract. Benefits are provided by the authority, not the county, so Ainsworth will not be part of the county pension system. The authority program gives the county hiring, firing and expense flexibility, although one county official noted the intent is to eventually put the publicist on the regular county payroll.

Ainsworth, who initially will focus on developing content for the county website, will help the administration improve and coordinate public information and communication efforts now handled in part by a number of employees who independently issue news releases on county affairs as part of a "public information team" scattered across a dozen departments.

Although the post has been vacant since 2005, when a publicist who joined the county several months earlier abruptly quit for a better-paying job, Civic Center officials called the role critical for local government.

"One of our core responsibilities is to provide accurate, timely and coordinated information to the public and also provide better opportunities for resident feedback," said Judy Arnold, president of the Board of Supervisors. To that end, Ainsworth will help "improve our efforts and increase transparency of county government," she said.

"My mission will be to help document the achievements and important decisions being made every day at the Civic Center," Ainsworth said.

Ainsworth, who worked as an editor on the Independent Journal sports, copy, features and city desks in stints from 1996 to 2010, also is a veteran of newsrooms at the Santa Cruz Sentinel and San Jose Mercury News. He graduated from Campolindo High School and earned a journalism degree at San Jose State University.

He and his wife, Edie, a Novato elementary school teacher, have two daughters in college.

His first day on the job will be Thursday.

Contact Nels Johnson via email at ij.civiccenter@gmail.com. Follow him at twitter.com/nelsjohnsonnews

North Main Water District

Submitted by Ryan Grisso
Water Conservation Coordinator

The North Marin Water District provides an adequate supply of safe, reliable and high quality water to customers at reasonable cost consistent with good conservation practices and minimum environmental impact.

NMWD carries out its mission with a highly motivated and competent staff empowered to conduct the district's business by placing customer needs and welfare first. Each day, NMWD employees strive to carry out their work mindful of these basic principles: Good Water, Good Service, Good Value, and a Safe Place to Work.

In NMWD's Novato service area, potable water is supplied from two sources. Stafford Lake, supplies approximately 20 percent of Novato's water supply, and lies four miles west of downtown, collecting runoff from 8.3 square miles of watershed land adjacent to the upper reaches of Novato Creek. Water from Stafford Lake is treated at the new Stafford Lake Water Treatment Plant located just below Stafford Lake dam.

About 80 percent of Novato's water is purchased from the Sonoma County Water Agency and delivered from the Russian River. Storage on the Russian River includes Lakes Mendocino and Sonoma. Additionally, Stone-Tree Golf Course is supplied with recycled water and NMWD is working with Novato Sanitary District and Las Gallinas Valley Sanitation District to expand delivery of recycled water to other large landscape areas in Novato.

NMWD offers a wide variety of water conservation programs for residential and non-residential customers including rebates for installing high efficiency toilets, clothes washers and irrigated lawn removal (Cash for Grass). NMWD also offers free "Water Smart Home Surveys," where NMWD completes a comprehensive indoor and outdoor water use survey and provides recommendations for efficiency improvement.

NMWD is an independent special district governed by a five member board of directors elected by the registered voters within the NMWD service area. To learn more about NMWD or if you have questions about your water bill, water supply, details on water conservation programs, visit nmwd.com or call 897-4133.

Talk to us
We value your feedback and input. Send

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