



NORTH MARIN WATER DISTRICT
AGENDA - REGULAR MEETING
 September 20, 2016 – 7:00 p.m.
 District Headquarters
 999 Rush Creek Place
 Novato, California

Information about and copies of supporting materials on agenda items are available for public review at 999 Rush Creek Place, Novato, at the Reception Desk, or by calling the District Secretary at (415) 897-4133. A fee may be charged for copies. District facilities and meetings comply with the Americans with Disabilities Act. If special accommodations are needed, please contact the District Secretary as soon as possible, but at least two days prior to the meeting.

Est. Time	Item	Subject
7:00 p.m.	CALL TO ORDER	
	1.	APPROVE MINUTES FROM REGULAR MEETING , September 6, 2016
	2.	GENERAL MANAGER'S REPORT
	3.	OPEN TIME: (Please observe a three-minute time limit) This section of the agenda is provided so that the public may express comments on any issues not listed on the agenda that are of interest to the public and within the jurisdiction of the North Marin Water District. When comments are made about matters not on the agenda, Board members can ask questions for clarification, respond to statements or questions from members of the public, refer a matter to staff, or direct staff to place a matter of business on a future agenda. The public may also express comments on agenda items at the time of Board consideration.
	4.	STAFF/DIRECTORS REPORTS
	5.	MONTHLY PROGRESS REPORT
	CONSENT CALENDAR The General Manager has reviewed the following items. To his knowledge, there is no opposition to the action. The items can be acted on in one consolidated motion as recommended or may be removed from the Consent Calendar and separately considered at the request of any person.	
	6.	Consent – Approve: CalPERS Resolution to Reduce District Contribution <i>Resolution</i>
	7.	Consent – Approve: ESA – General Services Agreement
	8.	Consent – Approve: KTA-TATOR, Inc. – Consulting Services Agreement
	9.	Consent – Approve: Biennial Review of NMWD's Conflict of Interest Code (Multi-County)
	ACTION CALENDAR	
	10.	Approve: Salary Schedule Revision
	11.	Approve: Bid Advertisement – Recycled Water Expansion Central Service Area – Norman Tank Rehabilitation Project
	12.	Approve: Recycled Water Expansion Central Service Area – East: Award Construction Contract (Mountain Cascade Inc.)
	13.	Approve: Comments on SCWA Fish Habitat Flows and Water Rights Project DEIR
	14.	Approve: Comments on Stafford Lake Master Plan Draft Initial Study
	INFORMATION ITEMS	
	15.	FY16 - Operations/Maintenance Year End Report

All times are approximate and for reference only.

The Board of Directors may consider an item at a different time than set forth herein.

16. TAC Meeting – September 12, 2016

17. **MISCELLANEOUS**
Disbursements

8:15 p.m. 18. **ADJOURNMENT**

1

DRAFT
NORTH MARIN WATER DISTRICT
MINUTES OF REGULAR MEETING
OF THE BOARD OF DIRECTORS
September 6, 2016

CALL TO ORDER

President Schoonover called the regular meeting of the Board of Directors of North Marin Water District to order at 7:00 p.m. at the District Headquarters and the agenda was accepted as presented. Present were Directors Jack Baker, Rick Fraites, Stephen Petterle, Dennis Rodoni and John Schoonover. Also present were General Manager Chris DeGabriele, Acting District Secretary Eileen Mulliner, Auditor-Controller David Bentley and Chief Engineer Drew McIntyre. District Secretary Katie Young was absent.

Bob Maddow (NMWD legal counsel), Gary Skrel and JD Brosnan (The Covello Group), Novato resident Mike Jolly, District employees Ryan Grisso (Water Conservation Coordinator), Robert Clark, (Maintenance/Operations Superintendent) and Tony Arendell (Construction/Maintenance Superintendent) were in the audience.

MINUTES

On motion of Director Baker, seconded by Director Petterle the Board approved the minutes from the previous meeting as presented by the following vote:

AYES: Director Baker, Fraites, Petterle, Rodoni and Schoonover

NOES: None

AMENDED MINUTES

On motion of Director Baker, seconded by Director Fraites the Board approved the amended minutes from the July 19 meeting as presented by the following vote:

AYES: Director Baker, Fraites, Petterle, Rodoni and Schoonover

NOES: None

GENERAL MANAGER'S REPORT

Notice from State Water Resources Control Board (SWRCB)

Mr. DeGabriele advised the Board that on Friday, September 2nd, the District received a letter from the SWRCB noticing a violation for failure to meet water conservation standard and an order requesting additional information.

He stated that the notice states that as of July 2016, the District has not met the conservation standard, which is 0, because compliance is now assessed on a cumulative basis starting in June

1 2016. He noted that the compliance clock had originally started in June 2015 but has been reset
2 and is starting over.

3 Mr. DeGabriele reminded the Board that in June, the District's reported water production was
4 42% more than June 2013 due to the disputed adjustment in deliveries applied by Sonoma County
5 Water Agency. He stated that even though the SWRCB staff assured him subsequent to the
6 District's June report that the District's June 2016 number would be considered pending, and even
7 though the District's June 2015 thru May 2016 reduction was 30% below the same period in 2013
8 when the District's conservation standard was 24%, and even though the District's July 2016
9 production was 18% below July 2013, the SWRCB Enforcement staff has not talked to the SWRCB
10 OPR staff and that is why the District has received this notice.

11 Mr. DeGabriele stated that he has talked to the enforcement staff and left a message with
12 the OPR staff, explained the situation and requested that the notice be rescinded, but at this point
13 he does not know what will occur.

14 **OPEN TIME**

15 President Schoonover asked if anyone in the audience wished to bring up an item not on
16 the agenda and the following items were discussed:

17 Mr. McIntyre reported on the Novato Watershed Program presentation by Marin County staff
18 to the Novato City Council on August 30th that he attended. He advised that the presentation was an
19 overview and that polling for a possible future tax or fee ballot measure will take place in September.
20 He also advised that a meeting of the Policy committee will take place in late September (9/28 or
21 9/30).

22 Mr. McIntyre also advised that he will attend the Novato City Council meeting next Tuesday
23 where the City will consider an agreement with the District to utilize the Rowland Way bridge over
24 Novato Creek for the Recycled Water Central Service Area pipeline.

25 Mr. Clark informed the Board that the Deer Island Recycled Water Treatment Plant started
26 up this week and will run thru September. He indicated that the District's new Assistant Distribution
27 & Treatment Plant Operators were instrumental in starting up the plant.

28 **STAFF/DIRECTORS REPORTS**

29 President Schoonover asked if staff or Directors wished to bring up an item not on the
30 agenda and there was no response.

1 **CONSENT CALENDAR**

2 On the motion of Director Petterle, seconded by Director Fraites the Board approved the
3 following items on the consent calendar by the following vote:

4 AYES: Director Baker, Fraites, Petterle, Rodoni and Schoonover

5 NOES: None

6 **EMPLOYER ASSISTED HOUSING PROGRAM – BOARD POLICY #42**

7 The Board approved a revision to the Employer Assisted Housing Program. At the August
8 2nd meeting the Board re-instated the program and approved a requirement setting the minimum
9 down payment based on a sliding scale. The revisions are now incorporated into the policy which
10 identifies that home purchase prices less than \$600K would require a minimum 5% down payment
11 increasing to a 10% down payment for homes with a purchase price over \$1M.

12 **AMI PROJECT CEQA**

13 The Board authorized staff to employ GHD to perform the Environmental Review for the
14 District's automated metering information project. The State Water Board requires CEQA
15 documentation prior to approving project SRF funding. GHD (formerly Winzler & Kelly) has
16 performed CEQA work for the District in the past and recently prepared Santa Rosa's AMI project
17 CEQA analysis. The District currently maintains a General Services Agreement with GHD. It's
18 expected the work will cost approximately \$25K.

19 **CONSULTING SERVICES FOR ICF – HABITAT SURVEY IN UPPER NOVATO CREEK**

20 The Board authorized staff to enter into an agreement with ICF International to perform
21 steelhead habitat survey in Upper Novato Creek. Last winter, the District engaged Cardno
22 Associates to perform a field reconnaissance evaluation of the Novato Creek mainstream both
23 upstream and downstream of Stafford Dam to make a preliminary assessment of the steelhead
24 habitat. That reconnaissance investigation was reported in comments to National Marine Fisheries
25 Service (NMFS) on the Coastal Multi-Species Recovery Plan reflecting that Novato Creek primarily
26 provides highly degraded steelhead spawning and rearing habitat. The District has requested that
27 Upper Novato Creek be removed from the potential steelhead area in the Recovery Plan and has
28 been asked to coordinate with NMFS staff on further evaluation of the habitat potential above the
29 dam. Consultants from Cardno have now moved on to ICF International and HDR. Estimated cost is
30 not to exceed \$20,803.

1 **ACTION CALENDAR**

2 **REQUEST FOR BILL ADJUSTMENT**

3 Mr. Bentley requested the Board consider a request for a bill adjustment from Lisa Hoytt at
4 136 Windwalker Way for an August bill of \$1,079 based on June/July water use in excess of 2,000
5 gallons per day. Mr. Bentley explained that Ms. Hoytt did not qualify under the Board policy.

6 Ms. Hoytt was unable to attend the meeting.

7 On the motion of Director Baker, seconded by Director Petterle, the Board denied the bill
8 adjustment by the following vote:

9 AYES: Director Baker, Fraites, Petterle, Rodoni and Schoonover

10 NOES: None

11 **RECYCLED WATER EXPANSION CENTRAL SERVICE AREA – REJECT BID PROTEST AND**
12 **AWARD CONSTRUCTION CONTRACT (GHILLOTTI CONSTRUCTION CO.)**

13 Mr. McIntyre requested that the Board approve award of the construction contract to Ghillotti
14 Construction for the Recycled Water Expansion Central Service Area – West Project which includes
15 3.8 miles of Recycled Water pipeline in the amount of \$5,878,611.50 plus a \$400,000 contingency.
16 He stated that Ghillotti was the low bidder among the six bids received and was 7% below the
17 engineers estimate. He noted that the District's Construction Manager, Covello Group, prepared the
18 bid evaluation and a bid protest was received by the second low bidder Mountain Cascade Inc. Mr.
19 McIntyre stated that the filed bid protest claimed the low bid was flawed in 3 areas: 1) Failure to
20 submit a listing of key personnel, 2) Failure to list manufacturer of pipe, fittings & valves, and 3)
21 That the bid was unbalanced due to limited unit pricing for hard rock excavation. He noted that
22 District legal counsel reviewed Mountain Cascades protest and Ghillotti's response and opined that
23 Ghillotti's bid is responsive and recommends rejecting Mountain Cascade's protest in its' entirety.

24 Mr. McIntyre informed the Board that the project will receive WaterSmart Grant Funds from
25 the Bureau of Reclamation and grant and loan funds from the State Revolving Fund program. He
26 stated that the work includes installation of 450ft of 8" PVC pipe, 18,750ft of 12" PVC and
27 approximately 500ft of 16" HDPE pipe (from Entrada Drive to Norman Tank by horizontal directional
28 drill method), together with all appurtenances and pavement restoration.

29 Director Petterle asked if the District typically allows contractors to review other bid
30 proposals and Mr. McIntyre replied in the affirmative.

1 Bob Maddow, District legal counsel, opined that his colleague, Carl Nelson's, letter
2 recommending rejection of the bid protest is well done and the Covello bid analysis is also very well
3 done.

4 On the motion of Director Petterle, seconded by Director Fraites the Board approved the
5 rejection of the bid protest by Mountain Cascade and the contract award to Ghilotti Construction Co.
6 by the following vote:

7 AYES: Director Baker, Fraites, Petterle, Rodoni and Schoonover

8 NOES: None

9 President Schoonover left the meeting at 7:19pm.

10 **INFORMATION ITEMS**

11 **WATER CONSERVATION YEAR END REPORT (JULY 2015 THROUGH JUNE 2016)**

12 Mr. Grisso provided the Board with the Year-End Water Conservation Report which shows
13 that Cash for Grass Rebates continue to be very popular in Novato. He stated that 132 Cash For
14 Grass Projects removing a total of 132,000sq/ft of turf were authorized in fiscal year 2016. He noted
15 that this was the second best year ever for program participation and the highest square footage
16 year for lawn area removal. Mr. Grisso stated that the other water conservation programs were on
17 par with prior years except washing machine rebates were down by 1/3rd as were Water Smart
18 Home Surveys.

19 President Schoonover returned to the meeting at 7:22 p.m.

20 **YEAR END PROGRESS REPORT – ENGINEERING DEPARTMENT**

21 Mr. McIntyre provided the Board with the Year-End Engineering Department Report showing
22 that 19 of 22 projects scheduled for completion in fiscal year 2016 were completed, 15 in Novato
23 and 4 in West Marin. He shared photos of the projects both in Novato and West Marin focusing on
24 polybutylene replacements on Grandview Ave, Flushing Taps at Dead Ends, Sunset Tank Mixing
25 System, and South Novato Blvd Rowland to Sunset Blvd. Cast-Iron Pipe Replacement. Mr. McIntyre
26 shared photos in West Marin of the Tank Seismic Piping Upgrade, Upsizing the 4" Pipe from Bear
27 Valley Tanks, and the upcoming PRE Tank 4A Replacement.

28 **FY16 RESIDENTIAL CONSUMPTION STATUS REPORT**

29 Mr. Bentley updated the Board on the Residential Consumption Status Report, showing that
30 Novato median single-family home water consumption fell to 72,000 gallons last fiscal year. He
31 stated that total water consumption in Novato was reduced to 1.6BG principally due to the State's
32 mandatory water use restrictions. Mr. Bentley focused on the District's rate structure which shows

1 that Novato customers subject to the Conservation Incentive Rate (use over 1,845 gallons per day)
2 has fallen 72% since the CIR was adopted in 2004 and water demand between 615 and 1,845
3 gallons per day subject to the Conservation Incentive Tier Rate has fallen 42% since the CITER was
4 implemented in 2007. He noted that last fiscal year 96% of Novato single-family residential
5 customers never triggered a tier rate and only four percent got into the CITER tier.

6 Director Rodoni asked if there is any update on legal challenges to tier rates. District legal
7 counsel, Bob Maddow, replied that he would look into that and get recent information back to staff to
8 distribute to the Board.

9 Novato Resident, Mike Jolly asked if the drought impact had any effect on the residential
10 consumption analysis. Mr. Bentley explained that the extreme reduction in overall water demand to
11 1.6BG, a level not seen since FY1978 and well below the recent consumption average of 2.2BG
12 reflects the mandatory drought restrictions.

13 **AMI PROJECT STATUS UPDATE**

14 Mr. Bentley also updated the Board on the Automated Meter Information System. He
15 informed the Board that the District has received four comprehensive vendor proposals and District
16 staff along with consultant Utlworks is recommending Ferguson as the contractor to begin
17 negotiations to refine proposal pricing, hardware and software details, and set performance and
18 acceptance standards for a pilot project. Mr. Bentley stated that the pilot project will involve
19 retrofitting about 200 meters in various locations throughout Novato to confirm that the AMI will
20 achieve a minimum 98.5% read rate success within the Novato rolling topography and that AMI
21 software will successfully integrate with the District's billing system and third-party customer portal
22 software. He advised the Board that the District hopes to secure 2% State Revolving Fund loan for
23 the project and must prepare the CEQA review prior to SRF loan approval.

24 **SUSTAINABLE GROUNDWATER MANAGEMENT ACT IN SONOMA COUNTY**

25 Mr. DeGabriele updated the Board on the Sustainable Groundwater Management Act
26 meeting he attended. He advised the Board that the consumers who are on well water want to be
27 represented. He noted that the estimated cost of the sustainability plan is around \$750,000 to
28 \$2.5M and the USGS study has one more year to go in Petaluma valley.

29 **PACIFIC GAS AND ELECTRIC COMPANY'S APPLICATION FOR TEMPORARY VARIANCE OF** 30 **MINIMUM FLOWS IN THE EEL RIVER AND EAST BRANCH RUSSIAN RIVER**

31 Mr. DeGabriele updated the Board on PG&E's application for Temporary Variance of
32 minimum flows in the Eel River and East Branch Russian River. He reminded the Board that District
33 legal counsel, Robert Maddow, filed the comments on behalf of the District on August 10, 2016, and

1 that FERC has now granted the extension of the temporary variance and ordered that it remain in
2 effect until such time as Lake Pillsbury storage levels exceed 27,000 acre feet following October 1,
3 2016. He noted that the FERC order granting the extension references the District's comments
4 acknowledging support for a revision to PG&E's water management practices at the project but
5 makes no provision for the District or another drinking water entity to participate in the drought
6 working group as had been requested.

7 **NBWRA UPDATE – AUGUST 22, 2016**

8 Mr. McIntyre advised the Board of the shift in governance at North Bay Water Reuse
9 Authority (NBWRA) and that the NBWRA Board is now being asked to use their strength and
10 connections to solicit new/additional members and projects. He indicated that Director Baker
11 represented the District at the August 22nd meeting and that the District's role should not change as
12 the District only participates in Phase 1 and the governance change is driven by Phase 2. He further
13 advised that some folks suggest NBWRA shift to a JPA form of governance. He noted that the next
14 meeting will be on September 19th at Novato Sanitary District.

15 **NBWA MEETING – SEPTEMBER 9, 2016**

16 Director Baker advised he would attend the NBWA meeting on Friday, September 9th.

17 **MISCELLANEOUS**

18 The Board received the following miscellaneous items: Disbursements, 2017 Medical Plan
19 Cost Increase, STP Solar Power Facility – 4th Year Status Report, Marin County Fish and Wildlife
20 Commission, and Praise from Vendor re: NMWD Treatment Plant Staff.

21 The Board also received the following news articles: Sonoma City Council tables climate
22 action, Project Proposes Changes in Russian River Flows to Benefit Endangered Coho, Steelhead,
23 ACWA Region 1 Host Russian River Water Supply System Tour, Drought's on, but Mandatory Cuts
24 off for Most in California, Santa Rosa among local cities exempted from state's mandatory water-
25 saving targets, and Nicasio's water future up for discussion.

26 The Board received the following news article at the Board meeting: Marin water supplier
27 launches climate risk preparations.

28 **CLOSED SESSION**

29 President Schoonover adjourned the Board into closed session at 8:09 p.m. in accordance
30 with Government Code Section 54957 for Public Employee Performance Evaluation (One), Title:
31 General Manager (Chris DeGabriele and Drew McIntyre). Director Rodoni and Director Petterle
32 excused themselves and did not attend the closed session, citing a potential conflict of interest.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12

ADJOURNMENT

Submitted by

Eileen Mulliner
Acting District Secretary

2

3

4

5

NORTH MARIN WATER DISTRICT
MONTHLY PROGRESS REPORT FOR August 2016
 September 20, 2016

1.

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

Month	FY16/17	FY15/16	FY14/15	FY13/14	FY12/13	17 vs 16 %
July	345	252	319	385	389	37%
August	326	274	301	360	396	19%
FYTD Total	671	527	620	745	785	27%

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

Month	FY16/17	FY15/16	FY14/15	FY13/14	FY12/13	17 vs 16 %
July	7.9	6.6	8.6	9.3	9.8	20%
August	7.4	7.0	8.5	9.3	9.7	6%
FYTD Total	15.4	13.6	17.1	18.6	19.5	13%

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

Month	FY16/17	FY15/16	FY14/15	FY13/14	FY12/13	17 vs 16 %
July	70	108	83	98	49	-35%
August	90	79	61	83	83	14%
FYTD Total	160	187	144	181	131	-14%

Recycled Water Production* - in Million Gallons - FY to Date

Month	FY16/17	FY15/16	FY14/15	FY13/14	FY12/13	16 vs 15 %
July	27.1	21.3	21.8	27.6	11.2	27%
August	26.0	26.2	26.0	26.2	10.5	-1%
FYTD Total*	53.1	47.6	47.8	53.8	21.7	12%

*Excludes potable water input to the RW system: FYTD17=0.0MG; FYTD16=1.3MG; FYTD15=4.5MG; FYTD14=1.6MG.

2. **Stafford Lake Data**

	August Average	August 2015	August 2016
Rainfall this month	0.05 Inches	0 Inches	0 Inches
Rainfall this FY to date	0.06 Inches	0 Inches	0 Inches
Lake elevation*	185.0 Feet	184.2 Feet	186.5 Feet
Lake storage**	694 MG	653 MG	772 MG

* Spillway elevation is 196.0 feet

** Lake storage less 390 MG = quantity available for delivery

Temperature (in degrees)

	Minimum	Maximum	Average
August 2015 (Novato)	55	104	71
August 2016 (Novato)	52	96	71

3. **Number of Services**

August 31	Novato Water			Recycled Water			West Marin Water			Oceana Marin Swr		
	FY17	FY16	Incr %	FY17	FY16	Incr %	FY17	FY16	Incr %	FY17	FY16	Incr %
Total meters	20,768	20,744	0.1%	48	48	0.0%	787	784	0.4%	-	-	-
Total meters active	20,533	20,501	0.2%	44	44	0.0%	781	776	0.6%	-	-	-
Active dwelling units	23,976	23,965	0.0%	0	0	-	827	823	0.5%	230	229	0.4%

4. Oceana Marin Monthly Status Report (August)

Description	August 2015	August 2016
Effluent Flow Volume (MG)	0.476	0.462
Irrigation Field Discharge (MG)	0.450	0.323
Treatment Pond Freeboard (ft)	3.8	3.4
Storage Pond Freeboard (ft)	8.8	6.6

5. Developer Projects Status Report (August)

Job No.	Project	% Complete	% This month
1.2774.00	Mt. Burdell Place	90	10
1.2777.00	Walnut Meadows	100	5
1.2792.00	Mendocino Lane	70	70

District Projects Status Report - Const Dept (August)

Job No.	Project	% Complete	% This month
1.7145.00	Zone A Pressure Improvements	80	10
1.8737.05	Plum St. Meter Relocations	90	90
8.7167.00	Oceana Marin Dosing Siphon Repairs	5	5

Employee Hours to Date, FY 16/17

As of Pay Period Ending August 31, 2016

Percent of Fiscal Year Passed = 17%

Developer Projects	Actual	Budget	% YTD Budget	District Projects	Actual	Budget	% YTD Budget
Construction	289	1,400	21%	Construction	561	4,658	12%
Engineering	122	1,480	8%	Engineering	675	4,032	17%

6. Safety/Liability

Industrial Injury with Lost Time				Liability Claims Paid	
Lost Days	OH Cost of Lost Days (\$)	No. of Emp. Involved	No. of Incidents	Incurred (FYTD)	Paid (FYTD) (\$)
FY 17 through August	10	5540	1	1	0
FY 16 through August	0	0	0	0	2
					1,956
					17,810

Days without a lost time accident through August 31, 2016 = 27 days

7. Energy Cost

FYE	Kwh	¢/Kwh	Cost/Day	Fiscal Year-to-Date thru August		
2017 Stafford TP	69,611	18.6¢	\$418	143,886	18.6¢	\$433
Pumping	153,535	20.2¢	\$1,035	317,576	20.2¢	\$1,033
Other*	47,046	26.0¢	\$408	95,495	26.3¢	\$411
	270,191	20.8¢	\$1,875	556,956	20.8¢	\$1,901
2016 Stafford TP	73,348	18.1¢	\$427	147,747	18.1¢	\$430
Pumping	134,594	17.7¢	\$746	248,939	18.1¢	\$740
Other*	44,989	25.5¢	\$370	83,878	25.8¢	\$361
	252,931	19.2¢	\$1,568	480,564	19.5¢	\$1,533
2015 Stafford TP	70,034	17.5¢	\$396	146,282	17.5¢	\$414
Pumping	164,462	16.6¢	\$855	326,497	16.8¢	\$886
Other*	46,816	22.8¢	\$334	92,564	23.2¢	\$346
	281,311	17.9¢	\$1,572	565,343	18.1¢	\$1,646

*Other includes West Marin Facilities

8. Water Conservation Update

	Month of August 2016	Fiscal Year to Date	Program Total to Date
High Efficiency Toilet (HET) Rebate (\$100 each)	28	49	3,586
Retrofit Certificates Filed	18	41	5,594
Cash for Grass Rebates Paid Out	10	17	843
Washing Machine Rebates	7	14	6,716
Water Smart Home Survey	36	73	2,417

9. Utility Performance Metric

SERVICE DISRUPTIONS (No. of Customers Impacted)	August 2016	August 2015	Fiscal Year to Date 2017	Fiscal Year to Date 2016
PLANNED				
Duration Between 0.5 and 4 hours	16	8	27	29
Duration Between 4 and 12 hours	3	4	3	6
Duration Greater than 12 hours				
UNPLANNED				
Duration Between 0.5 and 4 hours	13	9	14	27
Duration Between 4 and 12 hours	1		1	57
Duration Greater than 12 hours	1		1	
SERVICE LINES REPLACED				
Polybutylene	22	14	28	36
Copper (Replaced or Repaired)	2	0	8	4

NORTH MARIN WATER DISTRICT

Summary of Complaints & Service Orders August 2016

9/9/2016

<u>Type</u>	<u>Aug-16</u>	<u>Aug-15</u>	<u>Action Taken August 2016</u>
<u>Consumers' System Problem</u>			
Service Line Leaks	31	29	Notified Consumer
Meter Leak Consumer's Side	1	0	Notified Consumer
House Plumbing	0	0	~
Noisy Plumbing	0	1	~
Seepage or Other	0	0	~
House Valve / Meter Off	4	12	Notified Consumer
Nothing Found	16	9	Notified Consumer
Low Pressure	1	1	Pressure @ 40 PSI. PRV needs to be replaced.
High Pressure	0	0	~
Water Waster Complaints	0	0	~
Total	53	52	
<u>Service Repair Reports</u>			
Register Replacements	0	0	~
Meter Replacement	3	3	Notified Consumer
Meter Box Alignment	0	0	~
Meter Noise	0	0	~
Dual Service Noise	0	0	~
Box and Lids	0	1	~
Water Off/On Due To Repairs	12	3	Notified Consumer
Misc. Field Investigation	0	2	~
Total	15	9	
<u>Leak NMWD Facilities</u>			
Main-Leak	0	0	~
Mains-Nothing Found	0	0	~
Mains-Damage	0	0	~
Service- Leak	19	10	Repaired
Services-Nothing Found	2	6	Notified Consumer
Service-Damaged	0	0	~
Fire Hydrant-Leak	2	2	Repaired
Fire Hydrants-Nothing Found	0	0	~
Fire Hydrants-Damaged	0	0	~
Meter Replacement	0	0	~
Meters-Nothing Found	0	0	~
Meters Damaged	0	0	~
Washer Leaks	7	11	Replaced
Total	30	29	
<u>High Bill Complaints</u>			
Consumer Leaks	14	1	Notified Consumer
Meter Testing	0	0	~
Meter Misread	11	3	Notified Consumer
Nothing Found	46	11	Notified Consumer
Projected Consumption	0	0	~
Excessive Irrigation	0	0	~
Total	71	15	

NORTH MARIN WATER DISTRICT

Summary of Complaints & Service Orders August 2016

9/9/2016

Type	Aug-16	Aug-15	Action Taken August 2016
<u>Low Bill Reports</u>			
Meter Misread	1	0	~
Stuck Meter	0	0	~
Nothing Found	0	0	~
Projected Consumption	0	0	~
Minimum Charge Only	0	0	~
Total	1	0	

Water Quality Complaints

Taste and Odor	3	1	<i>Customer reported bad taste in the water. (Santa Maria Dr)</i> Customer canceled appointment. Stated bad taste was due to hose backflow. <i>Customer reported chlorine taste in the water. (S Novato Blvd)</i> All results were clean & normal for NMWD water. Customer was notified of results. <i>Customer reported bad taste in the water. (Wild Horse Valley Rd)</i> Customer canceled appointment. Stated bad taste was due to hose backflow.
Color	0	1	~
Turbidity	0	0	~
Suspended Solids	0	0	~
Other	0	1	~

Total	3	3	
TOTAL FOR MONTH:	173	108	60%

<u>Fiscal YTD Summary</u>			<u>Change Primarily Due To</u>
Consumer's System Problems	93	106	-12% Decrease In House Valve/Meter Off
Service Repair Report	25	19	32% Increase In Water Off/On For Repairs
Leak NMWD Facilities	50	64	-22% Decrease In Services-Nothing Found
High Bill Complaints	103	39	164% Increase in Nothing Found
Low Bills	1	1	0% ~
Water Quality Complaints	6	8	-25% Decrease in Color
Total	278	237	17%

NORTH MARIN WATER DISTRICT

Summary of Complaints & Service Orders August 2016

9/9/2016

<u>Type</u>	<u>Aug-16</u>	<u>Aug-15</u>	<u>Action Taken August 2016</u>
<u>"In House" Generated and Completed Work Orders</u>			
<u>Check Meter:</u> possible consumer/District leak, high bill, flooded, need read, etc.	242	195	
<u>Change Meter:</u> leaks, hard to read	7	16	
<u>Possible Stuck Meter</u>	0	0	
<u>Repair Meter:</u> registers, shut offs	0	0	
<u>Replace Boxes/Lids</u>	0	7	
<u>Hydrant Leaks</u>	0	0	
<u>Trims</u>	12	38	
<u>Dig Outs</u>	32	106	
<u>Letters to Consumer:</u> meter obstruction, trims, bees, gate access, etc. get meter number, kill service, etc.	0	0	
	<u>293</u>	<u>362</u>	

Bill Adjustments Under Board Policy:

August 16 vs. August 15

Aug-16	42	\$11,970
Aug-15	13	\$4,340

Fiscal Year to Date vs. Prior FYTD

16/17 FYTD	54	\$16,904
15/16 FYTD	36	\$8,657

t:\cons srvc\complaint report\complain 17.xls]aug16

MEMORANDUM

To: Board of Directors

September 16, 2016

From: David L. Bentley, Auditor-Controller

Subj: Auditor-Controller's Monthly Report of Investments for August 2016

t:\aclword\invest\17\investment report 0816.doc

RECOMMENDED ACTION: Information

FINANCIAL IMPACT: None

At month end the District's Investment Portfolio had an amortized cost value (i.e., cash balance) of \$12,479,528 and a market value of \$12,478,179. During August the cash balance decreased by \$409,264. The market value of securities held decreased \$5,472 during the month. The ratio of total cash to budgeted annual operating expense stood at 83%, down 2% from the prior month.

At August 31, 2016, 21% of the District's Portfolio was invested in California's Local Agency Investment Fund (LAIF), 32% in Time Certificate of Deposit, 8% in US Treasury Notes, 24% in Federal Agency Securities, 5% in Corporate Medium Term Notes, and 6% in the Marin County Treasury. The weighted average maturity of the portfolio was 247 days, compared to 246 days at the end of July. The LAIF interest rate for the month was 0.61%, compared to 0.59% the previous month. The weighted average Portfolio rate was 0.77%, compared to 0.76% the previous month. Including interest paid by The Bay Club on the StoneTree Golf Recycled Water Facilities Loan, the District earned \$12,394 in interest revenue during August, with 57% earned by Novato Water, 31% earned by Recycled Water (by virtue of the StoneTree Golf Loan) and the balance distributed to the two West Marin districts.

NORTH MARIN WATER DISTRICT
AUDITOR-CONTROLLER'S MONTHLY REPORT OF INVESTMENTS
August 31, 2016

Type	Description	S&P Rating	Purchase Date	Maturity Date	Cost Basis ¹	8/31/2016 Market Value	Yield ²	% of Portfolio ³
LAIF	State of CA Treasury	AA-	Various	Open	\$2,591,136	\$2,591,709	0.61%	21%
Time Certificate of Deposit								
TCD	Ally Bank	n/a	10/2/14	10/3/16	248,000	248,000	0.95%	2%
TCD	Cardinal Bank	n/a	11/12/14	11/14/16	249,000	249,000	0.80%	2%
TCD	Goldman Sachs	n/a	12/10/14	12/12/16	248,000	248,000	1.00%	2%
TCD	First Niagara Bank	n/a	4/30/15	5/1/17	249,000	249,000	0.75%	2%
TCD	Discover Bank	n/a	5/6/15	5/8/17	248,000	248,000	0.85%	2%
TCD	Capital One Bank	n/a	6/10/15	6/12/17	248,000	248,000	0.90%	2%
TCD	Flagship Cmnty Bank	n/a	6/24/15	6/24/17	249,000	249,000	0.75%	2%
TCD	American Express Bank	n/a	7/8/15	7/10/17	248,000	248,000	1.15%	2%
TCD	Capital One National Assoc	n/a	8/5/15	8/7/17	248,000	248,000	1.20%	2%
TCD	American Express Centurion	n/a	10/7/15	10/10/17	248,000	248,000	1.20%	2%
TCD	BMW Bank	n/a	12/14/15	12/11/17	248,000	248,000	1.20%	2%
TCD	Wells Fargo Bank	n/a	3/23/16	3/23/18	248,000	248,000	1.10%	2%
TCD	Mercantil Commerce Bank	n/a	6/17/16	6/15/18	248,000	248,000	1.00%	2%
TCD	Customers Bank	n/a	6/24/16	6/25/18	248,000	248,000	1.20%	2%
TCD	Merrick Bank	n/a	7/19/16	7/19/18	249,000	249,000	1.00%	2%
TCD	BMO Harris Bank	n/a	8/18/16	8/17/18	248,000	248,000	1.05%	2%
					\$3,972,000	\$3,972,000	0.99%	32%
US Treasury Notes								
Treas	1,000 - 1.00%	n/a	8/4/14	9/30/16	1,000,293	1,000,622	0.65%	8%
					\$1,000,293	\$1,000,622	0.64%	8%
Federal Agency Securities								
FFCB	1.70% MTN	n/a	9/15/14	10/28/16	\$500,815	\$501,052	0.69%	4%
FHLB	0.58% MTN	n/a	11/7/14	11/14/16	499,933	500,121	0.64%	4%
FICO	0.86% MTN	n/a	4/22/16	5/11/18	1,002,347	1,001,992	0.86%	8%
FNMA	0.875% MTN	n/a	7/19/16	7/19/18	998,772	996,422	0.97%	8%
					\$3,001,867	\$2,999,587	0.83%	24%
Corporate Medium Term Notes								
MTN	General Electric Capital	AA+	3/18/16	5/15/17	\$641,112	\$641,141	0.76%	5%
					\$641,112	\$641,141	0.75%	5%
Other								
Agency	Marin Co Treasury	AA+	Various	Open	\$735,570	\$735,570	0.32%	6%
Other	Various	n/a	Various	Open	537,550	537,551	0.50%	4%
TOTAL IN PORTFOLIO					\$12,479,528	\$12,478,179	0.77%	100%

Weighted Average Maturity = **247 Days**

LAIF: State of California Local Agency Investment Fund.

TCD: Time Certificate of Deposit, Treas: US Treasury Notes with maturity of 5 years or less.

FFCB: Federal Farm Credit Bank, FHLB: Federal Home Loan Bank, FICO: Financing Corporation,

FNMA: Federal National Mortgage Association

Agency: STP State Revolving Fund Loan Reserve.

MTN: Medium Term Note - Maturity of 5 years or less.

Other: Comprised of 4 accounts used for operating purposes. US Bank Operating Account, US Bank STP SRF Loan

Account, Bank of Marin AEEP Checking Account & NMWD Petty Cash Fund.

1 Original cost less repayment of principal and amortization of premium or discount.

2 Yield defined to be annualized interest earnings to maturity as a percentage of invested funds.

3 Earnings are calculated daily - this represents the average yield for the month ending August 31, 2016.

Interest Bearing Loans	Loan Date	Maturity Date	Original Loan Amount	Principal Outstanding	Interest Rate
StoneTree Golf Loan	6/30/06	2/28/24	\$3,612,640	\$1,695,199	2.40%
Employee Housing Loans (5)	Various	Various	934,200	934,200	Contingent
TOTAL INTEREST BEARING LOANS			\$4,546,840	\$2,629,399	


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

6

MEMORANDUM

To: Board of Directors

September 16, 2016

From: Dianne Landeros, Accounting/HR Supervisor 

Subj: CalPERS Resolution to Reduce District Contribution

\\nmwdserver1\administration\finance\memos\bod pers employee contribution 2016.docx

RECOMMENDED ACTION: Approve CalPERS Resolution**FINANCIAL IMPACT:** Reduce the District-paid Retirement contribution by 1.6%, approximately \$65,648¹ annual savings

On December 28, 2012, the NMWD Employee Association approved a labor agreement (Memorandum of Understanding) with the District. Section 12 (Retirement) of the MOU provides that effective January 1, 2013 and on each subsequent October 1 through October 1, 2016, employees will contribute an additional 1.6% of salary toward the cost of CalPERS retirement benefits, until Classic* members are paying a total of 8% toward the cost of CalPERS retirement benefits, and New* members are paying 6.25%. Currently Classic members contribute 6.4% and the District contributes 1.6% of the members' contribution to CalPERS. New members currently pay their entire 6.25% members' contribution.


Attached is CalPERS required Resolution for Employer Paid Member Contributions to reduce the District paid employee contribution to 0.0% (from 1.6% currently) for Classic members effective October 1, 2016.

Recommendation

Approve the attached resolution reducing the District's CalPERS contribution to 0.0% for Classic members effective October 1, 2016.

* Classic – Members hired prior to January 1, 2013
New – Members hired on or after January 1, 2013

¹ Calculated: Per Overhead Payroll Rate Calculation spreadsheet (PPE 9/15/16) CalPERS Classic member regular salary \$4,103,029 x 1.6% = \$65,648

Approved by GM Date 9/16/2016

RESOLUTION 16-xx

**RESOLUTION OF THE BOARD OF DIRECTORS OF
NORTH MARIN WATER DISTRICT
FOR EMPLOYER PAID MEMBER CONTRIBUTIONS**

WHEREAS: The Board of Directors of the North Marin Water District has the authority to implement Government Code Section 20691;

WHEREAS: The Board of Directors of the North Marin Water District has a written labor agreement which specifically provides for the normal member contributions to be paid by the employer;

WHEREAS: One of the steps in the procedure to implement Section 20691 is the addition by the Board of Directors of the North Marin Water District of a Resolution to commence said Employer Paid Member/Contributions (EPMC);

WHEREAS: The Board of Directors of the North Marin Water District has identified the following conditions for the purpose of its election to pay EPMC:

- This benefit shall apply to all employees of North Marin Water District.
- This benefit shall consist of paying 0.0% of the normal member contributions for Classic Members as EPMC.
- The effective date of this Resolution shall be October 1, 2016.

NOW, THEREFORE, BE IT RESOLVED:

That the Board of Directors of the North Marin Water District elects to pay 0.0% EPMC, as set forth above.

Dated at Novato, California
September 20, 2016

John Schoonover, President
North Marin Water District

* * * * *

I hereby certify that the foregoing is a true and complete copy of a resolution duly and regularly adopted by the Board of Directors of NORTH MARIN WATER DISTRICT at a regular meeting of said Board held on the 20th day of September 2016 by the following vote:


AYES:
NOES:
ABSENT:
ABSTAINED:

Eileen Blue, Acting District Secretary
North Marin Water District

(SEAL)

7

MEMORANDUM

To: Board of Directors September 16, 2016
 From: Drew McIntyre, Assistant General Manager / Chief Engineer 
 Subject: Environmental Services Associates (ESA) – General Services Agreement
R:\NON JOB No ISSUES\Consultants\ESAAgmt_BOD Memos\Approve ESA Env Mon Servs BOD memo 9-20-16.doc

RECOMMENDED ACTION: Authorize General Manager to execute a General Consulting Services Agreement with ESA

FINANCIAL IMPACT: \$30,000 (included in FY16 and FY CIP budgets)

Central Service Area Environmental Monitoring Services

In accordance with the NBWRA EIR, North Marin Water District is responsible to ensure proper implementation of the various mitigation measures during the construction phase of the Recycled Water Central Service Area Expansion project. Since ESA prepared the EIR and has also worked with various permitting and regulatory agencies in the development of the Mitigation Monitoring Plan, staff recommends that a General Consulting Services (GCS) agreement be awarded to ESA for environmental compliance monitoring and construction support services.


To best meet project demands, a new \$30,000 GCS Agreement is desired and will be executed with individual task orders (attached). The first task order to be funded through this Agreement will be for the Central Service Area Expansion project pre-construction plant surveys, construction monitoring and reporting. This first task order will be approximately \$12,000.

A summation of previously approved contract amendments with ESA for the last five years is provided as follows:

TABLE I		
	Description	Total Billings
FY11-12	RW North and South Permitting Tasks	\$108,463
FY12-13	RW North and South Const Monitoring	\$50,194
FY13-14	AEEP Biological Monitoring	\$43,848
FY14-15	RW Central Supplemental EIR/Permits	\$23,274
FY15-16	RW Central Supplemental EIR /Permits	\$50,984
	TOTAL	\$276,763

RECOMMENDATION

Authorize General Manager to execute a General Consulting Services Agreement between NMWD and ESA with a not-to-exceed limit of \$30,000.

Approved by GM 

Date 9/16/2016

AGREEMENT FOR CONSULTING SERVICES

The following is an agreement between **North Marin Water District**, hereinafter "**NMWD**", and **Environmental Science Associates (ESA)**, hereinafter, "**Consultant**".

WHEREAS, Consultant is a duly qualified consulting firm, experienced in environmental monitoring services.

WHEREAS, in the judgment of the Board of Directors of the NMWD, it is necessary and desirable to employ the services of the Consultant for the Recycled Water Central Service Area Expansion project.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the parties hereto agree as follows:

PART A -- SPECIFIC PROVISIONS:

1. DESCRIPTION OF SERVICES AND PAYMENT: Except as modified in this agreement, the services to be provided and the payment schedule are:

- a. The scope of work and fee amount covered by this agreement shall be that specified on a task by task basis.
- b. The fee for the work shall be on a time and expense (T & E) basis utilizing the fee schedule included in Attachment A of this agreement and shall not exceed \$30,000 without prior written authorization by NMWD.

PART B -- GENERAL PROVISIONS

1. ASSIGNMENT/DELEGATION: Except as above, neither party hereto shall assign, sublet or transfer any interest in or duty under this agreement without written consent of the other, and no assignment shall be of any force or effect whatsoever unless and until the other party shall have so consented.

2. STATUS OF CONSULTANT: The parties intend that the Consultant, in performing the services hereinafter specified, shall act as an independent contractor and shall have the control of the work and the manner in which it is performed. The Consultant is not to be considered an agent or employee of NMWD, and is not entitled to participate in any pension plan, insurance, bonus or similar benefits NMWD provides its employees.

3. INDEMNIFICATION: NMWD is relying on the professional ability and training of the Consultant as a material inducement to enter into this agreement. The Consultant hereby warrants that all its work will be performed in accordance with generally accepted professional practices and standards, as well as the requirements of applicable federal, state and local laws, it being understood that neither acceptance of the Consultant's work by NMWD nor Consultant's failure to perform shall operate as a waiver or release.

- a. With respect to professional services under this agreement, Consultant shall assume the defense of and defend NMWD, its directors, officers, agents, and employees in any action at law or in equity in which liability is claimed or alleged to arise out of, pertain to, or relate to, either directly or indirectly, the intentional or willful misconduct,

recklessness, or negligent act, error, or omission of Consultant (or any person or organization for whom Consultant is legally liable) in the performance of the activities necessary to perform the services for District and complete the task provided for herein. In addition, Consultant shall indemnify, hold harmless, and release NMWD, its directors, officers, agents, and employees from and against any and all actions, claims, damages, disabilities or expenses, including attorney's fees and witness costs, that may be asserted by any person or entity including the Consultant, arising out of, pertaining to, or relating to, the negligent acts, errors or omissions, recklessness, or intentional or willful misconduct of the Consultant (or any consultant or subcontractor of Consultant) in connection with the activities necessary to perform the services and complete the task provided for herein, but excluding liabilities due to the sole negligence or willful misconduct of NMWD.

- b. With respect to all other than professional services under this agreement, Consultant shall indemnify, hold harmless, release and defend NMWD, its agents and employees from and against any and all actions, claims, damages, disabilities or expenses, including attorney's fees and witness costs that may be asserted by any person or entity, including the Consultant, arising out of or in connection with the activities necessary to perform those services and complete the tasks provided for herein, but excluding liabilities due to the sole negligence or willful misconduct of NMWD.

This indemnification is not limited in any way by any limitation on the amount or type of damages or compensation payable by or for the NMWD or its agents under workers' compensation acts, disability benefit acts or other employee benefit acts.

4. PROSECUTION OF WORK: The execution of this agreement shall constitute the Consultant's authority to proceed immediately with the performance of this contract. Performance of the services hereunder shall be completed by December 30, 2017, provided, however, that if the performance is delayed by earthquake, flood, high water or other Act of God or by strike, lockout or similar labor disturbance, the time for the Consultant's performance of this contract shall be extended by a number of days equal to the number of days the Consultant has been delayed.

5. METHOD AND PLACE OF GIVING NOTICE, SUBMITTING BILLS AND MAKING PAYMENTS: All notices, bills and payment shall be made in writing and may be given by personal delivery or by mail. Notices, bills and payments sent by mail should be addressed as follows:

North Marin Water District
P.O. Box 146
Novato, CA 94948
Attention: Drew McIntyre

Consultant:
ESA
1425 N. McDowell Blvd., Suite 200
Petaluma, CA 94954
Attention: James O'Toole

and when so addressed, shall be deemed given upon deposit in the United States Mail, postage prepaid. In all other instances, notices, bills and payments shall be deemed given at the time of actual delivery. Changes may be made in the names and addresses of the person to whom notices, bills and payments are to be given by giving notice pursuant to this paragraph.

6. MERGER: This writing is intended both as the final expression of the agreement between the parties hereto with respect to the included terms of the agreement, pursuant to California Code of Civil Procedure Section 1856 and as a complete and exclusive statement of the terms of the agreement. No modification of this agreement shall be effective unless and until such modification is evidenced by a writing signed by both parties.

7. SEVERABILITY: Each provision of this agreement is intended to be severable. If any term of any provision shall be determined by a court of competent jurisdiction to be illegal or invalid for any reason whatsoever, such provision shall be severed from this agreement and shall not affect the validity of the remainder of the agreement.

8. TERMINATION: At any time and without cause the NMWD shall have the right in its sole discretion, to terminate this agreement by giving written notice to the Consultant. In the event of such termination, NMWD shall pay the Consultant for services rendered to such date.

9. TRANSFER OF RIGHTS/OWNERSHIP OF DATA: The Consultant assigns to NMWD all rights throughout the work in perpetuity in the nature of copyright, trademark, patent, and right to ideas, in and to all versions of any plans and specifications, reports and document now or later prepared by the Consultant in connection with this contract.

The Consultant agrees to take such actions as are necessary to protect the rights assigned to NMWD in this agreement, and to refrain from taking any action which would impair those rights. The Consultant's responsibilities under this contract will include, but not be limited to, placing proper notice of copyright on all versions of any plans and specifications, reports and documents as NMWD may direct, and refraining from disclosing any versions of the reports and documents to any third party without first obtaining written permission of NMWD. The Consultant will not use, or permit another to use, any plans and specifications, reports and document in connection with this or any other project without first obtaining written permission of NMWD.

All materials resulting from the efforts of NMWD and/or the Consultant in connection with this project, including documents, reports, calculations, maps, photographs, computer programs, computer printouts, digital data, notes and any other pertinent data are the exclusive property of NMWD. Re-use of these materials by the Consultant in any manner other than in conjunction with activities authorized by NMWD is prohibited without written permission of NMWD.

Consultant shall deliver requested materials to NMWD in electronic format including but not limited to engineering calculations, plans (AutoCad, current edition) and specifications (MS Word, current edition).

10. COST DISCLOSURE: In accordance with Government Code Section 7550, the Consultant agrees to state in a separate portion of any report provided NMWD, the numbers and amounts of all contracts and subcontractors relating to the preparation of the report.

11. NONDISCRIMINATION: The Consultant shall comply with all applicable federal, state and local laws, rules and regulations in regard to nondiscrimination in employment because of race, color, ancestry, national origin, religion, sex, marital status, age, medical condition or physical handicap.

12. EXTRA (CHANGED) WORK: Extra work may be required. The Consultant shall not proceed nor be entitled to reimbursement for extra work unless it has been authorized, in writing, in advance, by NMWD. The Consultant shall inform the District as soon as it determines work beyond the scope of this agreement may be necessary and/or that the work under this agreement cannot be

completed for the amount specified in this agreement. Said review shall occur before consultant incurs 75% of the total fee approved for any phase of the work. Failure to notify the District shall constitute waiver of the Consultant's right to reimbursement.

13. CONFLICT OF INTEREST: The Consultant covenants that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of its services hereunder. The Consultant further covenants that in the performance of this contract no person having any such interest shall be employed.

14. INSURANCE REQUIREMENTS FOR CONSULTANTS

Consultant shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Consultant, his agents, representatives, employees or subcontractors.

Minimum Scope of Insurance

Coverage shall be at least as broad as:

1. Commercial General Liability coverage
2. Automobile Liability
3. Workers' Compensation insurance as required by the State of California.
4. Professional Liability insurance appropriate to the consultant's profession. Architects' and engineers' coverage is to be endorsed to include contractual liability.

Minimum Limits of Insurance

Consultant shall maintain limits no less than:

1. General Liability (including operations, products and completed operations.): **\$1,000,000** per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.
2. Automobile Liability: **\$1,000,000** per accident for bodily injury and property damage.
3. Workers' Compensation Insurance: as required by the State of California.
4. Professional Liability, **\$1,000,000** per occurrence.

Verification of Coverage

Consultant shall furnish the District with original certificates and amendatory endorsements effecting coverage required by this clause. All certificates and endorsements are to be received and approved by the District before work commences. The District reserves the right to require at any time complete and certified copies of all required insurance policies, including endorsements affecting the coverage required by these specifications.

Subcontractors

Consultant shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor to the District for review and approval. All coverage for subcontractors shall be subject to all of the requirements stated herein.

Self-Insured Retentions

Any self-insured retentions must be declared to and approved by the District. At the option of the District, either: the insurer shall reduce or eliminate such self-insured retentions as respects the District, its officers, officials, employees and volunteers; or the Consultant shall provide a financial guarantee satisfactory to the District (such as a surety bond) guaranteeing payment of losses and related investigations, claim administration, and defense expenses.

Other Insurance Provisions

The commercial general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

1. The District, its officers, officials, employees, and volunteers are to be covered as insureds with respect to liability arising out of automobiles owned, leased, hired or borrowed by or on behalf of the Consultant.
2. For any claims related to this project, the Consultant's insurance coverage shall be primary insurance as respects the District, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the District, its officers, officials, employees, or volunteers shall be excess of the Consultant's insurance and shall not contribute with it.
3. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be canceled by either party, except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to the District.

Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII.

15. DISPUTE RESOLUTION: Any dispute or claim in law or equity between District and Consultant arising out of this agreement, if not resolved by informal negotiation between the parties, shall be mediated by referring it to the nearest office of Judicial Arbitration and Mediation Services, Inc. (JAMS) for mediation. Mediation shall consist of an informal, non-binding conference or conferences between the parties and the judge-mediator jointly, then in separate caucuses wherein the judge will seek to guide the parties to a resolution of the case. If the parties cannot agree to mutually acceptable member from the JAMS panel of retired judges, a list and resumes of available mediators numbering one more than there are parties will be sent to the parties, each of whom will strike one name leaving the remaining as the mediator. If more than one name remains, JAMS arbitrations administrator will choose a mediator from the remaining names. The mediation process shall continue until the case is resolved or until such time as the mediator makes a finding that there is no possibility of resolution.

At the sole election of the District, any dispute or claim in law or equity between District and Consultant arising out of this agreement which is not settled through mediation shall be decided by neutral binding arbitration and not by court action, except as provided by California law for judicial review of arbitration proceedings. The arbitration shall be conducted in accordance with the rules of Judicial Arbitration Mediation Services, Inc. (JAMS). The parties to an arbitration may agree in writing to use different rules and/or arbitrators.

16. BILLING AND DOCUMENTATION: The Consultant shall invoice NMWD for work performed on a monthly basis and shall include a summary of work for which payment is requested. The invoice shall state the authorized contract limit, the amount of invoice and total amount billed to date. The summary shall include time and hourly rate of each individual, a narrative description of work accomplished, and an estimate of work completed to date.

17. REASONABLE ASSURANCES: Each party to this agreement undertakes the obligation that the other's expectation of receiving due performance will not be impaired. When reasonable grounds for insecurity arise, with respect to performance of either party, the other may, in writing, demand adequate assurance of due performance and until the requesting party receives such assurance may, if commercially reasonable, suspend any performance for which the agreed return has not been received. "Commercially reasonable" includes not only the conduct of the party with respect to performance under this agreement but also conduct with respect to other agreements with parties to this agreement or others. After receipt of a justified demand, failure to provide within a reasonable time, not to exceed 30 days, such assurance of due performance as is adequate under the circumstances of the particular case is a repudiation of this agreement. Acceptance of any improper delivery, service, or payment does not prejudice the aggrieved party's right to demand adequate assurance of future performance.

18. PREVAILING WAGE REQUIREMENTS: Prevailing Wage Rates apply to all Consultant personnel performing work under the Agreement for which wage determinations have been made by the Director of Industrial Relations pursuant to California Labor Code Sections 1770–1782,. Consultant shall comply with all applicable prevailing wage labor code requirements

**NORTH MARIN WATER DISTRICT
"NMWD"**

Dated: _____

Chris DeGabriele, General Manager

**ENVIRONMENTAL SCIENCE ASSOCIATES
"CONSULTANT"**

Dated: _____

James O'Toole, Vice President



Exhibit B

Environmental Science Associates & Subsidiaries

2016 Schedule of Fees

I. Personnel Category Rates

Charges will be made at the Category hourly rates set forth below for time spent on project management, consultation or meetings related to the project, field work, report preparation and review, travel time, etc. Time spent on projects in litigation, in depositions and providing expert testimony will be charged at the Category rate times 1.5.

Labor Category	Level I	Level II	Level III
Senior Director	250	265	285
Director	200	215	230
Managing Associate	165	180	195
Senior Associate	140	150	160
Associate	100	120	130
Project Technicians	80	95	115

- (a) The range of rates shown for each staff category reflects ESA staff qualifications, expertise and experience levels. These rate ranges allow our project managers to assemble the best project teams to meet the unique project requirements and client expectations for each opportunity.
- (b) From time to time, ESA retains outside professional and technical labor on a temporary basis to meet peak workload demands. Such contract labor may be charged at regular Employee Category rates.
- (c) ESA reserves the right to revise the Personnel Category Rates annually to reflect changes in its operating costs.

II. ESA Expenses

A. Travel Expenses

- 1. Transportation
 - a. Company vehicle – IRS mileage reimbursement rate
 - b. Common carrier or car rental – actual multiplied by 1.15
- 2. Lodging, meals and related travel expenses – direct expenses multiplied by 1.15

B. Communications Fee

In-house costs for phone, e-mail, fax, regular postage, walk-up copier, and records retention – project labor charges multiplied by 3%

C. Printing/Reproduction Rates

Item	Rate/page
8 1/2 x 11 b/w	\$0.05
11 x 17 b/w	\$0.10
8 1/2 x 11 color	\$1.00
11 x 17 color	\$2.00
Covers	\$0.50
Binding	\$1.00
HP Plotter	\$25.00
CD	\$10.00
Digital Photography	\$20.00 (up to 50 images)

D. Equipment Rates

Item	Rate/Day	Rate/Week	Rate/Month
Project Specific Equipment:			
Vehicles – Standard size	\$ 40 ^a	\$ 180	
Vehicles – 4x4 /Truck	85		
Vehicles – ATV	125		
Laptop Computers	50	200	\$ 500
LCD Projector	200	600	
Noise Meter	50		
Electrofischer	300	1,200	
Sample Pump	25		
Field Traps	40		
Digital Planimeter	40		
Cameras/Video/Cell Phone	20		200
Miscellaneous Small Equipment	5		
Computer Time (i.e. GIS)	120 ^b		
Stilling Well / Coring Pipe (3 inch aluminum)	3/ft		
Backpack Sprayer	25		
Beach Seine	50		
Otter Trawl	100		
Wildlife Acoustics Bat Detector	125	400	
Topographic Survey Equipment:			
Auto Level	40		
Total Station	200	600	
RTK-GPS	300	1,200	
RTK-GPS Smartnet Subscription	50	200	
Trimble GPS	75	350	900
Tablet GPS	100	400	1,000
Laser Level	60		
Garmin GPS or equivalent	25		250

Item	Rate/Day	Rate/Week	Rate/Month
Hydrologic Data Collection, Water Current, Level and Wave Measurement Equipment:			
ISCO 2150 Area Velocity Flow Logger	\$ 25	\$ 100	\$ 400
Logging Rain Gage	10	40	125
Marsh-McBirney Hand-Held Current Meter	50	200	
FloWav Surface Velocity Radar	50	200	
Logging Water Level - Pressure Transducer	10	40	125
Logging Barometric Pressure Logger	10	40	125
Well Probe	20	80	
Bottom-Mounted Tripod / Mooring	25	100	400
Handheld Suspended Sediment Sampler	20		250
Water Quality Equipment:			
Logging Turbidimeter/Water Level Recorder	\$ 25	\$ 100	\$ 400
In-Situ Troll 9500 logging water quality multiprobe		200	800
Logging Temperature Probe	3	10	40
Hach Hand-Held Turbidimeter Recording Conductivity Meter w/Datalogger	50	200	
Refractometer	20	80	
YSI Hand-Held Salinity Meter or pH meter	30	120	
Hand-Held Conductivity/Dissolved Oxygen Probe (YSI 85)	40	160	
Water Quality Sonde			800
YSI 650 with 6920 Multi Probe	180	500	1500
ISCO 6712 Portable Sampler w/ISCO 2105 Module	40	250	900
Sedimentation / Geotechnical Equipment:			
Peat Corer	\$ 75	\$ 300	
60lb Helly-Smith Bedload Sampler with Bridge Crane	175	700	
Suspended Sediment Sampler with Bridge Crane	75	300	
Vibra-core	100	400	
Shear Strength Vane	50	200	
Auger (brass core @ \$ 5/each)	20	80	
Boats:			
14 foot Aluminum Boats with 15 HP Outboard Motor	\$ 100	\$ 400	
Single or Double Person Canoe	30	120	
17' Boston Whaler w/ 90 HP Outboard	500	2,000	
^a Actual project charges will be either the IRS mileage reimbursement rate or the daily rate, whichever is higher.			
^b GIS computer time will be charged at \$15.00 per hour.			

III. Subcontracts

Subcontract services will be invoiced at cost multiplied by 1.15.

IV. Other

There shall be added to all charges set forth above amounts equal to any applicable sales or use taxes legally levied in lieu thereof, now or hereinafter imposed under the authority of a federal, state, or local taxing jurisdiction.

8

MEMORANDUM

To: Board of Directors

Date: September 16, 2016

From: Drew McIntyre, Assistant General Manager/Chief Engineer

Subject: KTA-TATOR, Inc. – Consulting Services Agreement

R:\NON JOB No ISSUES\Consultants\KTA-TATOR\2015\Agmts_BOD Memos\KTA TATOR GSA 9_20_16 BOD memo.doc

RECOMMENDED ACTION: Authorize the General Manager to execute a new General Consulting Services Agreement between NMWD and KTA-TATOR, Inc.

FINANCIAL IMPACT: \$20,000

Attached is a General Consulting Services Agreement for KTA-TATOR, Inc. (Concord, CA office) to provide on-going professional consultation for coating/corrosion engineering and inspection. KTA-TATOR, Inc. has a proven track record with the District of providing high quality and responsive services at reasonable cost. To best meet project demands, a General Consulting Services Agreement is desired with individual task orders on a job-by-job basis.

The first task order amount of \$13,300 to be funded under this agreement will be for coating evaluation and structural assessment services associated with the FY16 and FY17 CIP San Mateo Tank Rehabilitation project.

A summation of contract billings for KTA-TATOR, Inc. services for previous work is provided as follows:

TABLE I		
Contract Issuance Year	Billing Year	Total Billings
FY2000/01	2000	\$1,350
FY13-14	2013	\$13,124

RECOMMENDATION

Authorize the General Manager to execute a new General Consulting Services Agreement between NMWD and KTA-TATOR, Inc. with a not-to-exceed limit of \$20,000.

Approved by GM CDDate 9/16/2016

AGREEMENT FOR CONSULTING SERVICES

The following is an agreement between **North Marin Water District**, hereinafter "**NMWD**", and **KTA-TATOR**, hereinafter, "**Consultant**".

WHEREAS, Consultant is a duly qualified consulting firm, experienced in corrosion control engineering.

WHEREAS, in the judgment of the Board of Directors of the NMWD, it is necessary and desirable to employ the services of the Consultant to provide miscellaneous engineering services.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the parties hereto agree as follows:

PART A -- SPECIFIC PROVISIONS:

1. DESCRIPTION OF SERVICES AND PAYMENT: Except as modified in this agreement, the services to be provided and the payment schedule are:

- a. The scope of work and fee amount covered by this agreement shall be that specified on a task by task basis.
- b. The fee for the work shall be on a time and expense (T & E) basis utilizing the fee schedule included in Attachment A of this agreement and shall not exceed \$20,000 without prior written authorization by NMWD.

PART B -- GENERAL PROVISIONS

1. ASSIGNMENT/DELEGATION: Except as above, neither party hereto shall assign, sublet or transfer any interest in or duty under this agreement without written consent of the other, and no assignment shall be of any force or effect whatsoever unless and until the other party shall have so consented.

2. STATUS OF CONSULTANT: The parties intend that the Consultant, in performing the services hereinafter specified, shall act as an independent contractor and shall have the control of the work and the manner in which it is performed. The Consultant is not to be considered an agent or employee of NMWD, and is not entitled to participate in any pension plan, insurance, bonus or similar benefits NMWD provides its employees.

3. INDEMNIFICATION: NMWD is relying on the professional ability and training of the Consultant as a material inducement to enter into this agreement. The Consultant hereby warrants that all its work will be performed in accordance with generally accepted professional practices and standards, as well as the requirements of applicable federal, state and local laws, it being understood that neither acceptance of the Consultant's work by NMWD nor Consultant's failure to perform shall operate as a waiver or release.

- a. With respect to professional services under this agreement, Consultant shall assume the defense of and defend NMWD, its directors, officers, agents, and employees in any action at law or in equity in which liability is claimed or alleged to arise out of, pertain to, or relate to, either directly or indirectly, the intentional or willful misconduct, recklessness, or negligent act, error, or omission of Consultant (or any person or

organization for whom Consultant is legally liable) in the performance of the activities necessary to perform the services for District and complete the task provided for herein. In addition, Consultant shall indemnify, hold harmless, and release NMWD, its directors, officers, agents, and employees from and against any and all actions, claims, damages, disabilities or expenses, including attorney's fees and witness costs, that may be asserted by any person or entity including the Consultant, arising out of, pertaining to, or relating to, the negligent acts, errors or omissions, recklessness, or intentional or willful misconduct of the Consultant (or any consultant or subcontractor of Consultant) in connection with the activities necessary to perform the services and complete the task provided for herein, but excluding liabilities due to the sole negligence or willful misconduct of NMWD.

- b. With respect to all other than professional services under this agreement, Consultant shall indemnify, hold harmless, release and defend NMWD, its agents and employees from and against any and all actions, claims, damages, disabilities or expenses, including attorney's fees and witness costs that may be asserted by any person or entity, including the Consultant, arising out of or in connection with the activities necessary to perform those services and complete the tasks provided for herein, but excluding liabilities due to the sole negligence or willful misconduct of NMWD.

This indemnification is not limited in any way by any limitation on the amount or type of damages or compensation payable by or for the NMWD or its agents under workers' compensation acts, disability benefit acts or other employee benefit acts.

4. PROSECUTION OF WORK: The execution of this agreement shall constitute the Consultant's authority to proceed immediately with the performance of this contract. Performance of the services hereunder shall be completed by December 31, 2017, provided, however, that if the performance is delayed by earthquake, flood, high water or other Act of God or by strike, lockout or similar labor disturbance, the time for the Consultant's performance of this contract shall be extended by a number of days equal to the number of days the Consultant has been delayed.

5. METHOD AND PLACE OF GIVING NOTICE, SUBMITTING BILLS AND MAKING PAYMENTS: All notices, bills and payment shall be made in writing and may be given by personal delivery or by mail. Notices, bills and payments sent by mail should be addressed as follows:

North Marin Water District
P.O. Box 146
Novato, CA 94948
Attention: Drew McIntyre

Consultant:
KTA-TATOR
3523 Half Moon Lane
Concord, CA 94518
Attention: Ray Tombaugh

and when so addressed, shall be deemed given upon deposit in the United States Mail, postage prepaid. In all other instances, notices, bills and payments shall be deemed given at the time of actual delivery. Changes may be made in the names and addresses of the person to whom notices, bills and payments are to be given by giving notice pursuant to this paragraph.

6. MERGER: This writing is intended both as the final expression of the agreement between the parties hereto with respect to the included terms of the agreement, pursuant to California Code of Civil Procedure Section 1856 and as a complete and exclusive statement of the terms of the agreement. No modification of this agreement shall be effective unless and until such modification is evidenced by a writing signed by both parties.

7. SEVERABILITY: Each provision of this agreement is intended to be severable. If any term of any provision shall be determined by a court of competent jurisdiction to be illegal or invalid for any reason whatsoever, such provision shall be severed from this agreement and shall not affect the validity of the remainder of the agreement.

8. TERMINATION: At any time and without cause the NMWD shall have the right in its sole discretion, to terminate this agreement by giving written notice to the Consultant. In the event of such termination, NMWD shall pay the Consultant for services rendered to such date.

9. TRANSFER OF RIGHTS/OWNERSHIP OF DATA: The Consultant assigns to NMWD all rights throughout the work in perpetuity in the nature of copyright, trademark, patent, and right to ideas, in and to all versions of any plans and specifications, reports and document now or later prepared by the Consultant in connection with this contract.

The Consultant agrees to take such actions as are necessary to protect the rights assigned to NMWD in this agreement, and to refrain from taking any action which would impair those rights. The Consultant's responsibilities under this contract will include, but not be limited to, placing proper notice of copyright on all versions of any plans and specifications, reports and documents as NMWD may direct, and refraining from disclosing any versions of the reports and documents to any third party without first obtaining written permission of NMWD. The Consultant will not use, or permit another to use, any plans and specifications, reports and document in connection with this or any other project without first obtaining written permission of NMWD.

All materials resulting from the efforts of NMWD and/or the Consultant in connection with this project, including documents, reports, calculations, maps, photographs, computer programs, computer printouts, digital data, notes and any other pertinent data are the exclusive property of NMWD. Re-use of these materials by the Consultant in any manner other than in conjunction with activities authorized by NMWD is prohibited without written permission of NMWD.

Consultant shall deliver requested materials to NMWD in electronic format including but not limited to engineering calculations, plans (AutoCad, current edition) and specifications (MS Word, current edition).

10. COST DISCLOSURE: In accordance with Government Code Section 7550, the Consultant agrees to state in a separate portion of any report provided NMWD, the numbers and amounts of all contracts and subcontractors relating to the preparation of the report.

11. NONDISCRIMINATION: The Consultant shall comply with all applicable federal, state and local laws, rules and regulations in regard to nondiscrimination in employment because of race, color, ancestry, national origin, religion, sex, marital status, age, medical condition or physical handicap.

12. EXTRA (CHANGED) WORK: Extra work may be required. The Consultant shall not proceed nor be entitled to reimbursement for extra work unless it has been authorized, in writing, in advance, by NMWD. The Consultant shall inform the District as soon as it determines work beyond

the scope of this agreement may be necessary and/or that the work under this agreement cannot be completed for the amount specified in this agreement. Said review shall occur before consultant incurs 75% of the total fee approved for any phase of the work. Failure to notify the District shall constitute waiver of the Consultant's right to reimbursement.

13. CONFLICT OF INTEREST: The Consultant covenants that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of its services hereunder. The Consultant further covenants that in the performance of this contract no person having any such interest shall be employed.

14. INSURANCE REQUIREMENTS FOR CONSULTANTS

Consultant shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Consultant, his agents, representatives, employees or subcontractors.

Minimum Scope of Insurance

Coverage shall be at least as broad as:

1. Commercial General Liability coverage
2. Automobile Liability
3. Workers' Compensation insurance as required by the State of California.
4. Professional Liability insurance appropriate to the consultant's profession. Architects' and engineers' coverage is to be endorsed to include contractual liability.

Minimum Limits of Insurance

Consultant shall maintain limits no less than:

1. General Liability (including operations, products and completed operations.): **\$1,000,000** per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.
2. Automobile Liability: **\$1,000,000** per accident for bodily injury and property damage.
3. Workers' Compensation Insurance: as required by the State of California.
4. Professional Liability, **\$1,000,000** per occurrence.

Verification of Coverage

Consultant shall furnish the District with original certificates and amendatory endorsements effecting coverage required by this clause. All certificates and endorsements are to be received and approved by the District before work commences. The District reserves the right to require at any time complete and certified copies of all required insurance policies, including endorsements affecting the coverage required by these specifications.

Subcontractors

Consultant shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor to the District for review and approval. All coverage for subcontractors shall be subject to all of the requirements stated herein.

Self-Insured Retentions

Any self-insured retentions must be declared to and approved by the District. At the option of the District, either: the insurer shall reduce or eliminate such self-insured retentions as respects the District, its officers, officials, employees and volunteers; or the Consultant shall provide a financial guarantee satisfactory to the District (such as a surety bond) guaranteeing payment of losses and related investigations, claim administration, and defense expenses.

Other Insurance Provisions

The commercial general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

1. The District, its officers, officials, employees, and volunteers are to be covered as insureds with respect to liability arising out of automobiles owned, leased, hired or borrowed by or on behalf of the Consultant.
2. For any claims related to this project, the Consultant's insurance coverage shall be primary insurance as respects the District, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the District, its officers, officials, employees, or volunteers shall be excess of the Consultant's insurance and shall not contribute with it.
3. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be canceled by either party, except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to the District.

Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII.

15. DISPUTE RESOLUTION: Any dispute or claim in law or equity between District and Consultant arising out of this agreement, if not resolved by informal negotiation between the parties, shall be mediated by referring it to the nearest office of Judicial Arbitration and Mediation Services, Inc. (JAMS) for mediation. Mediation shall consist of an informal, non-binding conference or conferences between the parties and the judge-mediator jointly, then in separate caucuses wherein the judge will seek to guide the parties to a resolution of the case. If the parties cannot agree to mutually acceptable member from the JAMS panel of retired judges, a list and resumes of available mediators numbering one more than there are parties will be sent to the parties, each of whom will strike one name leaving the remaining as the mediator. If more than one name remains, JAMS arbitrations administrator will choose a mediator from the remaining names. The mediation process shall continue until the case is resolved or until such time as the mediator makes a finding that there is no possibility of resolution.

At the sole election of the District, any dispute or claim in law or equity between District and Consultant arising out of this agreement which is not settled through mediation shall be decided by neutral binding arbitration and not by court action, except as provided by California law for judicial review of arbitration proceedings. The arbitration shall be conducted in accordance with the rules of Judicial Arbitration Mediation Services, Inc. (JAMS). The parties to an arbitration may agree in writing to use different rules and/or arbitrators.

16. BILLING AND DOCUMENTATION: The Consultant shall invoice NMWD for work performed on a monthly basis and shall include a summary of work for which payment is requested. The invoice shall state the authorized contract limit, the amount of invoice and total amount billed to date. The summary shall include time and hourly rate of each individual, a narrative description of work accomplished, and an estimate of work completed to date.

17. REASONABLE ASSURANCES: Each party to this agreement undertakes the obligation that the other's expectation of receiving due performance will not be impaired. When reasonable grounds for insecurity arise, with respect to performance of either party, the other may, in writing, demand adequate assurance of due performance and until the requesting party receives such assurance may, if commercially reasonable, suspend any performance for which the agreed return has not been received. "Commercially reasonable" includes not only the conduct of the party with respect to performance under this agreement but also conduct with respect to other agreements with parties to this agreement or others. After receipt of a justified demand, failure to provide within a reasonable time, not to exceed 30 days, such assurance of due performance as is adequate under the circumstances of the particular case is a repudiation of this agreement. Acceptance of any improper delivery, service, or payment does not prejudice the aggrieved party's right to demand adequate assurance of future performance.

18. PREVAILING WAGE REQUIREMENTS: Prevailing Wage Rates apply to all Consultant personnel performing work under the Agreement for which wage determinations have been made by the Director of Industrial Relations pursuant to California Labor Code Sections 1770–1782,. Consultant shall comply with all applicable prevailing wage labor code requirements

**NORTH MARIN WATER DISTRICT
"NMWD"**

Dated: _____

Chris DeGabriele, General Manager

**KTA-TATOR
"CONSULTANT"**

Dated: _____

Raymond Tombaugh

KTA-TATOR, INC.
2016 FEE SCHEDULE¹

	<u>Straight Time</u>		<u>Straight Time²</u>
<u>Executive Consultants</u>	\$275.00	<u>Technician II</u>	\$100.00
Chairman of the Board		Sr. Coatings Technician	
Chief Executive Officer		Sr. Environmental Technician	
President		Sr. Engineering/Survey Technician	
		Laboratory Technician	
 <u>Chief Professionals</u>	 \$245.00	 <u>Technician I</u>	 \$80.00
Vice President		Drafter/Designer	
Senior Coatings Consultant		Environmental Technician	
Business Unit Manager		Engineering/Survey Technician	
Laboratory/Consulting Services Manager			
 <u>Senior Professionals</u>	 \$175.00	 <u>Support</u>	 \$45.00
Senior Industrial Hygienist		Administrative Professional	
Senior EH&S Professional		Clerk	
Project Coatings Consultant			
Senior Engineer			
Senior Technical Specialist			
Lab Supervisor/Senior Chemist			
 <u>Project Professionals</u>	 \$150.00		
Project Engineer			
Project Management Specialist			
Project Industrial Hygienist			
Technical Specialist			
Laboratory Chemist			
 <u>Litigation³</u>			
Expert Witness Testimony (Courtroom or Deposition)		\$300.00/hour	
Litigation Preparation (Non-Testimony)		\$245.00/hour	

¹ Rates are invoiced portal-to-portal for periodic on-site work. Long-term environmental and coatings inspection assignments are quoted on a per-project basis, based upon location, duration, and qualifications of personnel required. The costs for any client-requested travel by laboratory personnel will be invoiced in addition to the laboratory fees in the Laboratory Fee Schedule.

² Overtime is invoiced for these job categories (Technician II, Technician I, and Support) as follows:

Time and One-Half – charged for work in excess of 40 hours per week Monday through Saturday. Time and one-half is charged at 1.4 times the straight time rate.

Double Time – charged if stipulated in proposal and/or determined by jurisdiction/state law. Double time is charged at 1.6 times the straight time rate.

³ As pending litigation may restrict availability for other consulting projects, a retainer of \$400.00 per month or any part of a month will be invoiced for all litigation support services.


Rates are in accordance with the KTA-Tator, Inc. Standard Terms and Conditions which are hereby incorporated by reference. See the corresponding Laboratory Fee Schedule for laboratory analysis and equipment costs.

9

MEMORANDUM

To: Board of Directors

September 14, 2016

From: Katie Young, District Secretary 

Subject: Biennial Review of NMWD's Conflict of Interest Code (Multi-County)

t:\board\conflict of interest\policy\old code\memo 0916.doc

The Fair Political Practices Commission (FPPC) requires that the District's conflict of interest code be reviewed every two years (Attachment 1). In reviewing the District's code District legal counsel recommends including the Assistant General Manager position in the code with reportable items consistent with the GM and attorney. The following changes are recommended to North Marin Water District Designated Positions (Attachment 2):

NORTH MARIN WATER DISTRICT DESIGNATED POSITIONS

Designated Positions: General Manager, Assistant General Manager, Attorney, Chief Engineer, and Consultants

GENERAL MANAGER, ASSISTANT GENERAL MANAGER, ATTORNEY

Reportable Items:

1. Real property
2. Banks, savings and loan associations
3. Insurance, surety and bonding companies
4. Construction contractors who have or may contract with the District for installation of facilities that will become the property of the District
5. Manufacturers and vendors of pipe, valves, meters, pumps, tanks and other equipment used by the District
6. Producers and vendors of chlorine, lime, alum, copper, sulfate, and other chemicals used by the District
7. Vendors of motor vehicles and parts therefore of the type used by the District
8. Vendor of construction and building materials
9. Vendors of gasoline and other petroleum products
10. Vendors of office equipment and supplies


CONSULTANTS

Reportable Items:

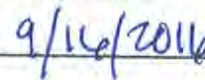
Same as General Manager, Assistant General Manager, Attorney.

RECOMMENDATION:

Approve submittal to the FPPC of the District's proposed non-substantive changes to the conflict of interest code

Approved by GM 

Date



CONFLICT OF INTEREST CODE FOR THE NORTH MARIN WATER DISTRICT

The Political Reform Act (Government Code Sections 81000, et seq.) requires state and local government agencies to adopt and promulgate conflict of interest codes. The Fair Political Practices Commission has adopted a regulation (2 Cal. Code of Regulations Section 18730) which contains the terms of a standard conflict of interest code, which can be incorporated by reference in an agency's code. After public notice and hearing it may be amended by the Fair Political Practices Commission to conform to amendments in the Political Reform Act. Therefore, the terms of 2 California Code of Regulations Section 18730 and any amendments to it duly adopted by the Fair Political Practices Commission are hereby incorporated by reference. This regulation and the attached Appendix designating officials and employees and establishing disclosure categories, shall constitute the conflict of interest code of the North Marin Water District.

Designated employees shall file their statements with the Secretary of the District who will make the statements available for public inspection and reproduction. (Gov. Code Section 81008).

**CONFLICT OF INTEREST CODE FOR THE
NORTH MARIN WATER DISTRICT
APPENDIX**

General Provisions

Persons holding designated positions must report:

1. Investments and business positions in business entities and income from sources which manufacture, sell or provide, supplies, materials, books, machinery, services or equipment of the type utilized by the District.
2. Investments and business positions in any business entity or sources of income listed under "Reportable Items" of this Appendix are disclosable if:
 - a. The business entity in which the investment or business position is held is of the type which contracts with the District; or
 - b. The business entity in which the investment or business position is held is of the type which contracts to furnish supplies or services as subcontractors in any contract with the District; or
 - c. The sources of income are of the type which have contracted with the District within the previous calendar year; or
 - d. The sources of income are of the type which have contracted within the previous calendar year to furnish supplies or services as subcontractors in any contract with the District.
3. Investments and business positions in any business entity or sources of income which are (1) private water companies, or (2) entities or persons engaged in farming, real estate development, or owners of real estate; and interests in real property are disclosable if held, regardless of any contractual relationship with the District at any time.

NORTH MARIN WATER DISTRICT DESIGNATED POSITIONS

Designated Positions: General Manager, Assistant General Manager, Attorney, Chief Engineer, and Consultants

GENERAL MANAGER, ASSISTANT GENERAL MANAGER, ATTORNEY

Reportable Items:

1. Real property
2. Banks, savings and loan associations
3. Insurance, surety and bonding companies
4. Construction contractors who have or may contract with the District for installation of facilities that will become the property of the District
5. Manufacturers and vendors of pipe, valves, meters, pumps, tanks and other equipment used by the District
6. Producers and vendors of chlorine, lime, alum, copper, sulfate, and other chemicals used by the District
7. Vendors of motor vehicles and parts therefore of the type used by the District
8. Vendor of construction and building materials
9. Vendors of gasoline and other petroleum products
10. Vendors of office equipment and supplies

CHIEF ENGINEER

Reportable Items:

1. Real property
2. Insurance, surety and bonding companies
3. Construction contractors who have or may contract with the District for installation of facilities that will become the property of the District
4. Manufacturers and vendors of pipe, valves, meters, pumps, tanks and other equipment used by the District
5. Producers and vendors of chlorine, lime, alum, copper, sulfate, and other chemicals used by the District
6. Vendors of motor vehicles and parts therefore of the type used by the District
7. Vendors of construction and building materials

CONSULTANTS

Reportable Items:

Same as General Manager, Assistant General Manager, Attorney.

Note: The General Manager may determine in writing that a particular consultant is engaged to perform a range of duties that is limited in scope and thus is not required to fully comply with the disclosure requirements. Such written determination shall include a description of the consultant's duties and, based upon that description, a statement of the extent of disclosure requirements. The General Manager's determination is a public record and shall be retained for public inspection in the same manner and location as this Conflict of Interest code.

OFFICIALS WHO MANAGE PUBLIC INVESTMENTS:

It has been determined that the position listed below manages public investments and will file a statement of economic interests pursuant to Government Code Section 87200.

Directors

Auditor-controller

10

MEMORANDUM

To: Board of Directors
 From: David L. Bentley, Auditor-Controller
 Subj: Salary Schedule Revision

September 16, 2016

t:\acl\word\personnel\moulboard approve effective 100116.docx

RECOMMENDED ACTION: Approve

FINANCIAL IMPACT: 4.4% Salary Increase
2.6% (\$188,000) Labor Cost Increase

The San Francisco Bay Area All Urban Consumers Price Index (CPI-U) increased 3.06% over the twelve months ending August 31, 2016. In accordance with the Memorandum of Understanding with the North Marin Water District Employee Association (MOU), effective each October 1 through 2017, as approved by the Board on December 18, 2012, employees will receive a cost of living adjustment equal to the percentage change in the CPI-U, less 0.3%. In addition, effective each October 1 through 2016, employees will receive a 1.6% salary increase as an offset to the additional 1.6% employees will contribute toward the cost of CalPERS retirement benefits each October 1. Accordingly, the total salary increase effective October 1, 2016, calculates to 4.4%.¹

Title 2 of the California Code of Regulations, section 570.5, requires that the pay schedule of every CalPERS agency be approved and adopted by the agency's governing body pursuant to public meeting laws. The District's Salary Schedule, revised per the MOU, is attached for your review and approval.

Salaries for unrepresented employees, which include the Auditor-Controller, Assistant General Manager, District Secretary, and Accounting/HR Supervisor, but excluding the General Manager, are also proposed to be increased consistent with the terms of the Employee Association MOU by the same 4.4% rate, consistent with the action of the Board on December 18, 2012, when the MOU was originally approved, and said increases are incorporated in the attached salary schedule.

The 1.6% CalPERS retirement contribution shifted from the District to employees serves to offset the 4.4% salary increase, thereby rendering a total labor cost increase of 2.6%.² A labor cost increase projected at 2.6% was incorporated into the adopted budget, so no budget augmentation is required.

RECOMMENDATION:

Approve the updated District Salary Schedule to be effective October 1, 2016.

¹ SF Bay Area All Urban Consumers Index at 8/31/16 = 267.864; at 8/31/15 = 259.917. $267.864 / 259.917 = 3.06\%$. $(1.0306 - 0.003) \times 1.016 = 1.044 - 1 = 4.4\%$.

² \$195,700 salary increase offset by a net \$7,300 decrease in benefit cost divided by \$7.13M labor cost = 2.6%.

NORTH MARIN WATER DISTRICT

h:\excel\personnel\salary schedule\salary sched 17.xlsx\sal sched

Employee Monthly Salary Ranges and Job Classifications

9/16/16

Effective October 1, 2017

JOB CLASSIFICATION	Beg	6 Mo	18 Mo	24 Mo	Merit
<u>ADMINISTRATION DEPARTMENT</u>					
Receptionist/Cashier	4,333	4,550	4,778	5,017	5,268
Account/Credit Clerk II	4,784	5,023	5,274	5,538	5,815
Accounting Clerk II	4,784	5,023	5,274	5,538	5,815
Field Service Representative	4,819	5,060	5,313	5,579	5,858
Storekeeper/Safety Coordinator	5,333	5,600	5,880	6,174	6,483
Consumer Services Supervisor	6,760	7,098	7,453	7,826	8,217
Senior Accountant	7,059	7,412	7,783	8,172	8,581
District Secretary	7,139	7,496	7,871	8,265	8,678
Accounting/HR Supervisor	8,763	9,201	9,661	10,144	10,651
Auditor-Controller	11,690	12,275	12,889	13,533	14,210
<u>CONSTRUCTION / MAINTENANCE DEPARTMENT</u>					
Laborer	4,050	4,252	4,465	4,688	4,922
Pipe Worker Assistant	4,604	4,834	5,076	5,330	5,597
Pipe Worker	5,333	5,600	5,880	6,174	6,483
Heavy Equipment Operator	5,429	5,700	5,985	6,284	6,598
Distribution Maintenance Foreman	6,348	6,665	6,998	7,348	7,715
Pipeline Foreman	6,348	6,665	6,998	7,348	7,715
Construction/Maintenance Superintendent	8,942	9,389	9,858	10,351	10,869
<u>ENGINEERING DEPARTMENT</u>					
Engineering Secretary	4,981	5,230	5,491	5,766	6,054
Engineering Services Rep	5,450	5,723	6,009	6,309	6,624
Engineering Technician III	5,796	6,086	6,390	6,710	7,046
Engineering Technician IV	6,486	6,810	7,151	7,509	7,884
Water Conservation Coordinator	8,192	8,602	9,032	9,484	9,958
Associate Civil Engineer	8,703	9,138	9,595	10,075	10,579
Chief Engineer	10,788	11,327	11,893	12,488	13,112
Assistant General Manager/Chief Engineer	12,336	12,953	13,601	14,281	14,995

NORTH MARIN WATER DISTRICT

h:\excel\personnel\salary schedule\salary sched 17.xlsx\sal sched

Employee Monthly Salary Ranges and Job Classifications

9/16/16



Effective October 1, 2017

JOB CLASSIFICATION	Beg	6 Mo	18 Mo	24 Mo	Merit
<u>OPERATIONS / MAINTENANCE DEPARTMENT</u>					
Program Assistant I	4,371	4,590	4,820	5,061	5,314
Building & Grounds Maint Tech I	4,690	4,924	5,170	5,429	5,700
Cross Connection Control Tech I	4,690	4,924	5,170	5,429	5,700
Assist Water Distrib & TP Operator	4,889	5,133	5,390	5,660	5,943
Apprentice Electrical/Mechanical Tech	4,992	5,242	5,504	5,779	6,068
Program Assistant II	5,313	5,579	5,858	6,151	6,459
Auto/Equipment Mechanic	5,333	5,600	5,880	6,174	6,483
Chemist I	5,551	5,829	6,120	6,426	6,747
Cross Connection Control Tech II	5,701	5,986	6,285	6,599	6,929
Electrical/Mechanical Technician	5,859	6,152	6,460	6,783	7,122
Treatment Plant Operator	6,085	6,389	6,708	7,043	7,395
Water Distrib & Treatment Plant Operator	6,085	6,389	6,708	7,043	7,395
Senior Electrical/Mechanical Tech	6,348	6,665	6,998	7,348	7,715
Senior Treatment Plant Operator	6,541	6,868	7,211	7,572	7,951
Sr. Water Distrib & TP Operator	6,541	6,868	7,211	7,572	7,951
Chemist II	6,772	7,111	7,467	7,840	8,232
Senior Chemist	7,449	7,821	8,212	8,623	9,054
Maintenance Supervisor	7,551	7,929	8,325	8,741	9,178
Distrib & Treatment Plant Supervisor	8,192	8,602	9,032	9,484	9,958
Water Quality Supervisor	8,893	9,338	9,805	10,295	10,810
Operations/Maintenance Superintendent	9,709	10,194	10,704	11,239	11,801

11

MEMORANDUM

To: Board of Directors September 16, 2016

From: Drew McIntyre, Assistant General Manager/Chief Engineer
Carmela Chandrasekera, Associate Engineer  

Re: Approve Bid Advertisement - Recycled Water Expansion Central Service Area – Norman Tank Rehabilitation Project

r:\folders by job no\6000 jobs\6058\bod memos\6058 rw west norman tank bod memo re approval for bid advertising.docx

RECOMMENDED ACTION: Board Authorize Bid Advertisement of the Recycled Water Expansion Central Service Area – Norman Tank Rehabilitation Project

FINANCIAL IMPACT: Estimated at \$760,000 (included in FY16 and FY17 CIP Budget)

Background

The Recycled Water Expansion Central Area project consists of installation of three pipeline segments (East and West of Highway 101 and pipeline under Highway 101), rehabilitation of the 0.5 MG Norman Tank for recycled water (RW) storage and on-site RW retrofits to enable service to various public and private sites. The project has now been divided into five separate bid packages. The listing below states the project and the status of each project.

1. West Project - Pipeline installation and public on-site RW retrofit work west of Highway 101 – Awarded to Ghilotti Construction Inc. – Approval of Award at Sep. 6, 2016 Board of Directors meeting.
2. East Project – Pipeline installation and public on-site RW retrofit work east of Highway 101 – Recommend Award to Mountain Cascade Inc. at Sep. 20, 2016 Board of Directors meeting.
3. Norman Tank Rehabilitation – Interior/Exterior Recoat and seismic upgrade of 0.5 MG surplus tank to be re-purposed for Recycled Water storage (last used for potable water in 2009) and upgrade of Plum Tank Controls – Recommend Approval for Bid Advertisement on Sep. 20, 2016 BOD meeting.
4. Private On-site Retrofits – both on the East and West side of Highway 101 – In design by Russ Mitchell Associates.
5. Pipeline under Highway 101 connecting the East and West Projects – in design by Bennett Trenchless Engineers.

The Recycled Water Expansion Central Service Area – Norman Rank Rehabilitation Project is the third of the Central Service Area projects scheduled to be constructed and is ready to move forward to the bid phase. A general site plan is provided in Attachment 1. The District will advertise the project in the Marin IJ and post the project on www.ebidboard.com when authorized.

The following project schedule identifies key dates including the proposed bid advertising date.

SCHEDULE

Advertise Project	September 23 , 2016
Plans & Specs available	September 23, 2016
Pre-Bid Meeting	October 18, 2016
Bid Opening	November 15, 2016
State SRF Financing Agreement	June 28, 2016
Federal Grant Award Notice	August 9, 2016
Board Authorization of Award (tentative)	December 6, 2016
Notice of Award (tentative)	December 9, 2016
Construction Complete (180 days)	July 31, 2017

Project Description and Costs

The project consists of surface preparation and complete recoating of interior and exterior surfaces and associated rehabilitation work on the 500,000 gallon capacity Norman Tank and associated rehabilitation work which includes: installation of a spiral stairway and security enclosure, inside ladder and platform, shell manway, roof hatch, sample tap, inlet/outlet pipe modifications, screen replacement, cathodic protection system, tank foundation and rock anchor installation. The project also includes piping modifications at the existing recycled water storage tank for the North service area (Plum Street Tank). Plum Street Tank and Norman Tank will both serve the same recycled water pressure zone. Therefore installation of remotely controllable valves for proper functioning of the North and Central Recycled Water systems is necessary.

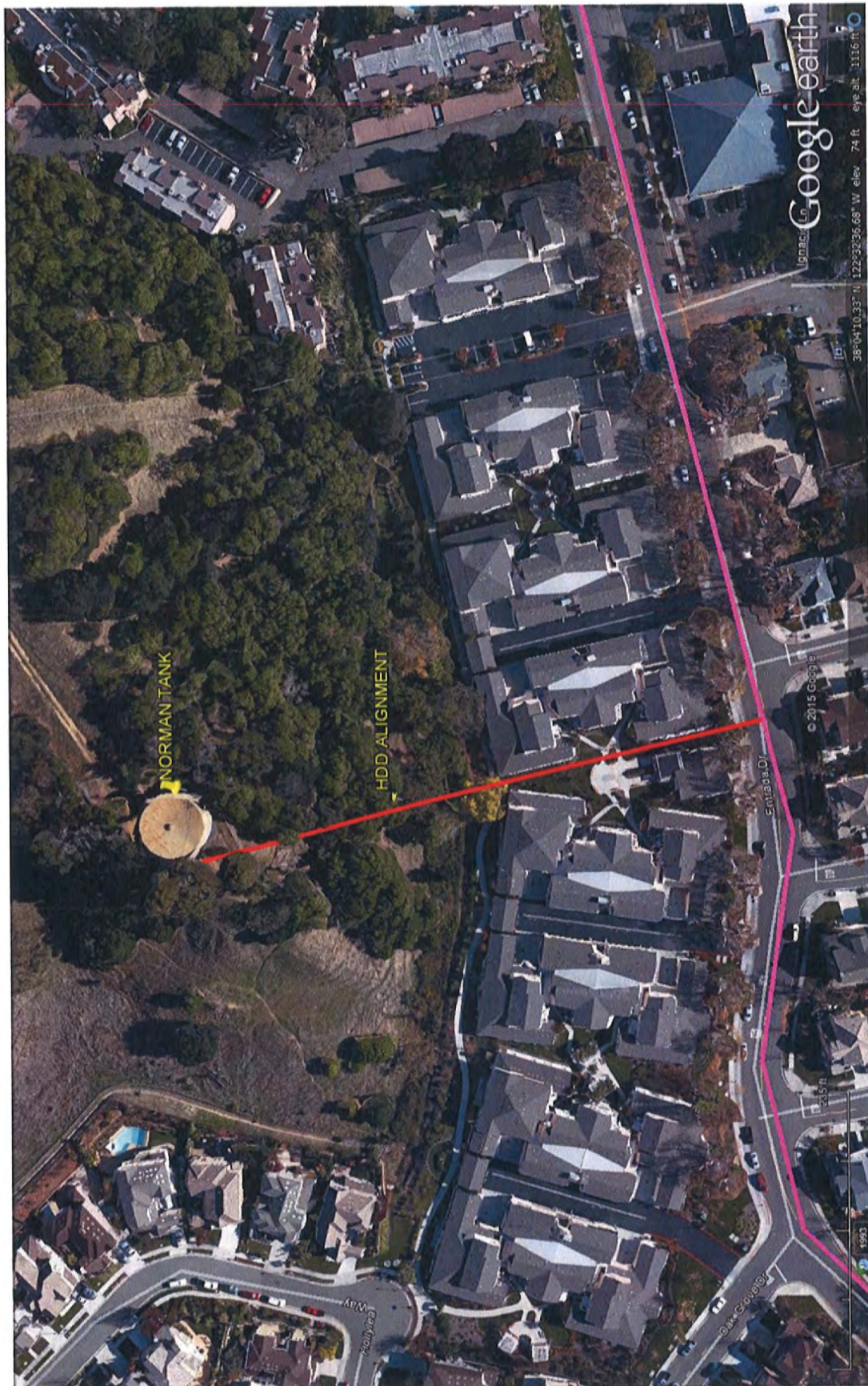
The current Engineer's Estimate is \$760,000 and includes a 10% contingency. An updated Project Cost Summary will be prepared when bids are received.

Project Financing

The project receives Water SMART grant funds via Bureau of Reclamation (BOR) awards and grant/loan funds from the State SRF program as summarized with the Board at the July 19, 2016 meeting when the Construction Management contract was approved. An updated summary of grants/loans will be provided to the Board at a subsequent meeting after receipt of the final allocation of BOR grant funds between affected NBWRA Phase I participating agencies.

RECOMMENDATION

Board authorize bid advertisement of the Recycled Water Expansion Central Service Area – Norman Tank Rehabilitation Project.



12

MEMORANDUM

To: Board of Directors

From: Drew McIntyre, Assistant General Manager/Chief Engineer
David Jackson, Associate Engineer

Subject: Recycled Water Expansion Central Service Area – East: Award Construction Contract (Mountain Cascade Inc.)

September 16, 2016

R:\Folders by Job No\6000 jobs\6056\BOD Memos\6058.30 RWC East Contract Award to Mountain Cascade BOD Memo 9-16.doc

RECOMMENDED ACTION: Approve award of the contract to Mountain Cascade Inc. and authorize the General Manager to execute an agreement with Mountain Cascade Inc.

FINANCIAL IMPACT: \$3,520,219 plus \$300,000 contingency (9%)
(included in FY16 and FY17 CIP Budget)

Background

The East project includes construction of 1.9 miles of recycled water pipeline including approximately 7,300 ft of 16-inch PVC pipe, 2,300 ft of 12-inch PVC pipe, and approximately 750 ft of 16-inch welded steel pipe, together with all appurtenances thereto and all restorations. A map of the general pipeline alignment is provided in Attachment 1. The Board authorized advertisement for bids on the above referenced project on April 19, 2016. The advertisement date for this project was May 6, 2016 with a bid opening on July 7, 2016. The District advertised the project in the Marin IJ and posted the project on www.ebidboard.com. Thirteen (13) contractors, including twelve (12) prime contractors, attended the mandatory pre-bid meeting on June 2, 2016. The bid period was for approximately nine (9) weeks and included two addenda. Five bids were received, ranging from a low of \$3,520,219 to a high of \$4,347,492.

	CONTRACTOR	BID
1.	Mountain Cascade, Inc., Livermore	\$3,520,219
2.	Argonaut Constructors, Santa Rosa	\$3,739,969
3.	Ghilotti Construction Co., Santa Rosa	\$3,815,969
4.	Team Ghilotti, Petaluma	\$3,843,844
5.	Ranger Pipelines, San Francisco	\$4,347,492

The Engineer's Estimate was \$2,990,000. The bid variance between the Number 1 and Number 2 low bidders (Mountain Cascade, Inc. and Argonaut Constructors) was \$219,750 (for a variance of 6%). The next two bids were within 10% of the low bidder. Mountain Cascade, Inc. (MCI) of Livermore, California, submitted the lowest responsive bid of \$3,520,219 which is \$530,219 (18%) above the Engineer's construction cost estimate of \$2,990,000. The 18% bid exceedance above the engineers estimate was first reported to the Board at the July 19, 2016 meeting. This exceedance is primarily attributed to: (1) an active construction bidding climate

and (2) higher unit costs for pipeline installation in the Vintage Oaks commercial area than what had been estimated. The higher cost associated with the East Project was one of the reasons staff updated the total project cost estimate for the Central Expansion project by 30% to \$14.8M. Fortunately, due to the District's success in receiving additional federal and state grant funding, overall District costs are still projected to be below the initial 2015 estimate of \$9.9M.

Bid Evaluation

A bid evaluation (Attachment 2) was performed by The Covello Group (Covello), the District's recently hired construction manager for the Central Service Area recycled water projects. The attached analysis shows that MCI and the next lowest bidder, Argonaut Constructors (AC), complied with the bidding requirements.

The bids of MCI and AC were reviewed for compliance with SRF Disadvantaged Business Enterprises (DBE) requirements. Both contractors met those requirements (Attachment 3).

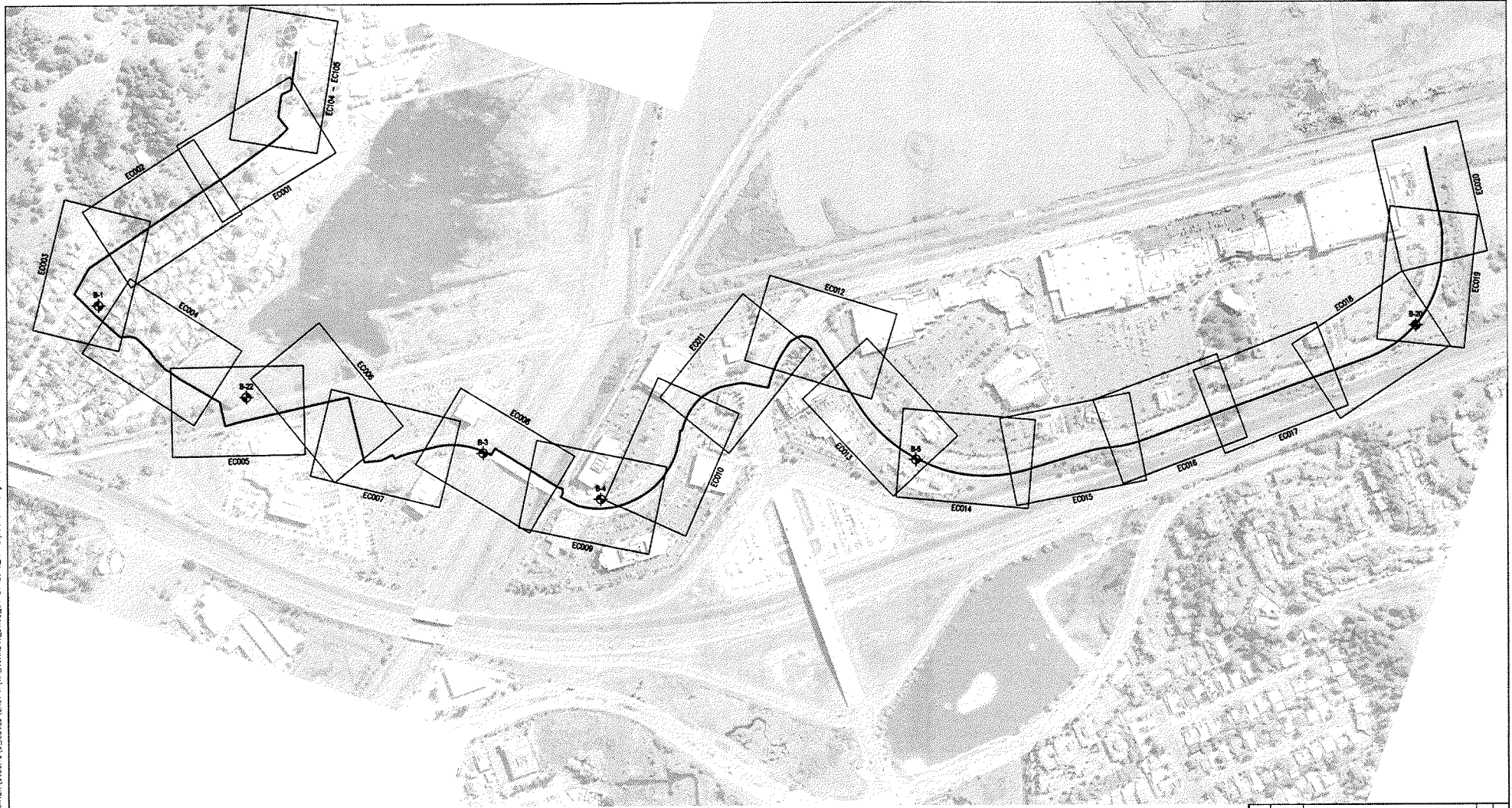
Project Financing

The project receives Water SMART grant funds via Bureau of Reclamation (BOR) awards and grant/loan funds from the State SRF program as summarized with the Board at the July 19, 2016 meeting when the Construction Management contract was approved. An updated summary of grants/loans will be provided to the Board at a subsequent meeting after receipt of the final BOR grant split between affected NBWRA Phase I participating agencies.

RECOMMENDATION

That the Board:

Approve award of the contract to Mountain Cascade Inc. and authorize the General Manager to execute an agreement with Mountain Cascade Inc.



OVERALL PLAN
SCALE: 1"=200'

LEGEND:

◆ BORING LOG LOCATIONS
SEE DRAWINGS E001 & E002

NO.	DATE	ISSUED FOR	BY	APP.
1	03/15/2016	ISSUED FOR BID	MA	2
2		REVISION		
NORTH MARIN WATER DISTRICT NOVATO, CALIFORNIA				
RECYCLED WATER EXPANSION PROJECT CENTRAL SERVICE AREA - EAST OVERALL PLAN				
DES	DR	CH	SCALE	: AS NOTED
DM	MA	CC	DATE	: 03/15/2016
APPROVED: CHIEF ENGINEER			SHEET NO.	: 4 OF 35 SHEETS
R.E. 040036			SERVICE AREA	: 51 JOB NO. 6058.30 NO. E004



August 8, 2016

Mr. Drew McIntyre, Chief Engineer
North Marin Water District
999 Rush Creek Place
Novato, CA 94948

Subject: Bid Review
Project: Recycled Water Expansion – Central Service Area – East Project
Project No: 5 6058.30

Dear Mr. McIntyre:

Sealed bids for the Project were received and opened on July 7, 2016, at 3:00pm. Five (5) bids were received. The three lowest bids are listed below:

<u>Contractor</u>	<u>Bid Amount</u>
Mountain Cascade, Inc.	\$3,520,219
Argonaut Constructors	\$3,739,969
Ghilotti Construction	\$3,815,969

The three lowest bids were reasonably clustered and competitive, indicating that the plans and specifications presented a biddable and constructible Project. All bids were above the Engineer's Estimate of \$2,990,000. This is likely an indication of the complexities related to portions of the Work and the current bidding climate in the underground pipeline construction industry.

In accordance with the requirements of the Contract, the Bid Protest period expired absent any protests from bidding contractors. The three low bids were reviewed for general conformance with bidding requirements. Since there were no bid protests, the bid of the apparent low bidder, Mountain Cascade, Inc. (MCI), has been reviewed in detail.

Number of Bids Submitted: The number of bids submitted is considered adequate, especially considering the current activity in the underground pipeline industry.

Prices for Base Bid Items: The base bid schedule consisted of 12 bid items; nine (9) were lump sum, two (2) of which were prescribed allowances. Three (3) bid items were unit price. Of the six (6) lump sum bid items determined by the contractors, two (2) bid items had noticeable variations: Bid Item 2, *Trenching, sheeting, shoring, etc.*; MCI bid \$250,000 and the next low bidders had \$50,000 and \$25,000 in their bids; Bid Item 3, *All work to construct the 16-inch and*

August 8, 2016

Central Service Area – East Project – Bid Review

12-inch, etc.; MCI had \$1,989,000 and the next low bidders had \$2,419,000 and \$2,500,000. The combination of Bid Items 2 and 3 represents the majority of general contractors' direct bid costs, totaling between 64% and 67% of the Base Bid Amount for each of the three (3) low bidders. It is likely that MCI apportioned a higher percentage of their total costs to Bid Item 2. The remaining lump sum bid items were all within the range of industry normal variances.

In regards to the unit price bid items, MCI was over 366% (\$550/CY as compared to \$150/CY) higher than the next highest bidder for Bid Item 4, *Rock Excavation*; we presume that MCI has factored in a large cost related to crew productivity and/or is mitigating the potential of encountering hard rock quantities that exceeds the bid quantity. Unit price Bid Item 8, Traffic Loops, had a dramatic unit price variance (\$450/loop for MCI as compared to \$4,500/loop for Argonaut). One explanation for this variance is that Argonaut's bid includes an electrical subcontractor to perform this work. MCI's bid for this item totals less than 0.5% of their total bid and as such MCI may be self-performing this work. Further, Argonaut's subcontractor may have interpreted the scope differently than the other bidders.

Bid Forms: As verified by District staff and presented in the attached spreadsheet, MCI submitted all required bid forms at the time of bid. MCI also provided the required post bid information. Argonaut and Ghilotti did not include all bid forms at the time of bid. Argonaut and Ghilotti have provided the required post bid information.

SRF Documentation: As verified by District staff, all bidders provided the required EPA DBE Subcontractor Utilization Forms. Mountain Cascade has submitted the required Good Faith Documentation, which has also been reviewed by District staff and no exceptions were noted.

Bidder Experience: MCI submitted documents that substantiate that they have the necessary experience and qualifications to perform the Work. We have contacted the references listed by MCI the Bid Forms. Three (3) of the (4) references returned our phone calls. All respondents provided favorable comments. Covello has managed MCI projects since 2001 and based on our knowledge of and experience working with MCI, we believe they have the necessary experience and capabilities to perform the Work.

MCI's contractor's license, 422496, is active and in good standing. MCI's Public Works Contractor Registration, Number 1000005190, is current.

MCI provided their past three (3) years (2103, 2014 and 2015) Experience Modification Rate (EMR), Lost Time Incident Rate (LTIR) and Recordable Incident Rate (RIR) to demonstrate their Safety Qualifications. MCI met the minimum safety criteria required by Contract. MCI listed values for EMR, LTIR and RIR on page 00420-04; we obtained additional information, such as total hours worked, lost time incidents and recordable incidents, to confirm the listed values.

In regards to Financial Qualifications, which is required to be submitted within five (5) days of the bid opening, MCI provided the required financial information, the majority of which is considered confidential. In summary, MCI provided their Consolidated Financial Statement for

August 8, 2016

Central Service Area – East Project – Bid Review

the year ending September 30, 2015, which included an independent Auditor's Report by Gallina, LLP, (attached). Additionally, MCI provided a letter from the Surety, Liberty Mutual, which substantiates MCI's bonding capacity (also attached). The District's Controller/Auditor reviewed the Consolidated Financial Statement and concluded that it shows MCI to be solvent and profitable and their financial position to be acceptable.

The Financial Qualifications, Section 00420 D. C., also required the contractors to provide information related to claims filed against the bidder and claims filed by the bidder within the last five (5) years. MCI provided the required information related to their claims within the last five (5) years. During this period MCI has made claims against the City and County of San Francisco and the State of California Department of Water Resources; a claim against MCI was filed by the San Luis Obispo County Flood Control & Water Conservation District. Additional details are attached.

Subcontractors: The three (3) low bidders identified subcontractors that they will use to perform work valued at more than one-half of one percent (0.5%) as required by the Public Contract Code. MCI listed three (3) subcontractors, all of which have current and active contractor licenses and are registered Public Works Contractors. Their Jack & Bore subcontractor, is Safe Utility Exposure (SUE), Inc., from La Mirada, CA. Since this subcontractor is unfamiliar to Covello, we contacted MCI to discuss the subcontractor qualifications. MCI verified that they have worked with SUE successfully in the past and that they are performing the Jack & Bore work in its entirety.

Material Suppliers: MCI and Ghilotti listed various material manufacturers and suppliers; Argonaut did not provide a listing of suppliers with their bid. It has not been verified that MCI's listed suppliers comply with District requirements and it is suggested that the District confirm their acceptability.

Conclusion: Based on our review, the apparent low bidder, MCI, has submitted a responsive and responsible bid. Accordingly, it is recommended that the District award the Contract to MCI.

Sincerely,

Covello



Gary Skrel
Project Manager

Contractor's License Detail for License # 422496

DISCLAIMER: A license status check provides information taken from the CSLB license database. Before relying on this information, you should be aware of the following limitations.

CSLB complaint disclosure is restricted by law (B&P 7124.6) If this entity is subject to public complaint disclosure, a link for complaint disclosure will appear below. Click on the link or button to obtain complaint and/or legal action information.

Per B&P 7071.17, only construction related civil judgments reported to the CSLB are disclosed.

Arbitrations are not listed unless the contractor fails to comply with the terms of the arbitration.

Due to workload, there may be relevant information that has not yet been entered onto the Board's license database.

Business Information

MOUNTAIN CASCADE INC
P O BOX 5050
LIVERMORE, CA 94551
Business Phone Number:(925) 373-8370

Entity Corporation
Issue Date 05/10/1982
Expire Date **05/31/2018**

License Status

This license is current and active.

All information below should be reviewed.

Classifications

A - GENERAL ENGINEERING CONTRACTOR

Certifications

HAZ - HAZARDOUS SUBSTANCES REMOVAL

Bonding Information

Contractor's Bond

This license filed a Contractor's Bond with SAFECO INSURANCE COMPANY OF AMERICA.

Bond Number: 5685653

Bond Amount: \$15,000

Effective Date: 01/01/2016

Contractor's Bond History

Bond of Qualifying Individual

The qualifying individual MICHAEL DUKE FULLER certified that he/she owns 10 percent or more of the voting stock/membership interest of this company; therefore, the Bond of Qualifying Individual is not required.

Effective Date: 08/16/2007

Workers' Compensation

This license has workers compensation insurance with the OLD REPUBLIC INSURANCE COMPANY

Policy Number: A1CW06911502

Effective Date: 10/01/2015

Expire Date: 10/01/2016

Workers' Compensation History

**Recycled Water Expansion – Central Service Area – East Project
Safety Ratings**

RIR							
Mountain Cascade: Annual				Mountain Cascade: 3-yr Aggregate			
Year	Recordable Incidents	Total Hours Worked	RIR	Year	Recordable Incidents	Total Hours Worked	RIR
2015	6	511,301	2.347	2015	6	511,301	
2014	13	483,507	5.377	2014	13	483,507	
2013	7	336,935	4.155	2013	7	336,935	
Average			3.960	Total	26	1,331,743	3.905

LTIR							
Mountain Cascade: Annual				Mountain Cascade: 3-yr Aggregate			
Year	Lost Time Incidents	Total Hours Worked	LTIR	Year	Lost Time Incidents	Total Hours Worked	LTIR
2015	2	511,301	0.782	2015	2	511,301	
2014	1	483,507	0.414	2014	1	483,507	
2013	3	336,935	1.781	2013	3	336,935	
Average			0.992	Total	6	1,331,743	0.901



Independent Auditor's Report

To the Board of Directors and Stockholders
of **Mountain Cascade Holding Company, Inc.**
Livermore, California

We have audited the accompanying consolidated financial statements of Mountain Cascade Holding Company, Inc. (a California corporation), which comprise the consolidated balance sheet as of September 30, 2015, and the related consolidated statements of income, equity, and cash flows for the year then ended, and the related notes to the consolidated financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Mountain Cascade Holding Company, Inc. as of September 30, 2015, and the results of its operations and its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

San Jose, California
January 20, 2016



Liberty Mutual Surety
1340 Treat Blvd., Suite 550
Walnut Creek, CA 94597

July 11, 2016

To: North Marin Water District

Re: Mountain Cascade, Inc.
Project: Recycled Water Expansion Project – Central Service Area – East
Low Bid Amount: \$3,520,219.00

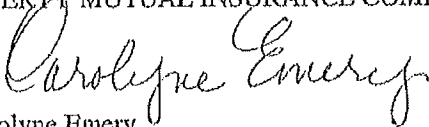
To Whom It May Concern:

Mountain Cascade, Inc. is a highly regarded and valued client of Liberty Mutual Insurance Company. While Liberty Mutual Insurance Company does not set bonding limits for Mountain Cascade, Inc., we have supported them on single projects up to \$17,000,000. Mountain Cascade's aggregate bonding capacity is \$125,000,000.

The current surety capacity of Mountain Cascade, Inc. is sufficient for the bonding requirements of this project.

Liberty Mutual Insurance Company is listed in the United States Treasury Department Listing of Approved Sureties, dated July 1, 2015, and has an A.M. Best Rating of A XV. Liberty Mutual Insurance Company complies with the provision of the Code of Civil Procedure, Section 995.660. Liberty Mutual Insurance Company is a California admitted surety. Willis Insurance Services of CA, Inc., 525 Market Street, Suite 3400, San Francisco, CA 94105 is the insurance agent of record for Mountain Cascade. Their phone number is 415-955-0100.

LIBERTY MUTUAL INSURANCE COMPANY


Carolyn Emery
Attorney-in-Fact

Member of Liberty Mutual Group

Eileen Mulliner

From: Drew McIntyre
Sent: Tuesday, May 10, 2016 10:10 AM
To: Eileen Mulliner
Subject: FW: RWC East Plans_Specs

From: August, Barbara@Waterboards [<mailto:Barbara.August@waterboards.ca.gov>]
Sent: Tuesday, May 10, 2016 8:31 AM
To: Drew McIntyre; Kals, Sandeep@Waterboards
Cc: Dave Jackson; Taylor, Martin@Waterboards
Subject: RE: RWC East Plans_Specs

Good Morning:

I've completed my review of the document.

I have no issues. All EPA and DBE language and requirements are in order

Thank you.

Barbara

From: Drew McIntyre [<mailto:dmcintyre@nmwd.com>]
Sent: Friday, May 06, 2016 5:11 PM
To: Kals, Sandeep@Waterboards
Cc: Dave Jackson; Taylor, Martin@Waterboards; August, Barbara@Waterboards
Subject: FW: RWC East Plans_Specs

Sunny,

We advertised the RW Central East Project today. Please provide one final review of the DBE, EPA, etc requirements to make sure all is in order. Both Barbara and Martin have reviewed earlier versions so we should be good but want to get one final approval of the complete set of Contract Documents. See the instructions below for access to our FTP site.

Thanks

Drew

From: Eileen Mulliner
Sent: Friday, May 06, 2016 3:07 PM
To: Drew McIntyre
Subject: RWC East Plans_Specs

The plans and specs are on the ftp site:

go to <ftp://ftp.nmwd.com>

13

MEMORANDUM

To: Board of Directors

September 16, 2016

From: Chris DeGabriele, General Manager 

Subj: Comments on Sonoma County Water Agency Fish Habitat Flows and Water Rights Project Draft EIR

I:\gm\bod misc 2016\scwa fish habitat deir memo bod.docx

RECOMMENDED ACTION: Board authorize submittal of comments on the subject DEIR.**FINANCIAL IMPACT:** None at this time

On August 19th, Sonoma County Water Agency released the subject DEIR for a 60-day review period on the proposed project necessary to change SCWA's management of water supply releases from Lake Mendocino and Lake Sonoma and provide minimum instream flows that will improve rearing habitat for threatened and endangered salmon as required by the National Marine Fisheries Service (NMFS) Russian River Biological Opinion.

The proposed project includes:

- 1) Changes to minimum instream flow requirements to benefit rearing habitat conditions for juvenile steelhead and coho salmon;
- 2) Changes to minimum instream flow requirements to support the fall-run Chinook salmon migration;
- 3) Implementation of a new Russian River Hydrologic Index moving the criteria for instream flow requirements from the Eel River Watershed to Lake Mendocino;
- 4) Extending the time to complete beneficial use of the existing 75,000AF/year of water authorized under SCWA's existing water rights permits to December 31, 2040; and
- 5) Adding the Occidental Community Services District and Town of Windsor points of diversion and rediversion to the SCWA existing water rights permits.

SCWA is not proposing to alter the quantities of water that it diverts or rediverts from Lake Mendocino and Lake Sonoma under its water rights permits or obtain any new authorization for water rights or construct new facilities under this proposed project.

The proposed District comments on the DEIR are included as Attachment 1. Attachment 2 includes excerpts from the DEIR including:

- The Table of Contents,
- Chapter 1 – Executive Summary,
- Chapter 2 – Introduction, and
- Chapter 3 – Background and Project Description.

The full document (which consists of six volumes and 3,600 pages) can be found electronically on SCWA's website at www.scwa.ca.gov/fish-flow/

The Board received information on the project initially at the November 16, 2010 meeting at which time District comments on the Notice of Preparation of the DEIR were reviewed. Those comments (Attachment 3) supported changing the Hydrologic Index from the Eel River/Lake Pillsbury to Lake Mendocino and suggested that some means of adaptive management be considered to coordinate with and accommodate a future Dry Creek Habitat Enhancement Project and Potential Dry Creek Bypass Pipeline. The District Board also received a presentation from SCWA at the April 21, 2015 meeting on Upper Russian River Water Supply in which the SCWA Principal Engineer stated the entire river system must be operated in balance to provide water supply for consumptive uses (both urban and agricultural) and for environmental needs, particularly for threatened and endangered anadromous fisheries.

In comments made to the SCWA Board of Directors at their public hearing held on September 13th, I reiterated those comments and reminded the SCWA Board that even though the project is very complex, SCWA has received authority from NMFS, California Department of Fish and Wildlife and the State Water Resources Control Board to move forward with changes. A copy of the SCWA presentation slides from the Public Hearing is included as Attachment 4.

The Draft EIR identifies seven areas of significant and unavoidable impacts (pages 1-19 to 1-38 of Attachment 2) including:

- 1) Inundation by seiche, tsunami or mud flow (impact 4.1-5 and 5.7.1-10);
- 2) Violation of water quality standards or waste discharge requirements or otherwise degrading water quality (impact 4.2-4, 5.7.2-2, and 5.7.2-5);
- 3) Adversely affect the ability of some water right permit holders to divert (impact 4.10-1 and 5.7.9-1);
- 4) Deplete groundwater supplies or interfere with groundwater recharge (impact 5.7.1-1);
- 5) Alter the existing drainage pattern of a site or area (impact 5.7.1-4 and 5.7.1-6);
- 6) Alter or inhibit access to boating and recreation (impact 5.7.5-5 and 5.7.5-7); and
- 7) Adversely affect scenic vista or visual character (impact 5.7.8-1 and 5.7.8-4).

At the public hearing on September 13th, there was significant concern expressed principally among lower Russian River residents, pertaining to the low-flow water quality impacts and recreation impacts, leading to my continued belief that some adaptive management element must be included in the project for a successful outcome.

RECOMMENDED ACTION:

Board review the District's comment letter and authorize submittal.

DRAFT

September 21, 2016

Jessica Martini-Lamb
Environmental Resources Manager
Sonoma County Water Agency
404 Aviation Blvd.
Santa Rosa, CA 95403

Re: North Marin Water District Comments on the Fish Habitat Flows and Water Rights
Project Draft Environmental Impact Report

Dear Ms. Martini-Lamb:

Thank you very much for the opportunity to comment on this important project and its environmental review. North Marin Water District commented on the Notice of Preparation in a letter dated November 17, 2010 at which time we supported changing the Hydrologic Index from the Eel River/Lake Pillsbury to Lake Mendocino and suggested that some means of adaptive management be considered to coordinate with and accommodate the future Dry Creek Habitat Enhancement Projects and Potential Dry Creek Pipeline.

North Marin continues to support the proposed project to comply with the National Marine Fisheries Service Biological Opinion Reasonable and Prudent Alternative. Furthermore, we continue to support moving the Russian River Hydrologic Index from the Eel River Watershed to Lake Mendocino and to extend the time to complete beneficial use of 75,000AF/year of SCWA Water Rights authorized under existing permits.

North Marin's 2010 comments on the Notice of Preparation suggested some means of adaptive management be considered and we would be supportive of such management to address the significant and unavoidable impacts currently identified in the Draft EIR.

Thank you for the opportunity to comment.

Sincerely,

Chris DeGabriele
General Manager

CC:

Grant Davis, SCWA, General Manager
Linda Reed, City of Santa Rosa, Acting Director of Utilities
Greg Scott, City of Cotati, Public Works/City Engineer
Dan St. John, City of Petaluma, Public Works/Utilities Director
Mary Grace Pawson, City of Rohnert Park, Public Works Director/City Engineer
Dan Takasugi, City of Sonoma, Public Works Director/City Engineer
Tony Bertolero, Town of Windsor, Public Works Director/City Engineer
Dan Muelrath, Valley of the Moon Water District, General Manager
Krishna Kumar, MMWD General Manager
Bob Maddow, Bold, Polsiner, Maddow, Nelson & Judson

CD/kly
T:\GM\2016 Misc\deir comment ltr 091616.doc

ATTACHMENT 1

Fish Habitat Flows and Water Rights Project

Draft Environmental Impact Report

State Clearinghouse No. 2010092087

August 2016

Public Review Period August 19, 2016 to October 17, 2016

Prepared by:



Sonoma County Water Agency
404 Aviation Boulevard
Santa Rosa, CA 95406
Contact: Jessica Martini-Lamb
707-547-1903

TABLE OF CONTENTS

Fish Habitat Flows and Water Rights Project Draft Environmental Impact Report

Acronyms, Abbreviations, and Definition of Terms

Chapter 1 Executive Summary

1.1 Introduction	1-1
1.2 Project Background.....	1-1
1.3 Project Location	1-3
1.4 Project Purpose, Objective, and Need.....	1-3
1.5 Description of Proposed Project	1-7
1.6 Summary of Environmental Impacts	1-12
1.7 Summary of Alternatives Evaluation	1-15
1.8 Impact Summary Table	1-18

Chapter 2 Introduction

2.1 Purpose and Intended Uses of the Draft EIR.....	2-1
2.2 Agency Roles and Responsibilities.....	2-1
2.3 Environmental Review Process	2-3
2.4 Organization of the Draft EIR.....	2-5

Chapter 3 Background and Project Description

3.1 Introduction	3-1
3.2 Project Location	3-1
3.3 Background.....	3-3
3.4 Project Objective.....	3-23
3.5 Purpose and Need for Project.....	3-23
3.6 Description of the Proposed Project	3-28

3.7 Project Alternatives to be Considered.....	3-43
3.8 References.....	3-45

Chapter 4 Introduction to Environmental Setting, Impacts, and Mitigation Measures

4.0.1 Introduction	4.0-1
4.0.2 California Environmental Quality Act Requirements	4.0-1
4.0.3 Environmental Setting and Background.....	4.0-1
4.0.4 Impact Assessment.....	4.0-10
4.0.5 Mitigation Measures.....	4.0-12
4.0.6 Effects Determined Not to be Significant and Discussed Further	4.0-12
4.0.7 Plans and Consistency	4.0-15
4.0.8 References.....	4.0-17

Chapter 4.1 Hydrology

4.1.1 Introduction	4.1-1
4.1.2 Environmental Setting.....	4.1-1
4.1.3 Regulatory Framework.....	4.1-27
4.1.4 Impact Analysis.....	4.1-31
4.1.5 General Plans and Consistency.....	4.1-95
4.1.6 References.....	4.1-99

Chapter 4.2 Water Quality

4.2.1 Introduction	4.2-1
4.2.2 Environmental Setting.....	4.2-1
4.2.3 Regulatory Framework.....	4.2-22
4.2.4 Impact Analysis.....	4.2-28
4.2.5 General Plans and Consistency.....	4.2-66
4.2.6 References.....	4.2-68

Chapter 4.3 Fisheries

4.3.1 Introduction	4.3-1
4.3.2 Environmental Setting	4.3-1
4.3.3 Regulatory Framework.....	4.3-25
4.3.4 Impact Analysis.....	4.3-27
4.3.5 General Plans and Consistency.....	4.3-284
4.3.6 References.....	4.3-288

Chapter 4.4 Vegetation and Wildlife

4.4.1 Introduction	4.4-1
4.4.2 Environmental Setting.....	4.4-2
4.4.3 Regulatory Framework.....	4.4-53
4.4.4 Impact Analysis.....	4.4-58
4.4.5 General Plans and Consistency.....	4.4-67
4.4.6 References.....	4.4-71

Chapter 4.5 Recreation

4.5.1 Introduction	4.5-1
4.5.2 Environmental Setting.....	4.5-1
4.5.3 Regulatory Framework.....	4.5-13
4.5.4 Impact Analysis.....	4.5-13
4.5.5 General Plans and Consistency.....	4.5-42
4.5.6 References.....	4.5-43

Chapter 4.6 Energy

4.6.1 Introduction	4.6-1
4.6.2 Environmental Setting.....	4.6-1
4.6.3 Regulatory Framework.....	4.6-4
4.6.4 Impact Analysis.....	4.6-6

4.6.5 General Plan Consistency	4.6-15
--------------------------------------	--------

4.6.6 References.....	4.6-16
-----------------------	--------

Chapter 4.7 Cultural Resources

4.7.1 Introduction	4.7-1
--------------------------	-------

4.7.2 Environmental Setting	4.7-1
-----------------------------------	-------

4.7.3 Regulatory Framework.....	4.7-24
---------------------------------	--------

4.7.4 Impact Analysis	4.7-31
-----------------------------	--------

4.7.5 References.....	4.7-42
-----------------------	--------

Chapter 4.8 Greenhouse Gas Emissions and Climate Change

4.8.1 Introduction	4.8-1
--------------------------	-------

4.8.2 Environmental Setting	4.8-1
-----------------------------------	-------

4.8.3 Regulatory Framework.....	4.8-11
---------------------------------	--------

4.8.4 Impact Analysis	4.8-20
-----------------------------	--------

4.8.5 General Plans and Consistency.....	4.8-35
--	--------

4.8.6 References.....	4.8-37
-----------------------	--------

Chapter 4.9 Aesthetics

4.9.1 Introduction	4.9-1
--------------------------	-------

4.9.2 Environmental Setting	4.9-1
-----------------------------------	-------

4.9.3 Regulatory Framework.....	4.9-11
---------------------------------	--------

4.9.4 Impact Analysis	4.9-13
-----------------------------	--------

4.9.5 General Plan Consistency	4.9-24
--------------------------------------	--------

4.9.6 References.....	4.9-25
-----------------------	--------

Chapter 4.10 Public Services and Utilities

4.10.1 Introduction	4.10-1
---------------------------	--------

4.10.2 Environmental Setting	4.10-1
------------------------------------	--------

4.10.3 Regulatory Framework.....	4.10-3
----------------------------------	--------

4.10.4 Impact Analysis.....	4.10-4
4.10.5 General Plans and Consistency.....	4.10-15
4.10.6 References.....	4.10-18
Chapter 5 Cumulative	
5.1 Introduction	5-1
5.2 CEQA Analysis Requirements	5-1
5.3 Approach to Identifying Related Projects.....	5-2
5.4 Potential Related Projects.....	5-3
5.5 Related Project to be Analyzed.....	5-41
5.6 Approach to Cumulative Analysis	5-43
5.7 Cumulative Impacts and Mitigation Measures	5-46
5.8 References.....	5-179
Chapter 6 Other Statutory Requirements	
6.1 Growth-Inducing Impacts and Secondary Effects of Growth	6-1
6.2 Irreversible Environmental Changes and Irretrievable Commitments.....	6-6
6.3 References.....	6-8
Chapter 7 Alternatives	
7.1 Introduction	7-1
7.2 Selection of Alternatives	7-1
7.3 Alternatives Analysis.....	7-15
7.4 References.....	7-25
Chapter 8 List of Preparers	8-1
Chapter 9 Bibliography	9-1
Appendices	
A. Notice of Preparation, Scoping Report and Scoping Comments.....	A-1
B. Permit Terms	B-1

C. Russian River Recreation Assessment 2009	C-1
D. Archival Study for the Fish Habitat Flows and Water Rights Project.....	D-1
E. Photo Comparison of flows for the Fish Habitat Flows and Water Rights Project.....	E-1
F. Stipulated Judgement.....	F-1
G. Modeling Report.....	G-1

CHAPTER 1 Executive Summary

1.1 Introduction

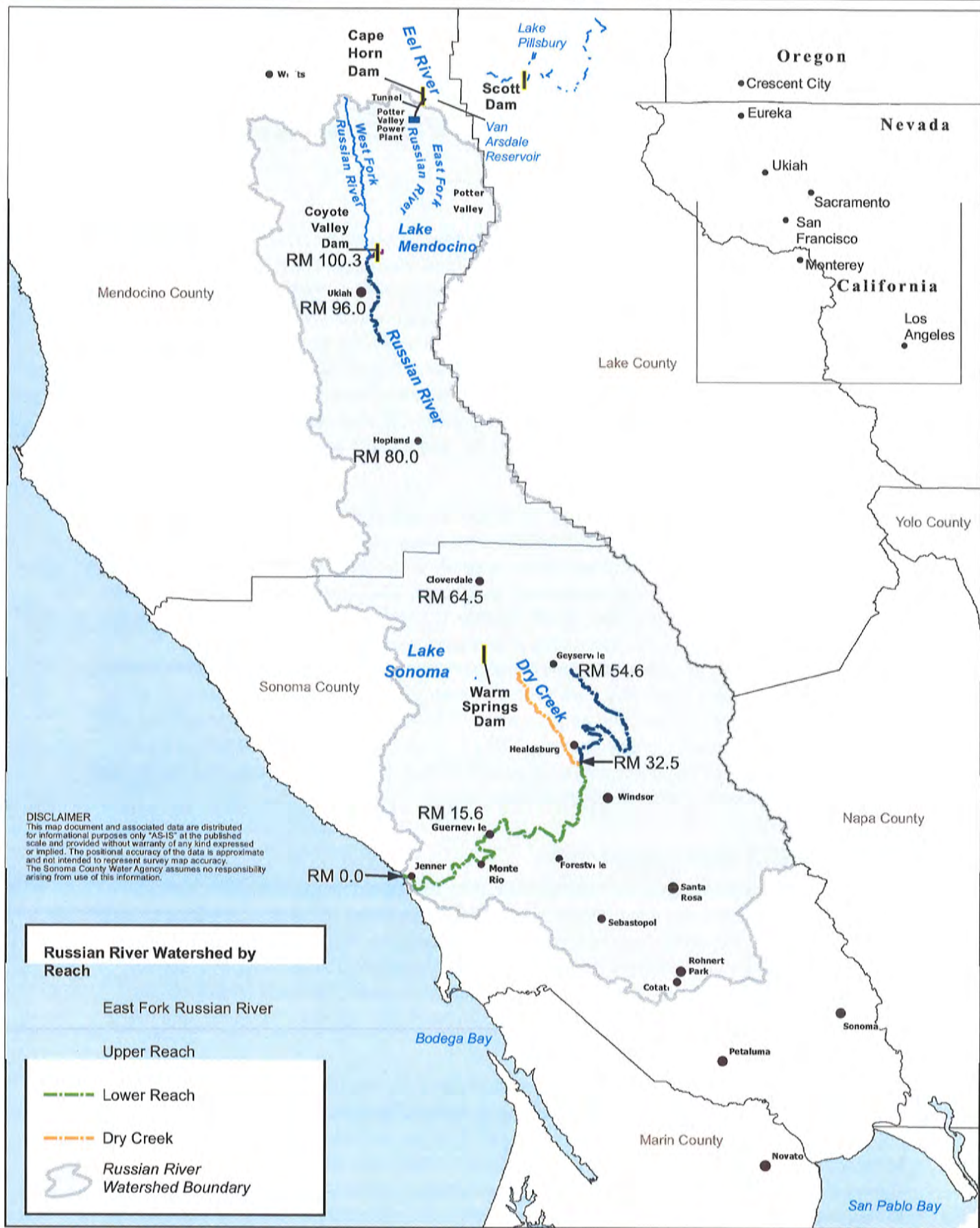
The Sonoma County Water Agency (Water Agency) has prepared this Draft Environmental Impact Report (Draft EIR) for the Fish Habitat Flows and Water Rights Project (Fish Flow Project). This Draft Environmental Impact Report will be referred to throughout this document as the Draft EIR. The Draft EIR has been prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000-21177), the State CEQA Guidelines (CCR, Title 24, Division 6, Chapter 3, Sections 15000-15387), and the Water Agency's Procedures for the Implementation of the California Environmental Quality Act. The Water Agency is the lead agency for consideration of this EIR and potential project approval. CCR Section 15367 defines the Lead Agency as the agency with principal responsibility for carrying out or approving a project.

CEQA requires preparation of an EIR when a proposed project may have a significant impact on the environment (CCR Section 15064). "An EIR is an informational document which will inform public agency decision makers and the public generally of the significant environmental impacts of the proposed project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project" (CCR Section 15121). The basic informational requirements for an EIR include discussions of the purpose and need for the project, identification and analysis of project alternatives, environmental setting, environmental impacts, and proposed mitigation measures. This Draft EIR evaluates and discloses the environmental impacts of the proposed project and its alternatives. Where possible, mitigation measures are proposed to avoid or reduce project impacts. This document is a project-level EIR. A project-level EIR is defined as "the most common type of EIR that examines the environmental impacts of a specific development project" (CCR Section 15161).

1.2 Project Background

The Water Agency was created in 1949 by the California Legislature as a special district to provide flood protection and water supply services. The members of the Sonoma County Board of Supervisors are the Water Agency's Board of Directors. The Water Agency's powers and duties authorized by the California Legislature include the production and supply of surface water and groundwater for beneficial uses, control of flood waters, generation of electricity, provision of recreational facilities (in connection with the Water Agency's facilities), and the treatment and disposal of wastewater.

The Water Agency provides potable water for approximately 600,000 people in Sonoma County and northern Marin County. The Water Agency is the local sponsor for the two federal water supply and flood control reservoirs in the Russian River watershed. Coyote Valley Dam at Lake Mendocino is located on the East Fork of the Russian River near the City of Ukiah in Mendocino County (Figure 1-1). Warm Springs Dam at Lake Sonoma on Dry Creek is located near the City of Healdsburg in Sonoma County. The Water Agency, as local sponsor, partially financed the



Fish Habitat Flows and Water Rights Project



0 5 10
Miles

Figure
1-1

construction of Coyote Valley and Warm Springs dams under agreements with the U.S. Army Corps of Engineers (USACE). The Water Agency manages water supply storage within Lake Mendocino and Lake Sonoma to optimize the water supply yields of the reservoirs, and the Water Agency controls releases from the water supply pools¹ of both reservoirs to maintain required minimum instream flows in the Russian River and Dry Creek and to meet the diversion demands of the Water Agency and other Russian River water users. The USACE manages flood control operations at Lake Mendocino and Lake Sonoma.

The Water Agency manages water supply releases from Coyote Valley Dam and Warm Springs Dam under water right permits originally issued by the State Water Resources Control Board (SWRCB). Water right Permit 12947A authorizes the Water Agency to store up to 122,500 AFY of water in Lake Mendocino and Permit 16596 authorizes the Water Agency to store up to 245,000 AFY of water in Lake Sonoma. The combined amount of direct diversion and re-diversion authorized under the Water Agency's four permits (12947A, 16596, 12949, and 12950) is limited to no more than 180 cfs (116.3 million gallons per day [mgd]) and 75,000 acre-feet per water year. The authorized points of diversion in these permits include the Water Agency's Wohler/Mirabel diversion facilities and facilities of its Russian River Customers.

1.3 Project Location

The Fish Flow Project would change the Water Agency's water right permits, which concern flows in and diversions from the Russian River and Dry Creek, which are located in Mendocino County and Sonoma County, California. A regional location map is included as Figure 1-1. The Russian River watershed drains an area of 1,485 square miles that includes substantial portions of Sonoma and Mendocino counties. The headwaters of the West Fork Russian River are located in central Mendocino County, approximately 15 miles north of Ukiah. The Russian River is approximately 110 miles long and flows generally southward to Forestville, where it then flows westward to the Pacific Ocean near Jenner, approximately 20 miles west of Santa Rosa. Potential environmental impacts of the Fish Flow Project could occur at Lake Mendocino and Lake Sonoma, in and along the Russian River downstream of Coyote Valley Dam to the Pacific Ocean, in and along Dry Creek downstream of Warm Springs Dam, and in the Water Agency's or its contractors' contractors service areas in Sonoma and Marin counties.

1.4 Project Purpose, Objectives, and Need

The objectives of the Fish Flow Project are to manage Lake Mendocino and Lake Sonoma water supply releases to provide instream flows that will improve habitat for threatened and endangered fish species, and to update the Water Agency's existing water rights to reflect current conditions.. The new minimum instream flow requirements proposed by the Fish Flow Project were developed to meet the requirements of the Biological Opinion to improve habitat for threatened and endangered salmonid species.

¹ The water supply pools in Lake Mendocino and Lake Sonoma are sometimes referred to a "water conservation pools."

The Water Agency holds water right permits,² issued by the State Water Resources Control Board (SWRCB), that authorize the Water Agency to divert Russian River and Dry Creek flows and to re-divert water released from Lake Mendocino and Lake Sonoma storage. The Water Agency releases water from storage in these reservoirs for re-diversion and subsequent delivery to retail water suppliers, where the water is used primarily for residential, governmental, commercial, and industrial purposes. The primary points of diversion and re-diversion are the Water Agency's facilities at Wohler and Forestville. The Water Agency also releases water to satisfy the needs of other water users who directly divert streamflow and to replace streamflow lost to the underlying aquifer and to contribute to the maintenance of minimum instream flow requirements in the Russian River and Dry Creek established in 1986 by the SWRCB's Decision 1610. The SWRCB's Decision 1610 approved a hydrologic index and minimum instream flow requirements for the Russian River watershed in 1986. The Decision 1610 hydrologic index, defines the hydrologic condition for the Russian River watershed based on cumulative inflow into Lake Pillsbury in the Eel River watershed. The Decision 1610 hydrologic index and minimum instream flow requirements are included in terms of the Water Agency's water right permits.

The Russian River and Dry Creek minimum instream flow requirements established by Decision 1610 and the hydrologic index that is based on Eel River flows to Lake Pillsbury are no longer appropriate. Decision 1610 was adopted before the listings of three salmonid species in the Russian River watershed under the federal Endangered Species Act (ESA),³ was based on much higher PVP flows to Lake Mendocino than occur today, and did not specifically address the importance of fall storage in Lake Mendocino to the Chinook salmon migration. Also Decision 1610 assumed that higher instream flows were better for fishery resources, and information developed since Decision 1610 was adopted indicates this may not be true for salmonid species in the Russian River and Dry Creek. Decision 1610 expressly recognized that later fishery studies might identify a need to change the minimum instream flow requirements. Decision 1610 also expressly contemplated that changes might be needed if the amounts of water diverted into the East Fork Russian River by PG&E's PVP changed, as it has.

The National Marine Fisheries Service (NMFS) issued its *Biological Opinion for Water Supply, Flood Control Operations, and Channel Maintenance conducted by the U.S. Army Corps of Engineers, the Sonoma County Water Agency, and the Mendocino County Russian River Flood Control and Water Conservation Improvement District in the Russian River Watershed* (Russian River Biological Opinion) on September 24, 2008. NMFS concluded in the Russian River Biological Opinion that the continued operations of Coyote Valley Dam and Warm Springs Dam by the USACE and the Water Agency in a manner similar to recent historic practices are likely to jeopardize and adversely modify the critical habitats of endangered Central California Coast coho salmon and threatened Central California Coast steelhead. Specifically, NMFS concluded that the artificially elevated summertime minimum flows in the Russian River and Dry Creek that are currently required by the Decision 1610 minimum flow requirements result in high water

² Waterwater-right Permits 12947A, 12949, 12950 and 16596.

³ Central California coast coho salmon are also listed as endangered under the California Endangered Species Act.

velocities that reduce the quality and quantity of rearing habitat for coho salmon and steelhead. Additionally, NMFS concluded that maintaining these flows disrupts lagoon formation and retention in the Russian River estuary and that allowing a lagoon to develop and remain during the summer would likely enhance juvenile steelhead and salmon habitat.

NMFS's Russian River Biological Opinion concludes that reducing the Decision 1610 minimum instream flow requirements will enable alternative flow management scenarios that will increase available salmonid rearing habitat in Dry Creek and the upper Russian River, and provide lower, closer-to-natural inflows into the estuary between late spring and early fall, thereby enhancing the potential for maintaining a seasonal freshwater lagoon that would likely support increased production of juvenile steelhead and salmon.⁴

Until the SWRCB changes the Decision 1610 minimum instream flow requirements, these requirements and the resulting adverse impacts to listed salmonids will remain in effect, except during times when temporary changes to these requirements are made by the SWRCB. The Russian River Biological Opinion requires that the Water Agency annually petition the SWRCB for certain temporary changes to the Decision 1610 minimum instream flow requirements during the summer months until the SWRCB issues an order permanently changing these requirements. The Russian River Biological Opinion requires annual Water Agency petitions for temporary changes to minimum instream flow requirements for the mainstem Russian River, but not to the requirements for Dry Creek. The Water Agency petitioned the SWRCB for the Biological Opinion-specified temporary changes for the first time in 2010, which the SWRCB approved.⁵ The Water Agency filed temporary urgency change petitions to comply with the Russian River Biological Opinion in 2011, 2012, and 2016, and the SWRCB approved these petitions.⁶ The temporary changes approved by the SWRCB reduced the minimum instream flow requirement to 70 cubic feet per second (cfs) for the Lower Russian River between approximately May 1 and October 15. Additionally, to enhance steelhead rearing habitat in the Russian River between the East Fork and Hopland, the temporary changes reduced the minimum instream flow requirement to 125 cfs for the Upper Russian River between May 1 and October 15.⁷

The Russian River Biological Opinion concluded that, in addition to providing fishery benefits, the lower instream flow requirements "should promote water conservation and limit effects on in-

⁴ National Marine Fisheries Service. Biological Opinion for Water Supply, Flood Control Operations, and Channel Maintenance conducted by the U.S. Army Corps of Engineers, the Sonoma County Water Agency, and the Mendocino County Russian River Flood Control and Water Conservation Improvement District in the Russian River Watershed. p. 243. September 2008.

⁵ The SWRCB approved the 2010 petition for temporary urgency change in its Order WR 2010-0018-DWR.

⁶ The SWRCB approved the 2011 petition for temporary urgency change in its Order dated June 1, 2011. The 2012 petition was approved in the SWRCB's Order dated May 2, 2012. The 2016 petition for temporary urgency change was approved by the SWRCB in its Order dated May 4, 2016.

⁷ National Marine Fisheries Service. Biological Opinion for Water Supply, Flood Control Operations, and Channel Maintenance conducted by the U.S. Army Corps of Engineers, the Sonoma County Water Agency, and the Mendocino County Russian River Flood Control and Water Conservation Improvement District in the Russian River Watershed. p 247. September 2008.

stream river recreation.”⁸ The Russian River Biological Opinion concluded that the following permanent changes to the Decision 1610 minimum instream flow requirements may achieve these goals:

During Normal Years:

1. Reduce the minimum flow requirement for the Russian River from the East Fork to Dry Creek from 185 cfs to 125 cfs between June 1 and August 31; and from 150 cfs to 125 cfs between September 1 and October 31.
2. Reduce the minimum flow requirement for the Russian River between the mouth of Dry Creek and the mouth of the Russian River from 125 cfs to 70 cfs.
3. Reduce the minimum flow requirement for Dry Creek from Warm Springs Dam to the Russian River from 80 cfs to 40 cfs from May 1 to October 31.

During Dry Years:

1. Reduce the minimum flow requirement for the Russian River between the mouth of Dry Creek and the mouth of the Russian River from 85 cfs to 70 cfs.

During the periods when the temporary changes have been in effect, the Water Agency has monitored water quality and fish, and collected and reported monitoring information as required by the Biological Opinion. This information has been used to develop the proposed Fish Flow Project and analyze its potential environmental impacts.

In 2002, 2004, 2007, and 2009, water storage levels in Lake Mendocino declined to low levels. In 2002, the Decision 1610 hydrologic index designated the water year as a “dry” year, and thus authorized reductions in the minimum instream flow requirements, but this was not the case in 2004, 2007 or 2009. In those years, the Water Agency petitioned for and the SWRCB approved temporary urgency changes to Water Agency water right permits to temporarily reduce the minimum instream flow requirements, to preserve Lake Mendocino water storage and to maintain a reliable water supply.⁹ Low water storage levels in Lake Mendocino during these years were due to lack of rainfall and, in 2007 and 2009, were also due to lower inflows into the East Fork Russian River from PG&E’s PVP, resulting from the 2004 changes in the FERC license for the PVP.

Because of the recent changes in operation of PG&E’s PVP and consequent reductions in PG&E’s PVP imports from the Eel River into the Russian River, the relationship between Eel River hydrologic conditions and Russian River hydrologic conditions has changed and it is no

⁸ National Marine Fisheries Service. Biological Opinion for Water Supply, Flood Control Operations, and Channel Maintenance conducted by the U.S. Army Corps of Engineers, the Sonoma County Water Agency, and the Mendocino County Russian River Flood Control and Water Conservation Improvement District in the Russian River Watershed. p. 244. September 2008.

⁹ The SWRCB approved the 2004 petition for temporary urgency change in its Order WRO 2004-0035. The 2007 temporary urgency change petition was approved in Order WRO 2007-0022. The 2009 temporary urgency change petition was approved in Order WRO 2009-0034-EXEC.

longer reasonable to use cumulative Lake Pillsbury inflows to determine the water-year type (normal, dry, or critical) that governs Russian River and Dry Creek minimum instream flow requirements. It would better reflect local hydrologic conditions if the water-year type for Russian River minimum instream flow requirements were based on conditions in the Russian River watershed rather than on conditions in the Eel River watershed.

The Fish Flow Project is proposed and is necessary to change the Water Agency's management of water supply releases from Lake Mendocino and Lake Sonoma to provide minimum instream flows that will improve rearing habitat for threatened and endangered salmon, as required by the NMFS's Russian River Biological Opinion and CDFW's Consistency Determination, and to update the Water Agency's existing water rights to reflect current conditions.

1.5 Description of the Proposed Project

Under the Proposed Project, the Water Agency would manage water supply releases from Lake Mendocino and Lake Sonoma to provide minimum instream flows in the Russian River and Dry Creek that would improve habitat for listed salmonids and meet the requirements of the Russian River Biological Opinion. To implement the Fish Flow Project, changes to the Water Agency's existing water right permits from the SWRCB are required, as described below.

Water right Permit 12947A authorizes the Water Agency to store up to 122,500 AFY of water in Lake Mendocino and Permit 16596 authorizes the Water Agency to store up to 245,000 AFY of water in Lake Sonoma. The combined amount of direct diversion and re-diversion authorized under Permits 12947A, 12949, 12950, and 16596 is limited to a maximum instantaneous rate of 180 cfs and to a maximum annual rate of 75,000 acre-feet per water year. The Proposed Project does not include any changes to either of these limits.

The Proposed Project includes the following five components:

- amendments of the Water Agency's water right permits to replace the existing hydrologic index (which is based primarily on Lake Pillsbury inflows) with the new Russian River Hydrologic Index;
- changes to the minimum instream flow requirements in these permits to improve rearing habitat conditions for juvenile steelhead and coho salmon;
- changes to these minimum instream flow requirements to improve conditions for fall-run Chinook salmon migration;
- extending the deadlines for completing full beneficial use in these permits to December 31, 2040, and
- adding the Occidental Community Services District and Town of Windsor points of diversion and re-diversion to the authorized points of diversion in these permits.

The Proposed Project does not propose to increase or otherwise change the quantities of water that it diverts from the Russian River and Dry Creek and re-diverts from Lake Mendocino and

Lake Sonoma under its water right permits, obtain any new authorizations for new rights, or construct new facilities.

1.5.1 Russian River Hydrologic Index

The Water Agency filed a petition to the SWRCB in August 2016 to change the hydrologic index in the Water Agency's water right permits that is used to establish the water-year classifications that determine minimum instream flow requirements for the Russian River and Dry Creek to an index that more accurately reflects actual hydrologic conditions within the Russian River watershed. The Decision 1610 Hydrologic Index as defined in the Water Agency's water right permits is a metric that establishes the water supply condition, which then is used to determine the applicable minimum instream flow schedule for the Upper Russian River, Lower Russian River, and Dry Creek. The Decision 1610 Hydrologic Index is comprised of schedules designated as *Normal*, *Dry*, and *Critical*. The Decision 1610 Hydrologic Index is based on cumulative inflow into Lake Pillsbury in the Eel River watershed beginning on October 1, with hydrologic conditions for the Russian River system evaluated on the first of the month from January 1 to June 1.

Under the Proposed Project, the Decision 1610 Hydrologic Index would be replaced with the Russian River Hydrologic Index, which is comprised of five schedules of minimum instream flow requirements. The use of five new schedules rather than the current three schedules would allow for more responsive management of reservoir water supply storage, particularly for Lake Mendocino during the summer and fall months when preserving cold water in Lake Mendocino for later releases to benefit rearing steelhead and the fall-run Chinook salmon migration and other beneficial uses in the Upper Russian River is most crucial. The proposed five schedules would also allow for additional, smaller, incremental reductions in minimum instream flows, particularly in the Upper Russian River, if reservoir storage amounts are lower due to lower inflows. This allows the Russian River Hydrologic Index to better match minimum instream flow requirements to available water supply and to prevent large changes in minimum instream flows, which could impact habitat and other beneficial uses.

Minimum Instream Flow Schedules

The proposed Russian River Hydrologic Index is comprised of five minimum instream flow schedules (Flow Schedules): Schedule 1, Schedule 2, Schedule 3, Schedule 4, and Schedule 5. Flow Schedule 1 being the wettest hydrology and Schedule 5 being the driest hydrology. Flow Schedules are proposed for the East Fork Russian River from Coyote Valley Dam to the confluence with the Russian River, the Upper Russian River between the East Fork Russian River and Dry Creek, the Lower Russian River from the Russian River confluence with Dry Creek to the Pacific Ocean, and Dry Creek from Warm Springs Dam to its confluence with the Russian River as shown in Table 1-1.

Table 1-1. Russian River Hydrologic Index with Upper Russian River, Lower Russian River, and Dry Creek Minimum Instream Flow Schedules [cubic feet per second (cfs)], Lake Mendocino Cumulative Inflow Condition [cumulative inflows into Lake Mendocino (acre-feet)], and Lake Mendocino Storage Condition [storage condition thresholds (acre-feet)]. Upper Russian River, Lower Russian River, and Dry Creek Flow Schedules determined by Lake Mendocino Cumulative Inflow Condition beginning January 1 and continuing to October 1. Beginning June 1 to December 1, the Upper Russian River Flow Schedule determined by both Lake Mendocino Cumulative Inflow Condition and the Lake Mendocino Storage Condition.

Minimum Instream Flow Schedules

East Fork Russian River (from Coyote Valley Dam to its confluence with the Russian River)

The minimum instream flow shall be 25 cfs at all times.

Upper Russian River (between the East Fork Russian River and confluence with Dry Creek) Minimum Instream Flow Schedules 1 through 5 (cfs)

Flow Schedule	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct 1-15	Oct 16-31	Nov	Dec
1 (Wettest)	105	105	105	105	105	105	105	105	105	105	105	105	105
2	105	105	105	105	85	85	85	85	85	85	105	105	105
3	100	100	100	100	65	65	65	65	65	65	100	100	100
4	70	70	70	70	45	45	45	45	45	45	45	70	70
5 (Driest)	25	25	25	25	25	25	25	25	25	25	25	25	25

Lower Russian River (from the Russian River confluence with Dry Creek to the Pacific Ocean) Minimum Instream Flow Schedules 1 through 5 (cfs)

Flow Schedule	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct 1-15	Oct 16-31	Nov	Dec
1 (Wettest)	135	135	135	135	70	70	70	70	70	70	135	135	135
2	135	135	135	135	70	70	70	70	70	70	135	135	135
3	135	135	135	135	70	70	70	70	70	70	135	135	135
4	85	85	85	85	50	50	50	50	50	50	85	85	85
5 (Driest)	35	35	35	35	35	35	35	35	35	35	35	35	35

Dry Creek (from Warm Springs Dam to its confluence with the Russian River) Minimum Instream Flow Schedules 1 through 5 (cfs)

Flow Schedule	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct 1-15	Oct 16-31	Nov	Dec
1 (Wettest)	75	75	75	75	50	50	50	50	50	50	105	105	105
2	75	75	75	75	50	50	50	50	50	50	105	105	105
3	75	75	75	50	50	50	50	50	50	50	75	75	75
4	75	75	75	50	50	50	50	50	50	50	75	75	75
5 (Driest)	75	75	75	50	50	50	50	50	50	50	75	75	75

The Flow Schedules would be determined based on Lake Mendocino Cumulative Inflow Condition beginning January 1 and continuing to October 1. Beginning June 1, the Flow Schedule for the Upper Russian River would be determined by both the Lake Mendocino Cumulative Inflow Condition and the Lake Mendocino Storage Condition as described in the Chapter 3, "Background and Project Description."

Lake Mendocino Cumulative Inflow Condition

On the first day of each month starting January 1, cumulative inflow into Lake Mendocino would be evaluated monthly through October 1 for a total of ten condition evaluation dates each year determining the Flow Schedule for each reach. The Lake Mendocino Inflow Condition (Inflow Condition) determined at each evaluation date sets the Flow Schedule for the Upper Russian River, Lower Russian River, and Dry Creek. The Inflow Condition is evaluated based on cumulative inflow thresholds.

Lake Mendocino Storage Condition

Beginning June 1, the Upper Russian River Flow Schedule would be determined by both the Inflow Condition and the Lake Mendocino Storage Condition (Storage Condition). On the first day of each month from June 1 through December 1, the Storage Condition would be determined by evaluating storage in Lake Mendocino against storage condition thresholds. The storage condition thresholds would be used to set the Upper Russian River Flow Schedule if the flow schedule determined by the Storage Condition alone is greater (is drier) than the schedule determined by Inflow Condition. For the evaluation dates from June 1 through September 1, the Storage Condition can adjust the Upper Russian River Flow Schedule only one schedule higher (drier) than the value of the Inflow Condition. The evaluation of Lake Mendocino storage from June 1 to October 1 would allow for changes in Upper Russian River Flow Schedules to respond to variability in downstream demands. The evaluation of storage from November 1 to December 1 would allow for changes in Upper Russian River Flow Schedules to respond to years with low fall/early winter rainfall.

The Russian River Biological Opinion determined that reducing minimum instream flows in the Upper Russian River during *Normal* years would enhance the quantity and quality of rearing habitat for steelhead in the Russian River between the confluence of the East Fork Russian River and Cloverdale, the reach that typically supports suitable summer water temperatures for rearing juvenile steelhead. The Russian River Biological Opinion also concluded that conservation of the cold water pool in Lake Mendocino would increase the likelihood that water released from the reservoir would remain suitably cool for rearing steelhead through the summer and help ensure that sufficient flow could be released to facilitate upstream migration of fall run Chinook salmon. The Russian River Biological Opinion also determined that artificially high inflows into the Russian River estuary interfere with the normal processes that discharge river flow through or over the barrier beach to the ocean and that changing minimum instream flow requirements would enhance the prospects of enhancing salmonid estuarine rearing habitat.

These objectives were incorporated in the evaluation of a range of minimum instream flow alternatives and development of the proposed hydrologic index. Meeting these objectives

requires balancing reservoir operations and water supply releases (operational feasibility) that meet demands downstream while meeting objectives for rearing habitat in the summer months, spawning habitat, particularly for Chinook salmon, in the fall, and reservoir and flow reliability.

1.5.2 Other Requested Changes to Water Rights Permits

Petitions for Extensions of Time to Complete Full Beneficial Use of Water

The Water Agency's existing water right Permits 12947A, 16596, 12949, and 12950 specify a deadline of December 1, 1999, for the full application of water to beneficial use. In 1999, the Water Agency filed a petition to extend this deadline to December 1, 2020. The highest diversion and use prior to 1999 was 65,110 AFY for Water Year 1997, and the overall highest diversion and use historically occurred in Water Year 2004 and totaled 68,994 AFY. The Water Agency's significantly lower Russian River diversions during recent years is because of the Water Agency's and its contractors' successful water conservation, recycled water use, and groundwater conjunctive use programs and the downturn in the economy.

The Water Agency anticipates that total diversions under its water right permits will increase over time, even with water conservation, recycled water use, and groundwater conjunctive use, because of population and economic growth in Water Agency's service area. The Water Agency therefore has filed a petition to extend the current the beneficial use deadline to 2040.

The Water Agency's wholesaler 2015 Urban Water Management Plan (Brown and Caldwell 2016) concluded that, with the savings expected from water conservation, recycled water and groundwater conjunctive use, and based on the water demand projections described in the 2015 UWMP, the annual diversion and re-diversion limit of 75,000 AFY in the Water Agency's water right permits may be exceeded in 2035 (Brown and Caldwell 2016). The Water Agency estimates that this limit will be exceed by about 117 AFY in 2035 and by almost 1,000 AFY in 2040. The UWMP states that the near-term demand projections are conservative estimates and the growth rate of water demand may be lower. The potential need to increase the 75,000 AFY diversion and re-diversion limit in the Water Agency's water right permits and the need for future projects will be reevaluated in the Water Agency's 2020 UWMP and in each subsequent UWMP as necessary.

Petition to Add Additional Authorized Points of Diversion

The Water Agency has agreements with specific entities that authorize them to divert water from the Russian River under the Water Agency's water right permits using their own facilities. These entities are the City of Healdsburg, Town of Windsor/Windsor Water District, Camp Meeker Recreation and Park District, and Occidental Community Services District (Occidental CSD). The Water Agency's agreements with these customers require them to use any water right they have before using the Water Agency's water rights. The agreements with Town of Windsor and Occidental CSD require the Water Agency to file petitions with the SWRCB for changes to the Water Agency's water right permit that will allow these Russian River customers to divert water from the Russian River at specific points of diversion under the Water Agency's permits. The

Water Agency petitioned the SWRCB to authorize the addition of the Occidental CSD and Town of Windsor points of diversion in October 2002 and May 2004, respectively. Both petitions are still pending before the SWRCB. The Water Agency's agreement with the Occidental CSD will become effective when the SWRCB approves the petition to add the Occidental CSD point of diversion.

The addition of the Occidental CSD's point of diversion would add one new point of diversion and re-diversion to the Water Agency's water right permits. Occidental CSD is currently provided water through an agreement with Camp Meeker Recreation and Park District. The SWRCB authorization of the petition would result in the Water Agency's agreement with Occidental CSD becoming effective and would allow Occidental CSD to take and the Water Agency to provide water to the Occidental CSD under the Water Agency's Permits 16596, 12947A, 12949, and 12950.

The addition of the Town of Windsor points of diversion would add two existing points of diversion and re-diversion at Town of Windsor Well No. 10 and Well No. 11 to the authorized points of diversion in the Water Agency's water right permits. The two points of diversion and re-diversion are located adjacent to the Town of Windsor's well field near Eastside Road in Sonoma County. Approval of this petition would allow the Town of Windsor to take, and the Water Agency to provide, water under the Water Agency's Permits 16596, 12947A, 12949, and 12950.

1.6 Summary of Environmental Impacts

Impact Assessment Methodology

This EIR includes Chapter 4, "Environmental Setting, Impacts, and Mitigation Measures," is divided into resource sections, which discuss the following resource categories that are listed in order in which they appear in Chapter 4.0.

- | | |
|----------------------------|--|
| 1. Hydrology | 7. Greenhouse Gas Emissions and Climate Change |
| 2. Water Quality | 8. Cultural Resources |
| 3. Fisheries Resources | 9. Aesthetics |
| 4. Vegetation and Wildlife | 10. Public Services and Utilities |
| 5. Recreation | |
| 6. Energy | |

The resource sections evaluate the potential environmental impacts resulting from the Fish Flow Project. Each section provides the existing environmental setting, regulatory framework, impact analysis methodology, significance criteria, and the analysis of potential impacts. Impacts are numbered sequentially; any required mitigation measures are described and numbered to correspond with the impact number. Impacts are categorized as either no impact, less than significant impact, less than significant with mitigation, significant and unavoidable or beneficial. References are included at the end of each resource section.

The methodology used to assess the impacts of the project varies with the type of resource or impact being addressed. In some cases, the impacts have been determined by applying quantitative methods or reasoning; in other cases, a more qualitative approach was found to be most appropriate. The professional judgment of the Water Agency's staff and consultants has been applied in conducting this environmental assessment and developing feasible mitigation measures.

1.6.1 Effects Determined Not to be Significant and Not Discussed Further

CEQA and the CEQA Guidelines allow a lead agency to dismiss environmental effects that are not significant or potentially significant from detailed discussion in an EIR (PRC Section 21100, CCR Sections 15126.2[a] and 15128). For effects dismissed as clearly less than significant and not discussed further, the CEQA Guidelines require a brief explanation of the reasons supporting that determination.

Based on a review of the project description and research and analysis of potential environmental effects during preparation of this Draft EIR, it has been determined that the following resource categories would not result in significant environmental impacts from the project. Accordingly, these resources are not addressed further in this Draft EIR. Further discussion is provided in Chapter 4, "Environmental Setting, Impacts, and Mitigation Measures," regarding the reasons why significant impacts to each resource would not occur.

- | | |
|---|------------------------------|
| ▲ Air Quality | ▲ Land Use and Planning |
| ▲ Agricultural Resources | ▲ Noise |
| ▲ Geology, Soils, and Mineral Resources | ▲ Population and Housing |
| ▲ Hazards and Hazardous Materials | ▲ Traffic and Transportation |

1.6.2 Findings

An overview of environmental impacts by resource area is provided below based on the detailed findings for the Proposed Project provided in Chapter 4.0, "Environmental Setting, Impacts, and Mitigation Measures." Table 1-2, provided at the end of this chapter, summarizes the environmental impacts associated with the Fish Flow Project. The table is organized to present impacts by environmental resource categories, available mitigation measures, and the significance of each impact after mitigation. The listing of environmental impacts, mitigation measures, and alternatives included in this chapter constitutes the required identification of issues to be resolved and areas of controversy in accordance with the State CEQA Guidelines Section 15123(b).

Less than Significant

For the Fish Flow Project, based on technical review and evaluation against the environmental and regulatory setting, the impacts to the following environmental resources were determined to be less than significant.

- | | |
|----------------------------|--|
| 1. Hydrology | 6. Energy |
| 2. Water Quality | 7. Greenhouse Gas Emissions and Climate Change |
| 3. Fisheries Resources | 8. Aesthetics |
| 4. Vegetation and Wildlife | |
| 5. Recreation | |

Beneficial

As summarized in Table 1-2, environmental impacts would be beneficial in the following areas:

1. Changes in minimum instream flow could benefit the quantity of rearing habitat for steelhead fry in the Upper Russian River (Impact 4.3-1).
2. Changes in minimum instream flow could benefit the quantity of habitat for rearing Chinook salmon fry in the Upper Russian River (Impact 4.3-3).
3. Changes in minimum instream flow could benefit the quantity of habitat in the Upper Russian River rearing juvenile Chinook salmon (Impact 4.3-4).
4. Changes in minimum instream flow could benefit the movement of salmonids in the Upper Russian River (Impact 4.3-6).
5. Changes in minimum instream flow could benefit the movement of salmonids in Dry Creek. (Impact 4.3-8).
6. Changes in minimum instream flow could benefit the quantity of spawning habitat for salmonids in the Russian River (Impact 4.3-9).
7. Changes in minimum instream flow could benefit the rearing habitat for juvenile steelhead through elevated water temperatures in the months April through November in the Russian River (above Cloverdale) and in Dry Creek. (Impact 4.3-21)
8. Changes in minimum instream flow could benefit the habitat for spawning sunfish through increased reservoir releases at Lake Mendocino (Impact 4.3-27).
9. Changes in minimum instream flow could benefit the habitat for spawning sunfish through increased reservoir releases at Lake Sonoma. (Impact 4.3-28).

Significant and Unavoidable

As summarized in Table 1-2, environmental impacts would be significant and unavoidable, even with implementation of feasible mitigation measures, in the following areas:

1. The Fish Flow Project could contribute to inundation by seiche, tsunami, or mudflow (Impact 4.1-5). The Project would potentially increase water elevations in the Russian River Estuary during lagoon conditions when the river mouth is closed or an outlet channel is in place. In the very unlikely event of a tsunami of sufficient

magnitude, the Proposed Project may result in increased risk to people and structures from flooding.

2. Changes in minimum instream flow requirements could result in a violation of water quality standards or waste discharge requirements or otherwise degrade water quality relating to biostimulatory substances in the Russian River (Impact 4.2-4). Elevated nitrogen and phosphorus concentrations that exceed United States Environmental Protection Agency (USEPA) criteria, along with depressed and supersaturated dissolved oxygen concentrations observed under Baseline Conditions would likely continue under the Proposed Project.
3. Changes in minimum instream flow requirements could adversely affect when water right permit holders may divert water from the Russian River while complying with the minimum bypass flow terms in their water-right permits (Impact 4.10.1). Water right permits along the Russian River may have terms that restrict diversions, including a minimum bypass flow rate below which diversions are not authorized. The Proposed Project would result in lower instream flows that could adversely affect when holders of these permits could divert water.

Chapter 4, "Environmental Setting, Impacts, and Mitigation Measures," and its sub-chapters, did not identify any significant, but mitigable, environmental impacts.

1.7 Summary of Alternatives Evaluation

This EIR describes and evaluates a reasonable range of alternatives in accordance with CEQA Guidelines Section 15126(a). Because the range of alternatives considered must meet most of the basic objectives of the project, alternatives evaluated were limited to management of water supply releases from Lake Mendocino and Lake Sonoma to meet minimum instream flow requirements in the Russian River and Dry Creek. Selecting another location for project alternatives would not be feasible.

Alternatives evaluated using the screening process included those identified in the Russian River Biological Opinion, by Water Agency staff and in comments provided by regulatory agencies, public agencies and members of the public in response to the Notice of Preparation (NOP) of Environmental Impact Report (EIR) issued for the Fish Flow Project in 2010. The Water Agency screened 21 minimum instream flow alternatives and 7 combined hydrologic index and minimum instream flow requirement alternatives. The detailed results of the alternatives screening process are included in Chapter 7, "Alternatives," of the EIR. Provided below are summary descriptions of the alternatives which meet the basic project objectives, avoid, minimize or lessen environmental effects, and were carried forward for further analysis.

1.7.1 No Project 1 Alternative

CEQA Guidelines Section 15125.6(e)(1) requires that a no project alternative be described and analyzed. Evaluation of a no project alternative allows decision-makers to compare the impacts of approving the project with the impacts of not approving the project. Under the No Project 1 Alternative, the Water Agency would continue to make releases from Coyote Valley Dam and Warm Springs Dam to maintain the minimum instream flow requirements specified in its water

right permits. Implementation of the Proposed Project would not proceed under the No Project 1 Alternative and the Water Agency's water supply operations would not be in compliance with the Russian River Biological Opinion.

The No Project 1 Alternative would result in the continuation of existing conditions within the Russian River and Dry Creek. The Water Agency would continue to make releases from Coyote Valley Dam and Warm Springs Dam to maintain the minimum instream flow requirements specified in its water right permits. These water supply operations have been found to be detrimental to threatened and endangered fish species and could result in the Water Agency being out of compliance with the Russian River Biological Opinion. Implementation of the No Project 1 Alternative would not meet project objectives related to the improvement of habitat for threatened and endangered fish species. The Proposed Project's benefits identified in Section 7.3.1 above would not be achieved under the No Project 1 Alternative.

Implementation of the No Project 1 Alternative would not avoid significant and unavoidable impacts associated with risk of flooding from tsunamis, which is an existing condition in the Russian River Estuary, or potential for violations of water quality standards or degradation of water quality relating to biostimulatory substances in the Russian River as these conditions occur under Baseline Conditions. The No Project 1 Alternative would avoid the Proposed Project's significant and unavoidable impact related to changes in minimum instream flow requirements that could adversely affect the ability of some water right permit holders to divert from the Russian River.

1.7.3 No Project 2 Alternative

Under the No Project 2 Alternative, the Water Agency would continue to make releases from Coyote Valley Dam and Warm Springs Dam to maintain the minimum instream flow requirements specified in its water right permits, but would include the temporary instream flows changes in compliance with the Russian River Biological Opinion. The Russian River Biological Opinion requires annual Water Agency petitions for temporary changes to minimum instream flow requirements for the mainstem Russian River, but not to the requirements for Dry Creek. These minimum instream flow changes are as follows: under *Normal* conditions from May 1 to October 15: 125 cfs in the Upper Russian River and 70 cfs in the Lower Russian River. The Russian River Biological Opinion did not provide recommended temporary changes to minimum instream flows for *Dry* or *Critical* conditions, so these are the same as the minimum instream flow requirements included in the Water Agency's water right permits and approved by the SWRCB's Decision 1610. As described in Chapter 3, "Background and Project Description," the Water Agency has filed temporary urgency change petitions as required by the Russian River Biological Opinion and received temporary urgency change orders issued by the SWRCB, in several years since the Biological Opinion was provided by NMFS. Under the No Project 2 Alternative, the Water Agency's water supply operations would comply with the Russian River Biological Opinion's recommendations for temporary changes in minimum instream flows; however, no changes in reservoir operations through implementation of the Russian River Hydrologic Index would occur. Reservoir operations would continue to follow the Decision 1610 Hydrologic Index.

The No Project 2 Alternative would result in the continuation of existing conditions within the Russian River and Dry Creek, except during the rearing season when minimum instream flow requirements would be reduced on a temporary basis. Outside the rearing season, the Water Agency would continue to make releases from Coyote Valley Dam and Warm Springs Dam to maintain the minimum instream flow requirements specified in its water right permits.

Implementation of the No Project 2 Alternative would meet some of the project objectives related to the improvement of habitat for threatened and endangered fish species. The Proposed Project's benefits identified in Section 7.3.1 above would be achieved for steelhead fry rearing habitat, Chinook salmon fry rearing habitat, Chinook salmon juvenile rearing habitat, adult passage flows in the Upper Russian River, adult passage flows into Dry Creek, improve the quantity of spawning habitat for salmon in the Russian River, and habitat for spawning sunfish in Lake Mendocino.

Water temperatures for juvenile steelhead rearing habitat would not be affected by the No Project 2 Alternative in the Upper Russian River above Cloverdale or in Dry Creek, and the Proposed Project beneficial impact on temperatures would not be achieved. Water surface elevation changes in Lake Sonoma would be nearly identical between the No Project 2 Alternative and Baseline Conditions, and the Proposed Project beneficial impact on habitat for spawning sunfish would not be achieved.

Implementation of the No Project 2 Alternative would not avoid significant and unavoidable impacts associated with risk of flooding from tsunamis, which is an existing condition in the Russian River Estuary, or potential for violations of water quality standards or degradation of water quality relating to biostimulatory substances in the Russian River as these conditions occur under Baseline Conditions. The No Project 2 Alternative would not avoid the Proposed Project's significant and unavoidable impact related to changes in minimum instream flow requirements that could adversely affect the ability of some water right permit holders to divert from the Russian River as the minimum instream flow requirements under this alternative would be below the minimum bypass flow terms included in many of these permits.

1.7.4 Russian River Biological Opinion Alternative

Under the Russian River Biological Opinion Alternative, the Water Agency would continue to make releases from Coyote Valley Dam and Warm Springs Dam to maintain minimum instream flow requirements, but minimum instream flow requirements would be as follows: in *Normal* hydrologic conditions: Upper Russian River (125 cfs), Lower Russian River (70 cfs), and Dry Creek (40 cfs) as recommended in the Biological Opinion. In *Dry* hydrologic conditions, the alternative included a 70 cfs minimum instream flow requirement in the Lower Russian River. The Russian River Biological Opinion did not provide recommended permanent changes to minimum instream flows for *Dry* conditions in the Upper Russian River and Lower Russian River, or *Critical* conditions for all three reaches, so the minimum instream flow requirements are the same as those included in the Water Agency's water right permits and approved by the SWRCB's Decision 1610. However, no changes in reservoir operations through implementation of the Russian River Hydrologic Index would occur. Reservoir operations would continue to follow the Decision 1610 Hydrologic Index.

The minimum instream flows under the Russian River Biological Opinion Alternative would be higher than the Proposed Project, which could result in reductions water supply stored in Lake Mendocino earlier in a year, reducing the availability of cold water stored in the reservoir for releases into the end of the rearing season and the beginning of the fall-run Chinook salmon migration and spawning season.

Implementation of the Russian River Biological Opinion Alternative would not avoid significant and unavoidable impacts associated with risk of flooding from tsunami, which is an existing condition in the Russian River Estuary, or potential for violations of water quality standards or degradation of water quality relating to biostimulatory substances in the Russian River as these conditions occur under Baseline Conditions. The Russian River Biological Opinion Alternative would minimize the Proposed Project's significant and unavoidable impact related to changes in minimum instream flow requirements that could adversely affect the ability of some water right permit holders to divert from the Russian River as the minimum instream flow requirements under this alternative are higher than under the Proposed Project.

1.7.5 Environmentally Superior Alternative

With regard to the other alternatives considered, the Proposed Project is the environmentally superior alternative. Both the No Project 2 and Russian River Biological Opinion alternatives would meet most of the basic objectives of the Fish Flow Project and would achieve some of the improvements to habitat for threatened and endangered fish species. Implementation of the No Project 2 and Russian River Biological Opinion alternatives would not avoid significant and unavoidable impacts associated with risk of flooding from tsunami, which is an existing condition in the Russian River Estuary, or potential for violations of water quality standards or degradation of water quality relating to biostimulatory substances in the Russian River as these conditions occur under Baseline Conditions. The No Project 2 Alternative would not avoid the Proposed Project's significant and unavoidable impact related to changes in minimum instream flow requirements that could adversely affect the ability of some water right permit holders to divert from the Russian River, while the Russian River Biological Opinion Alternative would minimize this impact. The Proposed Project would achieve the project objectives to manage Lake Mendocino and Lake Sonoma water supply releases to provide instream flows that will improve habitat for threatened and endangered fish species by achieving the most beneficial habitat impacts.

1.8 Impact Summary Table

Table 1-2, provided at the end of this chapter, summarizes the environmental impacts associated with the Fish Flow Project. The table is organized to present impacts by environmental resource categories, available mitigation measures, and the significance of each impact after mitigation. The listing of environmental impacts, mitigation measures, and alternatives included in this chapter constitutes the required identification of issues to be resolved and areas of controversy in accordance with the State CEQA Guidelines Section 15123(b).

Table 1-1. Summary of Impacts, Levels of Significance, and Proposed Mitigation Measures for the Fish Flow Project.

Impact	Proposed Mitigation	Impact Significance
Hydrology		
4.1-1. The Fish Flow Project could substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.	No Mitigation Required	Less than Significant
4.1-2. The Fish Flow Project could substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or sedimentation on- or off-site.	No Mitigation Required	Less than Significant
4.1-3. The Fish Flow Project could substantially alter the area of exposed shoreline within Lake Mendocino and Lake Sonoma in a manner which would result in substantial erosion or sedimentation on- or off-site.	No Mitigation Required	Less than Significant
4.1-4. The Fish Flow Project could expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.	No Mitigation Required	No Impact
4.1-5. The Fish Flow Project could contribute to inundation by seiche, tsunami, or mudflow.	No mitigation available	Significant and Unavoidable
Water Quality		
4.2-1. Implementation of the Fish Flow Project could result in a violation of water quality standards or waste discharge requirements or otherwise substantially degrade water quality relating to mercury accumulation in fish tissue in Lake Mendocino and Lake Sonoma.	No Mitigation Required	Less than Significant
Impact 4.2-2. Implementation of the Fish Flow Project could result in a violation of water quality standards or waste discharge requirements or otherwise substantially degrade water quality as it relates to aluminum and specific conductance in the Russian River.	No Mitigation Required	Less than Significant



Impact	Proposed Mitigation	Impact Significance
Impact 4.2-3. Implementation of the Fish Flow Project could result in a violation of water quality standards or waste discharge requirements or otherwise substantially degrade water quality relating to temperature and dissolved oxygen in the Russian River and Dry Creek.	No Mitigation Required	No Impact
Impact 4.2-4. Changes to minimum instream flows could result in a violation of water quality standards or waste discharge requirements or otherwise degrade water quality relating to biostimulatory substances in the Russian River.	No mitigation is available.	Significant and Unavoidable
Fisheries Resources		
4.3-1. Changes in minimum instream flow could substantially affect the quantity of rearing habitat for steelhead fry in the Upper Russian River.	No Mitigation Required	Beneficial
4.3-2. Changes in minimum instream flow could substantially affect the quantity of habitat for rearing juvenile steelhead in the Upper Russian River.	No Mitigation Required	No Impact
4.3-3. Changes in minimum instream flow could substantially affect the quantity of habitat for rearing Chinook salmon fry in the Upper Russian River.	No Mitigation Required	Beneficial
4.3-4. Changes in minimum instream flow could substantially affect the quantity of habitat in the Upper Russian River rearing juvenile Chinook salmon.	No Mitigation Required	Beneficial
4.3-5. Changes in minimum instream flow could substantially affect the quantity of habitat for rearing steelhead, Coho, and Chinook salmon in Dry Creek.	No Mitigation Required	No Impact
4.3-6. Changes in minimum instream flow could substantially interfere with the movement salmonids in the Upper Russian River.	No Mitigation Required	Beneficial
4.3-7. Changes in minimum instream flow could substantially interfere with the movement of salmonids in the Lower Russian River.	No Mitigation Required	No Impact



Impact	Proposed Mitigation	Impact Significance
4.3-8. Changes in minimum instream flow could substantially interfere with the movement salmonids in Dry Creek.	No Mitigation Required	Beneficial
4.3-9. Changes in minimum instream flow could substantially affect the quantity of spawning habitat for salmonids in the Russian River.	No Mitigation Required	Beneficial
4.3-10. Changes in minimum instream flow could substantially affect the quantity of spawning habitat for salmonids in Dry Creek.	No Mitigation Required	No Impact
4.3-11. Changes in minimum instream flow could substantially affect the upstream migration of Chinook salmon through elevated water temperatures in the months October through December in the Russian River and in Dry Creek.	No Mitigation Required	No Impact
4.3-12. Changes in minimum instream flow could substantially affect the quality of spawning habitat and egg incubation for Chinook salmon through elevated water temperatures from November 15 through March in the Russian River and in Dry Creek.	No Mitigation Required	No Impact
4.3-13. Changes in minimum instream flow could substantially affect the quality of habitat for rearing Chinook juveniles by elevated water temperatures from April through June in the Russian River and in Dry Creek.	No Mitigation Required	Less than Significant
4.3-14. Changes in minimum instream flow could substantially affect the quality of habitat for Chinook salmon smolts by elevated water temperatures from April through July 15 in the Russian River and in Dry Creek.	No Mitigation Required	No Impact
4.3-15. Changes in minimum instream flow could substantially affect the upstream migration of coho salmon through elevated water temperatures in the months November through February in the Lower Russian River and in Dry Creek.	No Mitigation Required	No Impact
4.3-16. Changes in minimum instream flow could substantially affect the spawning and egg incubation of coho salmon through elevated water	No Mitigation Required	No Impact

Impact	Proposed Mitigation	Impact Significance
temperatures in the months December through May in Dry Creek.		
4.3-17. Changes in minimum instream flow could substantially affect the quality of habitat for rearing coho salmon juveniles by elevated water temperatures from April through November in Dry Creek.	No Mitigation Required	No Impact
4.3-18. Changes in minimum instream flow could substantially affect emigrating coho salmon through elevated water temperatures in the months March through May in the Russian River and in Dry Creek.	No Mitigation Required	Less than Significant
4.3-19. Changes in minimum instream flow could substantially affect the upstream migration of steelhead through elevated water temperatures in the months December through March in the Russian River and in Dry Creek.	No Mitigation Required	No Impact
4.3-20. Changes in minimum instream flow could substantially affect the spawning and egg incubation of steelhead through elevated water temperatures in the months December through May in the Russian River (above Cloverdale) and in Dry Creek.	No Mitigation Required	Less than Significant
4.3-21. Changes in minimum instream flow could substantially affect the rearing habitat for juvenile steelhead through elevated water temperatures in the months April through November in the Russian River (above Cloverdale) and in Dry Creek.	No Mitigation Required	Beneficial
4.3-22. Changes in minimum instream flow could substantially affect the emigrating steelhead smolts through elevated water temperatures in the months March through May in the Russian River and in Dry Creek.	No Mitigation Required	No Impact
4.3-23. Changes in minimum instream flow could substantially affect the upstream migration of Chinook salmon through reduced dissolved oxygen	No Mitigation Required	No Impact

Impact	Proposed Mitigation	Impact Significance
levels in the months October through December in the Russian River and in Dry Creek.		
4.3-24. Changes in minimum instream flow could substantially affect the habitat for rearing juvenile steelhead through reduced dissolved oxygen levels in the months April through November in the Russian River and in Dry Creek.	No Mitigation Required	No Impact
4.3-25. Changes in minimum instream flow could substantially affect the habitat for native warmwater species through reduced dissolved oxygen levels in the months April through November in the Russian River and in Dry Creek.	No Mitigation Required	No Impact
4.3-26. Changes in minimum instream flow could substantially affect quantity and quality of habitat for resident, rare or endangered species in the Upper Russian River under 1977 Drought Conditions.	No Mitigation Required	No Impact
4.3-27. Changes in minimum instream flow could substantially affect the habitat for spawning sunfish through increased reservoir releases at Lake Mendocino.	No Mitigation Required	Beneficial
4.3-28. Changes in minimum instream flow could substantially affect the habitat for spawning sunfish through increased reservoir releases at Lake Sonoma.	No Mitigation Required	Beneficial
4.3-29. Changes in minimum instream flow could substantially affect the quality of habitat for spawning steelhead by elevated water temperatures from January through mid-April at the Coyote Valley Egg Taking Station.	No Mitigation Required	No Impact
4.3-30. Changes in minimum instream flow could substantially affect the quality of habitat for steelhead smolts by elevated water temperatures from March through April at the Coyote Valley Egg Taking Station.	No Mitigation Required	No Impact
4.3-31. Changes in minimum instream flow could substantially affect the quality of habitat for spawning steelhead and egg incubation by	No Mitigation Required	No Impact

Impact	Proposed Mitigation	Impact Significance
elevated water temperatures from January through mid-April at the Don Clauson Fish Hatchery.		
4.3-32. Changes in minimum instream flow could substantially affect the quality of habitat for juvenile steelhead rearing at the Don Clauson Fish Hatchery by elevated water temperatures from April through November.	No Mitigation Required	No Impact
4.3-33. Changes in minimum instream flow could substantially affect the quality of habitat for steelhead smolts by elevated water temperatures from March through April at the Don Clauson Fish Hatchery.	No Mitigation Required	No Impact
4.3-34. Changes in minimum instream flow could substantially affect the quality of habitat for spawning coho salmon and egg incubation by elevated water temperatures from April through November at the Don Clauson Fish Hatchery.	No Mitigation Required	No Impact
4.3-35. Changes in minimum instream flow could substantially affect the quality of habitat for spawning coho salmon and egg incubation by elevated water temperatures from April through November at the Don Clauson Fish Hatchery.	No Mitigation Required	No Impact
4.3-36. Changes in minimum instream flow could substantially affect the quality of habitat for coho salmon smolts by elevated water temperatures from April through November at the Don Clauson Fish Hatchery.	No Mitigation Required	No Impact
4.3-37. Changes in minimum instream flow could substantially affect the habitat for native warmwater species in the Russian River.	No Mitigation Required	No Impact
4.3-38. Changes in minimum instream flow could substantially affect the habitat for spawning American shad in the Russian River.	No Mitigation Required	Less than Significant
4.3-39. Changes in minimum instream flow could substantially affect the habitat for smallmouth bass in the Russian River.	No Mitigation Required	No Impact
4.3-40. Changes in minimum instream flow could affect the frequency Estuary closures which could	No Mitigation Required	No Impact

Impact	Proposed Mitigation	Impact Significance
substantially interfere with the movement of adult salmonid.		
4.3-41. Changes in minimum instream flow could affect the frequency Estuary closures which could substantially interfere with the movement of salmonid smolts.	No Mitigation Required	No Impact
4.3-42. Changes in minimum instream flow could affect the frequency of Estuary closures which could substantially affect the quantity and quality of juvenile steelhead habitat and steelhead could become more susceptible to avian predation.	No Mitigation Required	No Impact
Vegetation and Wildlife		
4.4-1. Changes in water surface elevations and flows could adversely affect sensitive natural communities.	No Mitigation Required	Less than Significant
4.4-2. Changes in minimum instream flows could adversely affect federal and state jurisdictional waters.	No Mitigation Required	No Impact
4.4-3. Changes in water surface elevations could interfere with wildlife movement or impede the use of nursery sites.	No Mitigation Required	Less than Significant
4.4-4. Changes to minimum instream flows and water levels could adversely affect special-status plant and wildlife species.	No Mitigation Required	Less than Significant
Recreation		
4.5-1. Changes in releases from Lake Mendocino could result in low water surface elevations and substantially impact access to Lake Mendocino at the South Boat Ramp.	No Mitigation Required	No Impact
4.5-2. Changes in releases from Lake Mendocino could result in higher water surface elevations and substantially impact the operation of the South Boat Ramp, including closure of the South Boat Ramp parking lot, during the recreational season.	No Mitigation Required	No Impact

Impact	Proposed Mitigation	Impact Significance
4.5-3. Changes in releases from Lake Mendocino could result in low water surface elevations and substantially impact access to Lake Mendocino at the North Boat Ramp.	No Mitigation Required	No Impact
4.5-4. Changes in releases from Lake Mendocino could result in higher water surface elevations and substantially impact access to Lake Mendocino at the North Boat Ramp, including closure of the North Boat Ramp parking lot.	No Mitigation Required	No Impact
4.5-5. Changes in releases from Lake Mendocino could result in higher water surface elevations that could flood Inlet Road and substantially alter or inhibit access to Bushay Campground during the recreational season.	No Mitigation Required	Less than Significant
4.5-6. Changes in releases from Lake Mendocino could result in higher water surface elevations that could substantially alter or inhibit access to Kyen Campground during the recreational season.	No Mitigation Required	Less than Significant
4.5-7. Changes in releases from Lake Sonoma could result in low water surface elevations that could cause additional closures of the Yorty Creek Boat Ramp and could substantially alter or inhibit access to Lake Sonoma during the recreational season.	No Mitigation Required	No Impact
4.5-8. Changes in releases from Lake Sonoma could result in low water surface elevations that could substantially alter or inhibit access to the Lake Sonoma Marina during the recreational season.	No Mitigation Required	No Impact
4.5-9. Changes in releases from Lake Sonoma could result in low water surface elevations that could substantially alter or inhibit access to Lake Sonoma at the public boat ramp.	No Mitigation Required	No Impact
4.5-10. Changes in releases from Lake Sonoma could result in low water surface elevations that could substantially alter or inhibit access to Lake Sonoma's boat in campgrounds.	No Mitigation Required	No Impact

Impact	Proposed Mitigation	Impact Significance
4.5-11. Changes in releases from Lake Sonoma could result in high water surface elevations that could substantially alter or inhibit access to Lake Sonoma's boat in campgrounds.	No Mitigation Required	No Impact
4.5-12. Changes in minimum instream flows could result in impacts that substantially alter or inhibit access to recreational activities such as swimming and sunbathing in the Russian River.	No Mitigation Required	Less than Significant
4.5-13. Changes in minimum instream flows could result in impacts that substantially alter or inhibit access to recreational activities in the Russian River Estuary.	No Mitigation Required	No Impact
4.5-14. Changes in minimum instream flows could result in impacts that substantially alter or inhibit access to boating in the Russian River from Rio Lindo Academy to the confluence of Dry Creek.	No Mitigation Required	Less than Significant
4.5-15. Changes in minimum instream flows could result in impacts that substantially alter or inhibit access to boating in the Russian River from the mouth of Dry Creek to Wohler.	No Mitigation Required	No Impact
4.5-16. Changes in minimum instream flows could result in impacts that substantially alter or inhibit access to recreational facilities or activities such as boating in the Russian River from Wohler to the Pacific Ocean.	No Mitigation Required	Less than Significant
4.5-17. Changes in minimum instream flows related to the Proposed Project and the No Project 2 Alternatives could result in impacts that substantially alter or inhibit access for fishing in the Russian River.	No Mitigation Required	No Impact
4.5-18. Changes in minimum instream flows related to the No Project 1 Alternative could result in impacts that substantially alter or inhibit access to recreational facilities or activities such as fishing in the Russian River.	No Mitigation Required	Less than Significant

Impact	Proposed Mitigation	Impact Significance
4.5-19. Changes in minimum instream flow releases from Lake Sonoma could substantially alter or inhibit access to recreational facilities or activities in Dry Creek.	No Mitigation Required	No Impact
Energy		
4.6-1. The Fish Habitat Flows and Water Rights Project could substantially increase reliance on fossil fuels.	No Mitigation Required	Less than Significant
4.6-2. The Fish Habitat Flows and Water Rights Project could conflict with existing energy policies and standards intended to protect the environment.	No Mitigation Required	Less than Significant
4.6-3. The Fish Habitat Flows and Water Rights Project could conflict with or impede the Water Agency's ability to provide carbon-free water.	No Mitigation Required	No Impact
Cultural Resources		
4.7-1. Implementation of the Proposed Project could disturb any human remains or cause a substantial adverse change in the significance of a unique archaeological resource or a historical resource.	No Mitigation Required	No Impact
4.7-2. Implementation of the Proposed Project could impact the distribution of natural vegetation communities along the Russian River or Dry Creek, such that availability of culturally significant plants is reduced.	No Mitigation Required	No Impact
Greenhouse Gas Emissions and Climate Change		
4.8-1. The Fish Habitat Flows and Water Rights Project could result in a substantial increase in reservoir-generated GHG emissions.	No Mitigation Required	Less than Significant
4.8-2. The Fish Habitat Flows and Water Rights Project could substantially affect the City of Ukiah's ability to meet RPS requirements.	No Mitigation Required	Less than Significant
4.8-3. Climate change could alter Fish Habitat Flows and Water Rights Project operations, potentially resulting in indirect environmental effects.	No Mitigation Required	No Impact
Aesthetics		

Impact	Proposed Mitigation	Impact Significance
4.9-1. Implementation of the Proposed Project could have a substantial adverse effect on a scenic vista or degrade the visual character or quality of Lakes Mendocino and Sonoma and their surroundings.	No Mitigation Required	No Impact
4.9-2. Implementation of the Proposed Project could have a substantial adverse effect on a scenic vista or degrade the visual character or quality of the Upper Russian River and its surroundings.	No Mitigation Required	Less than Significant
4.9-3. Implementation of the No Project 1 Alternative could have a substantial adverse effect on a scenic vista or degrade the visual character or quality of the Upper Russian River and its surroundings.	No Mitigation Required	No Impact
4.9-4. Implementation of the Proposed Project could have a substantial adverse effect on a scenic vista or degrade the visual character or quality of the Lower Russian River and its surroundings.	No Mitigation Required	Less than Significant
4.9-5. Implementation of the Proposed Project could have substantial adverse effects on a scenic vista or degrade the visual character or quality of Dry Creek and its surroundings.	No Mitigation Required	No Impact
4.9-6. Implementation of the Proposed Project could substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	No Mitigation Required	No Impact
Public Services and Utilities		
4.10-1. Changes in minimum instream flow requirements could adversely affect the ability of water right permit holders to divert from the Russian River.	No Mitigation Available	Significant and Unavoidable



Impact	Proposed Mitigation	Impact Significance
4.10-2. Changes in instream flows could result in violations of wastewater discharge requirements.	No Mitigation Required	No Impact
Cumulative		
Impact 5.7.1-1. Implementation of the Fish Habitat Flows and Water Rights Project could substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level in the Upper Russian River in combination with Cumulative 1 through 4 Scenarios	No Mitigation Available	Cumulatively Significant and Unavoidable
Impact 5.7.1-2. Implementation of the Fish Habitat Flows and Water Rights Project could substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level in Dry Creek in combination with Cumulative 1 through 4 Scenarios.	No Mitigation Required	Cumulatively not Considerable
Impact 5.7.1-3. Implementation of the Fish Habitat Flows and Water Rights Project could substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level in the Lower Russian River in combination with Cumulative 1 through 4 Scenarios.	No Mitigation Required	Cumulatively Less than Significant)
Impact 5.7.1-4. Implementation of the Fish Habitat Flows and Water Rights Project could substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or sedimentation on- or off-site in the Upper Russian River in combination with the Cumulative 1 Scenario and the Cumulative 4 Scenario.	No Mitigation Available	Cumulatively Significant and Unavoidable

Impact	Proposed Mitigation	Impact Significance
Impact 5.7.1-5. Implementation of the Fish Habitat Flows and Water Rights Project could substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or sedimentation on- or off-site in the Upper Russian River in combination with Cumulative 2 Scenario and Cumulative 3 Scenario.	No Mitigation Required	Cumulatively Less than Significant
Impact 5.7.1-6. Implementation of the Fish Habitat Flows and Water Rights Project could substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or sedimentation on- or off-site in Dry Creek in combination with Cumulative 1 Scenario and the Cumulative 4 Scenario.	No Mitigation Available	Cumulatively Significant and Unavoidable
Impact 5.7.1-7. Implementation of the Fish Habitat Flows and Water Rights Project could substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or sedimentation on- or off-site in Dry Creek in combination with Cumulative 2 Scenario and the Cumulative 3 Scenario.	No Mitigation Required	Cumulatively Less than Significant
Impact 5.7.1-8. Implementation of the Fish Habitat Flows and Water Rights Project could substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or sedimentation on- or off-site in the Lower Russian River. in combination with the Cumulative 1 through 4 Scenarios.	No Mitigation Required	Cumulatively Less than Significant
Impact 5.7.1-9. Implementation of the Fish Habitat Flows and Water Rights Project could substantially alter the area of exposed shoreline within Lake	No Mitigation Required	Cumulatively Less than Significant



Impact	Proposed Mitigation	Impact Significance
Sonoma in a manner which would result in substantial erosion or sedimentation on-or off-site in combination with Cumulative 1 through 4 Scenarios.		
Impact 5.7.1-10. Implementation of the Fish Habitat Flows and Water Rights Project could contribute to inundation by seiche, tsunami, or mudflow in the Russian River Estuary in combination with Cumulative 1 through 4 Scenarios.	No Mitigation Available	Cumulatively Significant and Unavoidable
Impact 5.7.2-1. Implementation of the Fish Habitat Flows and Water Rights Project could result in a violation of water quality standards or waste discharge requirements or otherwise substantially degrade water quality relating to mercury accumulation in fish tissue in Lake Sonoma in combination with Cumulative 1 through 4 Scenarios.	No Mitigation Required	Cumulatively Less than Significant
Impact 5.7.2-2. Implementation of the Fish Habitat Flows and Water Rights Project could result in a violation of water quality standards or waste discharge requirements or otherwise substantially degrade water quality as it relates to aluminum and specific conductance in the Upper Russian River in combination Cumulative 1 through 4 Scenarios.	No Mitigation Available	Cumulatively Significant and Unavoidable
Impact 5.7.2-3. Implementation of the Fish Habitat Flows and Water Rights Project could result in a violation of water quality standards or waste discharge requirements or otherwise substantially degrade water quality as it relates to aluminum and specific conductance in the Upper Russian River in combination with the Cumulative 2 Scenario and Cumulative 3 Scenario.	No Mitigation Required	Cumulatively Less than Significant
Impact 5.7.2-4. Implementation of the Fish Habitat Flows and Water Rights Project could result in a violation water quality standards or waste discharge requirements or otherwise substantially degrade water quality as it relates to aluminum in	No Mitigation Required	Cumulatively Less than Significant

Impact	Proposed Mitigation	Impact Significance
the Lower Russian River in combination with Cumulative 1 through 4.		
Impact 5.7.2-5. Implementation of the Fish Habitat Flows and Water Rights Project changes to minimum instream flows could result in a violation of water quality standards or waste discharge requirements or otherwise degrade water quality relating to biostimulatory substances in the Upper and Lower Russian River in combination with Cumulative 1 through 4 Scenarios.	No Mitigation Available	Cumulatively Significant and Unavoidable
Impact 5.7.3-1. Implementation of the Fish Habitat Instream Flows and Water Rights Project could result in changes in minimum instream flow that could substantially effect the quality of habitat for rearing Chinook juveniles by elevated water temperatures from April through June in the Russian River and in Dry Creek in combination with Cumulative 1 through 4 Scenarios.	No Mitigation Required	Cumulatively not Considerable
Impact 5.7.3-2 Implementation of the Fish Habitat Instream Flows and Water Rights Project could result in changes in minimum instream flow that could substantially affect emigrating coho salmon through elevated water temperatures in the months of March through May in the Lower Russian River and in Dry Creek in combination with Cumulative 1 through 4 Scenarios.	No Mitigation Required	Cumulatively not Considerable
Impact 5.7.3-3. Implementation of the Fish Habitat Instream Flows and Water Rights Project could result in changes in minimum instream flow that could substantially affect the spawning and egg incubation of steelhead through elevated water temperatures in the months of December through	No Mitigation Required	Cumulatively not Considerable



Impact	Proposed Mitigation	Impact Significance
May in the Russian River (above Cloverdale) and in Dry Creek in combination with Cumulative 1 through 4 Scenarios.		
Impact 5.7.3-4. Implementation of the Fish Habitat Instream Flows and Water Rights Project could result in changes in minimum instream flow that could substantially affect the habitat for spawning American shad in the Russian River in combination with Cumulative 1 Scenario and the Cumulative 4 Scenario.	No Mitigation Required	Cumulatively Less than significant
Impact 5.7.3-5. Implementation of the Fish Habitat Instream Flows and Water Rights Project could result in changes in minimum instream flow that could substantially effect the habitat for spawning American shad in the Russian River in combination with the Cumulative 2 Scenario and Cumulative 3 Scenario.	No Mitigation Required	Cumulatively not Considerable
Impact 5.7.4-1. Implementation of the Fish Habitat Instream Flows and Water Rights Project could result in changes in water surface elevations and flows that could adversely affect sensitive natural communities in combination with Cumulative 1 through 4 Scenarios.	No Mitigation Required	Cumulatively Less than Significant
Impact 5.7.4.-2. Implementation of the Fish Habitat Instream Flows and Water Rights Project could result in changes in water surface elevations the could impede the use of nursery sites in combination with Cumulative 1 through 4 Scenarios.	No Mitigation Required	Cumulatively Less than Significant
Impact 5.7.4.-3. Implementation of the Fish Habitat Instream Flows and Water Rights Project could result in changes to minimum instream flows and water levels that could adversely affect special-status wildlife species in combination with Cumulative 1 through 4 Scenarios.	No Mitigation Required	Cumulatively Less than Significant
Impact 5.7.5-1. Implementation of the Fish Habitat Instream Flows and Water Rights Project could result in changes in releases from Lake Mendocino	No Mitigation Required	Cumulatively not Considerable

Impact	Proposed Mitigation	Impact Significance
that could result in higher water surface elevations that could inundate Inlet Road and substantially alter or inhibit access to Bushay Campground during the recreational season in combination with the No Potter Valley Project (Cumulative 1 through 4 Scenarios.		
Impact 5.7.5-2. Implementation of the Fish Habitat Instream Flows and Water Rights Project could result in changes in releases from Lake Mendocino could result in higher water surface elevations that could substantially alter or inhibit access to Kyen Campground during the recreational season in combination with Cumulative 1 through 4 Scenarios.	No Mitigation Required	Cumulatively not Considerable
Impact 5.7.5-3. Implementation of the Fish Habitat Instream Flows and Water Rights Project could result in changes in minimum instream flows that could result in impacts that substantially alter or inhibit access to recreational activities such as swimming and sunbathing in the Upper Russian River in combination with the Cumulative 1 Scenario and the Cumulative 4 Scenario.	No Mitigation Available	Cumulatively Significant and Unavoidable
Impact 5.7.5-4. Implementation of the Fish Habitat Instream Flows and Water Rights Project could result in changes in minimum instream flows that could result in impacts that substantially alter or inhibit access to recreational activities such as swimming and sunbathing in the Upper Russian River in combination with the Cumulative 2 Scenario and the Cumulative 3 Scenario.	No Mitigation Required	Cumulatively not Considerable
Impact 5.7.5-5. Implementation of the Fish Habitat Instream Flows and Water Rights Project could result in changes in minimum instream flows that could result in impacts that substantially alter or inhibit access to boating in the Upper Russian River from Rio Lindo Academy to the Confluence	No Mitigation Available	Cumulatively Significant and Unavoidable



Impact	Proposed Mitigation	Impact Significance
of Dry Creek in combination with the Cumulative 1 Scenario and the Cumulative 4 Scenario.		
Impact 5.7.5-6. Implementation of the Fish Habitat Instream Flows and Water Rights Project could result in changes in minimum instream flows that could result in impacts that substantially alter or inhibit access to boating in the Upper Russian River from Rio Lindo Academy to the Confluence of Dry Creek in combination with the Cumulative 2 Scenario and the Cumulative 3 Scenario.	No Mitigation Required	Cumulatively Less than Significant
Impact 5.7.5-7. Implementation of the Fish Habitat Instream Flows and Water Rights Project could result in changes in minimum instream flows that could result in impacts that substantially alter or inhibit access to recreational facilities or activities such as boating in the Russian River from Wohler to the Pacific Ocean in combination with the Cumulative 1 Scenario and the Cumulative 4 Scenario.	No Mitigation Available	Cumulatively Significant and Unavoidable
Impact 5.7.5-8. Implementation of the Fish Habitat Instream Flows and Water Rights Project could result in changes in minimum instream flows that could result in impacts that substantially alter or inhibit access to recreational facilities or activities such as boating in the Russian River from Wohler to the Pacific Ocean in combination with the Cumulative 2 Scenario and the Cumulative 3 Scenario.	No Mitigation Required	Cumulatively Less than Significant
Impact 5.7.6-1: Implementation of the Fish Habitat Flows and Water Rights Project could substantially increase reliance on fossil fuels in combination with the Cumulative 1 Scenario), Cumulative 3 Scenario, and Cumulative 4 Scenario.	No Mitigation Required	Cumulatively Less than Significant



Impact	Proposed Mitigation	Impact Significance
Impact 5.7.6-2: Implementation of the Fish Habitat Flows and Water Rights Project could conflict with existing energy policies and standards intended to protect the environment in combination with the Cumulative 1 Scenario, Cumulative 3 Scenario, and Cumulative 4 Scenario.	No Mitigation Required	Cumulatively Less than Significant
Impact 5.7.7-1: Implementation of the Fish Habitat Flows and Water Rights Project could result in an increase in reservoir-generated greenhouse gas emissions in combination with the Cumulative 1 through 4 Scenarios.	No Mitigation Required	Cumulatively Less than Significant
Impact 5.7.7-2: Implementation of the Fish Habitat Flows and Water Rights Project could substantially affect the City of Ukiah's ability to meet State of California's Renewables Portfolio Standard requirements in combination with the Cumulative 1 through 4 Scenarios	No Mitigation Required	Cumulatively Less than Significant
Impact 5.7.8-1: Implementation of the Fish Habitat Flows and Water Rights Project could have a substantial adverse effect on a scenic vista or degrade the visual character or quality of the Upper Russian River and its surroundings from June through October in combination with the Cumulative 1 Scenario and the Cumulative 4 Scenario.	No Mitigation Available	Cumulatively Significant and Unavoidable
Impact 5.7.8-2: Implementation of the Fish Habitat Flows and Water Rights Project could have a substantial adverse effect on a scenic vista or degrade the visual character or quality of the Upper Russian River and its surroundings from June through October in combination with Cumulative 2 Scenario and the Cumulative 3 Scenario.	No Mitigation Required	Cumulatively not Considerable



Impact	Proposed Mitigation	Impact Significance
Impact 5.7.8-3. Implementation of the Fish Habitat Flows and Water Rights Project could have a substantial adverse effect on a scenic vista or degrade the visual character or quality of the Lower Russian River and its surroundings during June and July in combination with the Cumulative 1 through 4 Scenarios.	No Mitigation Required	Cumulatively not Considerable
Impact 5.7.8-4. Implementation of the Fish Habitat Flows and Water Rights Project could have a substantial adverse effect on a scenic vista or degrade the visual character or quality of the Lower Russian River and its surroundings from August through October in combination with the Cumulative 1 Scenario and the Cumulative 4 Scenario.	No Mitigation Available	Cumulatively Significant and Unavoidable
Impact 5.7.8-5. Implementation of the Fish Habitat Flows and Water Rights Project could have a substantial adverse effect on a scenic vista or degrade the visual character or quality of the Lower Russian River and its surroundings from August through October in combination with the Cumulative 2 Scenario and the Cumulative 3 Scenario.	No Mitigation Required	Cumulatively not Considerable
Impact 5.7.9-1. Changes in minimum instream flow requirements could adversely affect when water right permit holders may divert water from the Russian River while complying with the minimum bypass flow terms in their water right permits in combination with the (Cumulative 1 through 4 Scenarios.	No Mitigation Available	Cumulatively Significant and Unavoidable



CHAPTER 2 Introduction

The Sonoma County Water Agency (Water Agency) has prepared this Draft Environmental Impact Report (Draft EIR) for the Fish Habitat Flows and Water Rights Project (Fish Flow Project). This Draft Environmental Impact Report will be referred to throughout this document as the Draft EIR. The Draft EIR has been prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000-21177), the State CEQA Guidelines (CCR, Title 24, Division 6, Chapter 3, Sections 15000-15387), and the Water Agency's Procedures for the Implementation of the California Environmental Quality Act. The Water Agency is the lead agency for consideration of this EIR and potential project approval. CCR Section 15367 defines the lead agency as the agency with principal responsibility for carrying out or approving a project.

2.1 Purpose and Intended Uses of the Draft EIR

CEQA requires preparation of an EIR when a proposed project may have a significant impact on the environment (CCR Section 15064). "An EIR is an informational document which will inform public agency decision makers and the public generally of the significant environmental impacts of the proposed project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project" (CCR Section 15121). The basic informational requirements for an EIR include discussions of the purpose and need for the project, identification and analysis of project alternatives, environmental setting, environmental impacts, and proposed mitigation measures. This Draft EIR evaluates and discloses the environmental impacts of the proposed project and its alternatives. Where possible, mitigation measures are proposed to avoid or reduce project impacts.

This document is a project-level EIR. A project-level EIR is defined as "the most common type of EIR that examines the environmental impacts of a specific development project" (CCR Section 15161).

2.2 Agency Roles and Responsibilities

Public agencies are required to consider the information presented in an EIR when determining whether to approve a project. This EIR will be used by the lead agency and other responsible agencies to evaluate environmental impacts of the proposed project and make a decision of approval for the project.

Lead Agency

The Water Agency is the lead agency under CEQA. The Water Agency's Board of Directors has the principal responsibility for carrying out or approving the project. As the decision-making entity of the lead agency for the Fish Flow Project, the Water Agency's Board of Directors will be responsible for considering certification of the EIR and approval of the proposed project. Prior to project approval, the Water Agency's Board of Directors will consider certification of the EIR. Upon completion and certification of this EIR, the Water Agency will use this document to make

written findings, adopt a Statement of Overriding Considerations, if necessary, and file a Notice of Determination (NOD).

Responsible and Trustee Agencies

CEQA defines a responsible agency as a public agency, other than the lead agency, which has responsibility for carrying out or approving a project (PRC Section 21069). A trustee agency is a state agency that has jurisdiction by law over natural resources affected by a project, that are held in trust for the people of the State of California (PRC Section 21070). Trustee agencies include the California Department of Fish and Game (CDFW), State Lands Commission (SLC), State Department of Parks and Recreation (State Parks), and the University of California (CCR Section 15386).

The Fish Flow Project should be consistent with, but not limited to, the following: Federal Endangered Species Act; California Endangered Species Act; State Water Resources Control Board's Policy for Maintaining Instream Flows in Northern California Coastal Streams; North Coast Regional Water Quality Control Board Basin Plan; Mendocino County General Plan; Sonoma County General Plan; the Water Agency's agreement with the U.S. Army Corps of Engineers (USACE) for storage of water at Lake Mendocino; the Water Agency's agreement with the USACE for storage of water at Lake Sonoma; and the U.S. Federal Energy Regulatory Commission (FERC) order issuing license (major) for Warm Springs Dam hydroelectric project-FERC Project No. 3351-002 (1984). The Water Agency would also need to comply with the terms of any new permits associated with the proposed Fish Flow Project. The following list of the agencies may have responsibility for or jurisdiction over, over portions of the Fish Flow Project. Included in the list are potential permit and other approvals that may be required before implementation of the Fish Flow Project.

Federal

Federal agencies are not responsible agencies under CEQA. However, federal agencies may use information provided in an EIR in preparation of their compliance with permitting requirements.

- The U.S. National Marine Fisheries Service (NMFS) administers the federal Endangered Species Act, Magnuson-Stevens Fishery Conservation and Management Act, and Marine Mammal Protection Act as they pertain to marine species. It also advises USACE on Section 10 of the Rivers and Harbors Act of 1899 (Section 10) and Section 404 of the Clean Water Act (Section 404) permits with regards to projects that may affect species and their critical habitat that may anadromous fish spawning or habitat. NMFS issued a biological opinion under Section 7 of the federal ESA to the USACE and the Water Agency. The Fish Flow Project was developed to comply with the biological opinion.
- The U.S. Fish and Wildlife Service (USFWS) administers the federal Endangered Species Act, and the Marine Mammal Protection Act. The Fish and Wildlife Service also advises the USACE on Section 10 or Section 404 permits for projects that affect fish and wildlife.

- The USACE regulates activities in waters of the United States under Section 10 of the Rivers and Harbors Act of 1899, and Section 404 of the Clean Water Act ("Section 10" and "Section 404" permits).
- The U.S. Federal Energy Regulatory Commission regulates permits for hydroelectric facilities. The FERC would be responsible for determining whether proposed minimum instream flow requirement changes that result in changed releases from Warm Springs Dam as a result of the Fish Flow Project would be in compliance with the Water Agency's existing license for the operation and maintenance of the Warm Springs Dam Hydroelectric Project.

State

- CDFW is responsible for protecting plant and wildlife populations, and is responsible for overseeing the California Endangered Species Act (CESA). CDFW issued a consistency determination under CESA for the biological opinion issued by NMFS. The Fish Flow Project was developed to comply with the biological opinion and the consistency determination. CDFW also prepares streambed alteration agreements for all projects that may alter any river, stream or lake.
- The State Water Resources Control Board (SWRCB) is responsible for approving any modification in water right permits or issuing new water right permits. The Fish Flow Project would require the SWRCB's approval of proposed changes to the Water Agency's water right permits. In addition, the Division of Drinking Water within the SWRCB issues permits for public water supply systems.
- The North Coast Regional Water Quality Control Board (NCRWQCB) is responsible for approving projects that may affect the water quality of waterways in the project area, through the issuance of waste discharge requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permits.
- California State Office of Historic Preservation oversees compliance with Section 106 of the National Historic Preservation Act.

Local

- The Mendocino County Planning and Building Services reviews projects for consistency with the Mendocino County General Plan, pursuant to Section 65402 of the California Government Code.
- The Sonoma County Permit and Resources Management Department (PRMD) reviews projects for Sonoma County General Plan consistency, pursuant to Section 65402 of the California Government Code.

2.3 Environmental Review Process

Notice of Preparation

In accordance with PRC Section 21092 and CCR Section 15082, on September 29, 2010, the Water Agency released a Notice of Preparation (NOP) to notify agencies and the public that an EIR was being prepared and to request comments on the scope and content of the EIR. The

NOP is included as Appendix A. The NOP was submitted to: the State Clearinghouse; to public agencies, including responsible and trustee agencies, interested parties and organizations, and individuals who had requested to be put on the Fish Flow Project mailing list. The NOP also was available at the Water Agency's administrative office at 404 Aviation Boulevard in Santa Rosa, at the public scoping meetings and on the Water Agency's website (www.sonomacountywater.org).

A 30-day public review period was established beginning September 29, 2010, and ending November 15, 2010. Three noticed public scoping meetings were held during the review period to inform the public about the proposed project and to receive input from the public. These meetings were held November 4, 2010, in Monte Rio, November 8, 2010, in Windsor, and November 10, 2010, in Ukiah. A report summarizing the scoping meetings, including the number of attendees, reference materials and comments received, is included as Appendix A.

Public Review of the Draft EIR

This Draft EIR contains a copy of the NOP and the Scoping Report, which provides a summary of all verbal and written comments received, and copies of the written comments are included in Appendix A. These comments were considered during the preparation of the Draft EIR. Preparation of the Draft EIR also included consultation with experts including hydrologists, engineers, fisheries and wildlife biologists, botanists, and cultural resource specialists.

This Draft EIR is being released for a 60-day public review period from August 19 to October 17, 2016. Workshops and public hearings will be advertised in local newspapers, by direct mail, and on the Water Agency's website (www.sonomacountywater.org). Two informational public workshops will be held on August 22, 2016, in Cloverdale and August 24 in Monte Rio. A public hearing will be held on September 13, 2016, at 3 pm at the Sonoma County Board of Supervisors Chambers in Santa Rosa to receive input from agencies and the public on the Draft EIR.

Copies of the EIR will be provided to responsible or trustee agencies. A Notice of Availability for the Draft EIR will be mailed to individuals who had requested to be put on the Fish Flow Project mailing list.

Written comments on the Draft EIR may be submitted at any time during the review period to the Water Agency. Oral comments may be made at the public hearing. Written comments shall be submitted no later than 5 pm on October 17, 2016. Public agencies should provide the name of a contact person, phone number, and email address. Comments provided electronically should include the name and physical address of the commenter. Please send all written comments to:

Sonoma County Water Agency
404 Aviation Blvd.
Santa Rosa, CA 95403
Jessica Martini-Lamb, Environmental Resources Manager
Email: fishflow-eir@scwa.ca.gov

The Draft EIR is available for review online at: www.sonomacountywater.org.

Copies of the Draft EIR will be available for public review during regular business hours at the following locations:

Sonoma County Water Agency
404 Aviation Blvd.
Santa Rosa, CA 95403

Windsor Regional Library
9291 Old Redwood Highway, Building 100
Windsor, CA 95492

Mendocino County Library
105 N. Main St.
Ukiah, CA 95482

Central Santa Rosa Library
211 E Street
Santa Rosa, CA 95404

Cloverdale Regional Library
401 N. Cloverdale Blvd.
Cloverdale, CA 95425

Guerneville Regional Library
14107 Armstrong Woods Rd.
Guerneville, CA 95446

Healdsburg Regional Library
139 Piper Street
Healdsburg, CA 95448

Final EIR

Before approving a project, the lead agency must prepare a Final Environmental Impact Report (Final EIR). Upon completion of the public review period for the Draft EIR, the Water Agency will review all comments received and prepare responses to each comment. The Response to Comments document and any revisions made to the Draft EIR will constitute the Final EIR for the project. Upon completion of the Final EIR, the Water Agency's Board of Directors will consider certification of the EIR and approval of the Fish Flow Project. Before considering project approval, the Water Agency's Board of Directors, as lead agency, is required to certify that the EIR has been completed in compliance with CEQA, that the decision-making body reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the lead agency.

2.4 Organization of the Draft EIR

This Draft EIR includes the following principal sections: Summary; Introduction; Background and Project Description; Environmental Setting, Impacts and Mitigation Measures; Cumulative, Other Statutory Requirements; Alternatives; List of Preparers; and Bibliography. Footnotes are presented throughout several of the chapters. Footnotes, indicated as lower-case letters, are used to provide additional information where needed or to provide a reference, if necessary. Footnotes are presented at the bottom of the page. Citations are provided within the text and the associated reference is provided at the end of each chapter as appropriate.

Chapter 1, **Summary**, presents a summary of the Fish Flow Project, significant environmental impacts and mitigation measures. A summary of alternatives to the Fish Flow Project is included. Areas of known controversy and issues to be resolved are described. This chapter also includes a table of significant environmental impacts and mitigation measures.

Chapter 2, **Introduction**, discusses the purpose and intended uses of the Draft EIR, agency roles and responsibilities, environmental review process, and organization of this Draft EIR.

Chapter 3, **Background and Project Description**, provides background information necessary for the reader to understand the Fish Flow Project. This chapter describes the project location, Water Agency's purpose as set forth by the state legislature, existing flood management and water supply operations in the project area, legal obligations, water contractors and other customers, water rights, water policy, Urban Water Management Plan, water conservation and education programs, and other water-supply related activities.

This chapter also discusses the project objective, purpose and need for the project, and describes the proposed project. This chapter also discusses the proposed schedule for the project and project approvals.

Chapter 4, **Environmental Setting, Impacts and Mitigation Measures**, is divided into resource sections, which discuss the following resource categories that are listed in order in which they appear in Chapter 4: Hydrology; Water Quality; Fisheries Resources; Vegetation and Wildlife; Recreation; Energy; Greenhouse Gas Emissions and Climate Change; Cultural Resources; Aesthetics, and Public Services and Utilities. The resource sections evaluate the potential environmental impacts resulting from the Fish Flow Project. Each section provides the existing environmental setting, regulatory framework, impact analysis methodology, significance criteria, and the analysis of potential impacts. Impacts are numbered sequentially; any required mitigation measures are described and numbered to correspond with the impact number. References are included at the end of each resource section.

Chapter 5, **Cumulative**, provides an analysis of the cumulative impacts that may result from the implementation of the proposed project together with other past, present, and future projects.

Chapter 6, **Other Statutory Requirements**, includes a discussion of direct and indirect growth-inducing impacts and significant irreversible environmental changes that could be caused from the implementation of the proposed project.

Chapter 7, **Alternatives**, identifies alternatives to the proposed project that may reduce one or more environmental impacts of the project, including the No Project alternatives, alternatives considered but not analyzed in detail, and the environmentally superior alternative. The chapter discusses how alternatives were evaluated, and provides sufficient detail to allow for a comparison of impacts between alternatives and the proposed project.

Chapter 8, **List of Preparers**, includes a list of lead agency contacts and the preparers of the Draft EIR.

Chapter 9, **Bibliography**, includes a list of documents used in the preparation of the Draft EIR.

Effects Determined Not to be Significant and Not Discussed Further

CEQA and the CEQA Guidelines allow a lead agency to dismiss environmental effects that are not significant or potentially significant from detailed discussion in an EIR (PRC Section 21100, CCR Sections 15126.2[a] and 15128). For effects dismissed as clearly less than significant and not discussed further, the CEQA Guidelines require a brief explanation of the reasons supporting that determination.

Based on a review of the project description and research and analysis of potential environmental effects during preparation of this Draft EIR, it has been determined that the following resource categories would not result in significant environmental impacts from the project. Accordingly, these resources are not addressed further in this Draft EIR. Further discussion is provided in Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, regarding the reasons why significant impacts to each resource would not occur.

- ▲ Air Quality
- ▲ Agricultural Resources
- ▲ Geology, Soils, and Mineral Resources
- ▲ Hazards and Hazardous Materials
- ▲ Land Use and Planning
- ▲ Noise
- ▲ Population and Housing
- ▲ Traffic and Transportation

CHAPTER 3 Background and Project Description

3.1 Introduction

The Sonoma County Water Agency (Water Agency) operates Lake Mendocino and Lake Sonoma by collecting water to storage in the reservoirs' water-supply pools when water is available for collection, and by releasing water stored in these reservoirs to supplement natural flows as necessary to maintain the minimum instream flow requirements for the Russian River and Dry Creek established in the Water Agency's water right permits by the State Water Resources Control Board's (SWRCB)¹ Decision 1610, to meet the demands for diversions into the Water Agency's water transmission system and to meet the needs of other Russian River water users. The Water Agency's transmission system provides water to several municipal water suppliers, which deliver the water to their customers for residential, governmental, commercial, and industrial purposes.

The Fish Habitat Flows and Water Rights Project (Fish Flow Project) would change the minimum instream flow requirements in the Water Agency's water right permits in a manner that will improve rearing habitats for threatened and endangered salmon, as required by the National Marine Fisheries Service's (NMFS) Russian River Biological Opinion (Russian River Biological Opinion) and California Department of Fish and Wildlife's² (CDFW) Consistency Determination, add some additional authorized points of diversion, extend the deadlines for applying water to full beneficial use, and update the Water Agency's existing water rights to reflect current conditions. The Fish Flow Project is described in this chapter.³ Chapter 1, "Introduction," provides a discussion of the intended uses of this Environmental Impact Report (EIR), including a list of agencies expected to use the EIR and list of approvals for which the EIR is anticipated to be used.

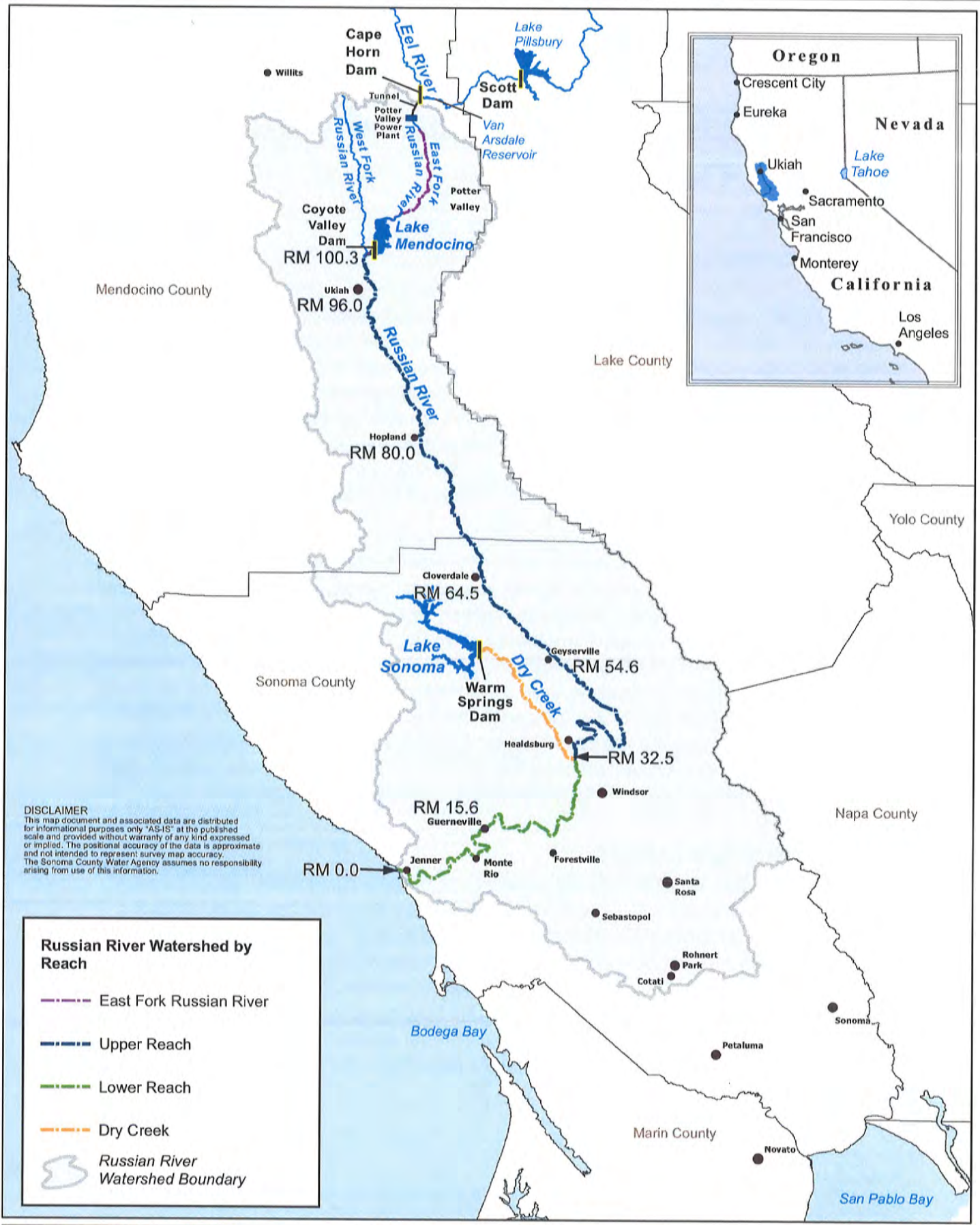
3.2 Project Location

The Fish Flow Project would change the Water Agency's water right permits, which concern minimum instream flows in and diversions from the Russian River and Dry Creek, which are located in Mendocino County and Sonoma County, California. A regional location map is included as Figure 3-1. The Russian River watershed drains an area of 1,485 square miles that includes substantial portions of Sonoma and Mendocino counties. The headwaters of the West Fork Russian River are located in central Mendocino County, approximately 15 miles north of Ukiah. The Russian River is approximately 110 miles long and runs generally southward to Forestville, where the channel's direction changes westward to the Pacific Ocean near Jenner, approximately 20

¹ In this EIR, "SWRCB" refers to both the State Water Resources Control Board and its predecessor agencies.

² California Department of Fish and Wildlife (CDFW) was formerly the California Department of Fish and Game (CDFG).

³ Refer to CEQA Guidelines Section 15124 for detailed requirements of an EIR's Project Description.



Fish Habitat Flows and Water Rights Project

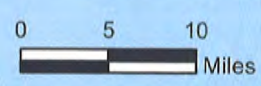


Figure 3-1

miles west of Santa Rosa. Potential environmental impacts of the Fish Flow Project could occur at Lake Mendocino and Lake Sonoma, in and along the Russian River downstream of Coyote Valley Dam to Pacific Ocean, in and along Dry Creek downstream of Warm Springs Dam, and in the Water Agency's or its contractors' service areas in Sonoma and Marin counties.

3.3 Background

The Water Agency was created in 1949 by the California Legislature as a special district to provide flood protection and water supply services. The members of the Sonoma County Board of Supervisors are the Water Agency's Board of Directors. The Water Agency's powers and duties authorized by the California Legislature include the production and supply of surface water and groundwater for beneficial uses, control of flood waters, generation of electricity, provision of recreational facilities (in connection with the Water Agency's facilities), and the treatment and disposal of wastewater.

The Water Agency provides wholesale, potable water for approximately 600,000 people in Sonoma and Marin counties by supplying water to its water contractors and other water transmission system customers. The Water Agency's water contractors are the Cities of Santa Rosa, Petaluma, Rohnert Park, Cotati, and Sonoma, the Town of Windsor, and the North Marin and Valley of the Moon Water Districts. Other water transmission system customers include the Marin Municipal Water District, Forestville Water District, California-American Water Company (which provides water service in the Larkfield-Wikiup area), Kenwood Village Water Company, Lawndale Mutual Water Company, Penngrove Water Company, the County of Sonoma, the State of California, and Santa Rosa Junior College. The Water Agency supplies small quantities of water, when available, from its transmission system to several surplus water customers. The Water Agency also has agreements with other entities, known as Russian River Customers, which authorize them to divert⁴ water from the Russian River under the Water Agency's water rights using their own facilities. The Russian River Customers are the City of Healdsburg, Camp Meeker Recreation and Park District,⁵ and the Town of Windsor/Windsor Water District. Russian River Customers typically divert under their own water rights, but may divert under the Water Agency's water rights when required diversions are not authorized under their own water rights.

The Water Agency is the local sponsor for the two federal water supply and flood control reservoirs in the Russian River watershed. Coyote Valley Dam at Lake Mendocino is located on the East Fork of the Russian River near the City of Ukiah in Mendocino County (Figure 3-1). Warm Springs Dam at Lake Sonoma on Dry Creek is located near the City of Healdsburg in Sonoma County (Figure 3-1). The Water Agency, as local sponsor, partially financed the construction of Coyote Valley and Warm Springs dams under agreements with the U.S. Army Corps of Engineers (USACE). The Water Agency manages water supply storage within Lake Mendocino and Lake Sonoma to optimize the water supply yields of the reservoirs, and the

⁴ "Divert" means the act of removing water from streamflows for beneficial uses. "Directly divert" means to divert water that is flowing in the stream and is not derived from upstream releases of stored water. "Re-divert" means to divert water that is flowing in the stream and is derived from upstream releases of stored water or upstream imports. "Collection to storage" means to divert or re-divert water flowing in a stream into storage in a reservoir.

⁵ The Water Agency has a water supply agreement with Occidental Community Services District, but it is not yet effective. Occidental Community Services District currently diverts under Camp Meeker Recreation and Park District's agreement.

Water Agency controls releases from the water supply pools⁶ of both reservoirs to maintain required minimum instream flows in the Russian River and Dry Creek and to meet the diversion demands of the Water Agency and other Russian River water users. Pacific Gas and Electric Company's (PG&E) Potter Valley Hydroelectric Project (PVP), which includes Lake Pillsbury, diverts water from the Eel River watershed into the Russian River watershed, and some of this water flows into Lake Mendocino. The USACE manages flood control operations at Lake Mendocino and Lake Sonoma.

The Water Agency does not divert any water from the Russian River between Lake Mendocino and the Russian River's confluence with Dry Creek, but it does authorize diversions by the City of Healdsburg in this reach under the Water Agency's water right permits. The Water Agency diverts water from the Russian River at its Wohler and Mirabel diversion facilities near Forestville and conveys the water via its water transmission system to its customers.

3.3.1 Lake Pillsbury and Potter Valley Project

PG&E's PVP was constructed in 1908 for power generation purposes. Water is collected to storage in Lake Pillsbury, a reservoir created by the Scott Dam on the Eel River. Natural flows of Eel River water and water released from Lake Pillsbury storage are diverted 12 miles downstream from Scott Dam at Cape Horn Dam and then are conveyed through a diversion tunnel and penstocks to the Potter Valley Powerhouse, which is located in the Russian River watershed. Some of the water discharged from the powerhouse is diverted into canals from which the Potter Valley Irrigation District (PVID) receives water under a water supply agreement with PG&E and its own appropriative water rights license. The remaining water discharged from the powerhouse not consumptively used by PVID flows down the East Fork Russian River into Lake Mendocino. The PVP has a maximum flow capacity of approximately 300 cubic feet per second (cfs) and a generation capacity of 9.4 megawatts (MW). PVP diversions and operations are regulated by a license issued to PG&E by the Federal Energy Regulatory Commission (FERC) and serve multiple purposes, including power generation, Potter Valley agricultural irrigation uses, and minimum instream flow releases into the East Fork Russian River. The PVID has a water supply contract with PG&E to receive up to 50 cfs of flows from the PVP.

PG&E manages releases from Lake Pillsbury to meet FERC-required minimum release requirements in the Eel River and to provide water for diversions to the PVP powerhouse. Between 1922 and 1992, diversions from the Eel River through the PVP averaged greater than 150,000 acre-feet annually. It was during this period that the Coyote Valley Dam/Lake Mendocino project was designed, the Water Control Manual for Lake Mendocino was developed, and the SWRCB adopted water rights Decision 1610. PG&E does not manage or coordinate the operation of PVP with the USACE or Water Agency's operations of Lake Mendocino. However, the historical importance of water from the PVP to Lake Mendocino water supplies is demonstrated by the fact that the SWRCB's Decision 1610, which adopted several terms now in the Water Agency's water right permits, established a hydrologic index for the

⁶ The water supply pools in Lake Mendocino and Lake Sonoma are sometimes referred to a "water conservation pools."

Russian River and Dry Creek minimum instream flow requirements in these permits that is based on cumulative inflows into Lake Pillsbury.

Following a 10-year FERC-required study, PG&E applied to FERC for an amendment to its PVP license in 1998, requesting to change the required minimum instream flows in the Eel River to benefit Eel River salmon species listed as threatened species under the federal Endangered Species Act. FERC prepared an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA), which evaluated the potential environmental impacts of various PVP flow proposals on environmental conditions in the Eel River and Russian River watersheds. In 2002, NMFS issued a Biological Opinion under the federal Endangered Species Act for the proposed license amendment. FERC amended PG&E's license in 2004 to require implementation of the "reasonable and prudent alternatives" and "reasonable and prudent measures" that the Biological Opinion stated were necessary to avoid jeopardizing the continued existence of the ESA-listed salmon species in the Eel River watershed. At the time, FERC believed that the differences between the Biological Opinion conditions and an earlier flow proposal by NMFS that had been evaluated in the EIS for the PVP were "modest differences... not likely to result in any material difference in the environmental effects" (FERC Order on Rehearing, 107 FERC Section 61,232, Para.22). PG&E began operation of the PVP in accordance with its amended FERC license in 2006, and these new operations substantially reduced the amounts of PVP diversions compared to historical levels.⁷ Annual PVP diversions now average about 72,000 acre-feet, less than half the 1922-1992 average (SCWA 2015). These reductions have resulted in much lower inflows into Lake Mendocino from the East Fork Russian River than analyzed by the Biological Opinion or the EIS. Changes in the seasonal timings of PVP diversions have also affected Lake Mendocino water storage reliability. Reduced inflows in the spring have contributed to declining water supply reliability of Lake Mendocino through the summer months (SCWA 2015). As a result, the Water Agency has had to file several Temporary Urgency Change Petitions (TUCP) with the SWRCB to temporarily reduce the minimum instream flow requirements in the Water Agency's water right permits as necessary to preserve water supply storage in Lake Mendocino for subsequent downstream beneficial uses.

3.3.2 Lake Mendocino

Lake Mendocino is located approximately 4 miles northeast of the City of Ukiah on the East Fork Russian River in Mendocino County (Figure 3-1) and is created by Coyote Valley Dam. The USACE's construction of Coyote Valley Dam and Lake Mendocino was authorized by the Flood Control Act of 1944 for the purposes of flood control, water supply, recreation, and streamflow regulation. Construction was completed in 1959. Coyote Valley Dam is an earth embankment dam, approximately 160 feet high with a crest 3,500 feet long. The invert of the controlled outlet at the dam is at an elevation of 637 feet above mean sea level (MSL); the dam crest elevation is at 784 feet above MSL (USACE 1986a). Lake Mendocino's total current

⁷ FERC issued the license amendment to PG&E in 2004; however, the terms of the license were not interpreted and implemented fully until 2006.

Background and Project Description

storage capacity is 116,500 acre-feet, with a water supply pool between 68,400 acre-feet and 111,000 acre-feet, depending on time of year (Figure 3-2). Based on reservoir bathymetric surveys completed in 1952 and 2001, the estimated average sedimentation rate is approximately 143 acre-feet per year. The inside elevation of the bottom of the dam's controlled outlet establishes the top of the inactive pool, which was estimated to have a storage capacity of 135 acre-feet (USACE 1986a). Based on the average rate of sedimentation, it appears that the inactive pool has reached its capacity to accumulate sediment.

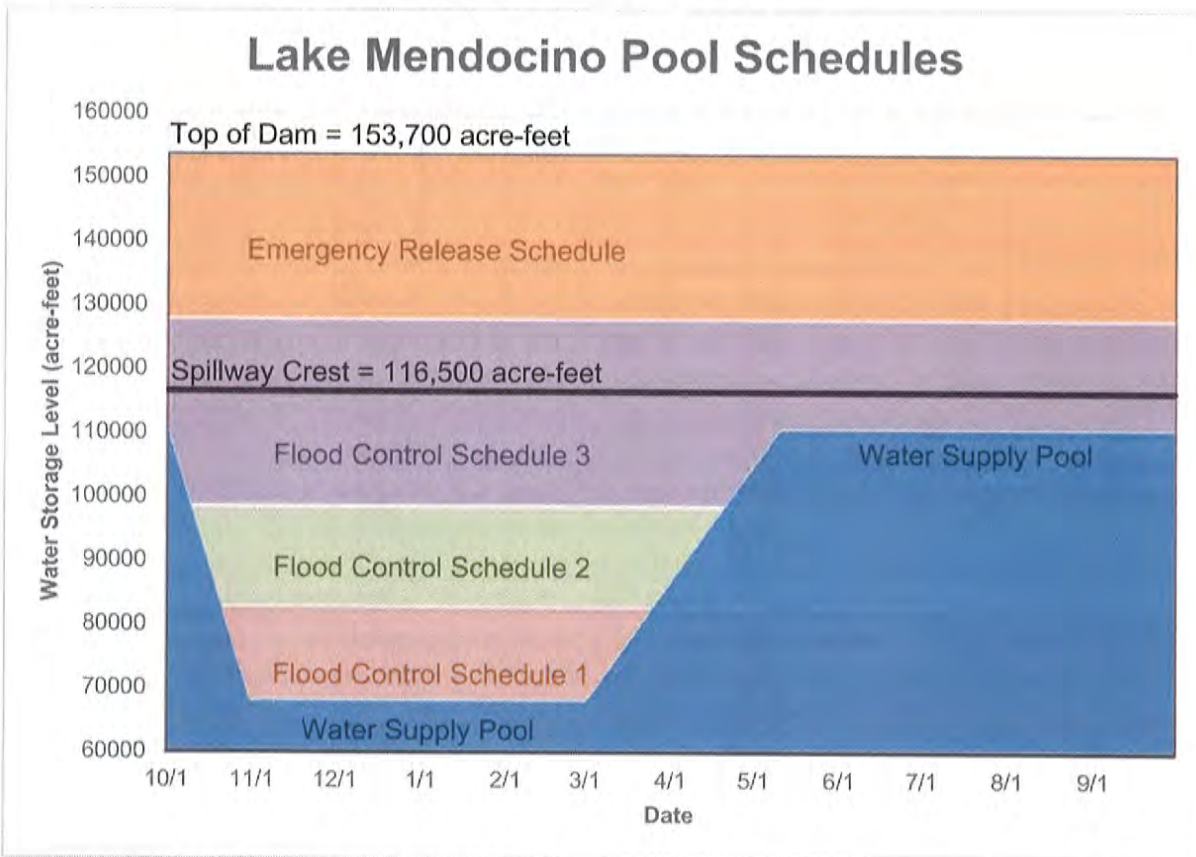


Figure 3-2. Lake Mendocino flood control and water supply pool schedules defined in the 2004 U.S. Army Corps of Engineers Coyote Valley Dam and Lake Mendocino, Russian River, California, Appendix I to Master Water Control Manual, Water Control Diagram.

The watershed contributing to Lake Mendocino encompasses an area of 105 square miles, which is approximately 7 percent of the Russian River watershed. The average annual inflow into Lake Mendocino is approximately 235,000 acre-feet per year, with a peak annual inflow of 443,000 acre-feet in 1983 and a minimum annual inflow of 60,000 acre-feet in 1977. Inflow into the reservoir consists of unimpaired flows⁸ from the contributing watershed and water imported from the Eel River by the PVP. Unimpaired stream flows create most of the Russian River flows downstream of Coyote Valley Dam to the Russian River's confluence with Dry Creek during the

⁸ Unimpaired flows are the "natural" flows, unaffected by man-made influences like water diversions and reservoir operations.

rainy season (November through April). During the drier months of May through October, water released from Lake Mendocino storage creates most of the flows in the Russian River upstream of Dry Creek.

The USACE operates Lake Mendocino recreational facilities, which include hiking trails, picnic areas, campgrounds, boat launches, and a disc golf course. These facilities also provide opportunities for boating, swimming, and hunting.

Flood Management Operations

The USACE manages water releases from Coyote Valley Dam and Lake Mendocino during flood management operations according to the *Coyote Valley Dam Master Water Control Manual, Appendix I* (CVD Water Control Manual; (USACE 1986a) and (USACE 2004). The CVD Water Control Manual includes a reservoir guide curve that establishes the maximum seasonal limits for water supply storage in Lake Mendocino (Figure 3-2). The volume of the water supply pool decreases during the rainy season to increase available storage for flood management operations. The volume of the water supply pool increases in the dry season to increase water storage for water supply operations. The flood control pool is defined as the volume above the reservoir guide curve. When water storage in Lake Mendocino is above the reservoir guide curve and in the flood control pool, the USACE normally manages releases from Coyote Valley Dam. Under typical flood management operations, water is temporarily detained in the flood control pool until the risk of downstream flooding has diminished. The USACE will then release water from the reservoir to bring storage levels back down to the level defined by the reservoir guide curve. These releases are initiated in accordance with schedules established in the CVD Water Control Manual (Figure 3-2).

Water Supply Operations

The Water Agency is the local sponsor for Lake Mendocino and is responsible for making water supply releases in compliance with its water right permits. As the local sponsor, the Water Agency has the exclusive right to control releases from the water supply pool. The Water Agency makes releases from Coyote Valley Dam to maintain the minimum instream flow requirements specified in its water right permits and for downstream beneficial uses along the Upper Russian River, including diversions for domestic, municipal, industrial and agricultural purposes⁹. These releases are made by the Water Agency when reservoir storage levels are in the water supply pool, which is at or below the reservoir guide curve as established in the CVD Water Control Manual (Figure 3-2). The Water Agency and the Mendocino County Russian River Flood Control and Water Conservation Improvement District (Mendocino District) each have a water right permit for storage of water in Lake Mendocino's water supply pool, as described in Section 3.3.6, Water Right Permits below. The Water Agency makes release decisions on the Upper Russian River to comply with minimum instream flow requirements in its water right permits at compliance locations as far away as Healdsburg, over 60 miles downstream of Lake Mendocino. While the Water Agency must release enough water to satisfy diversions and stream depletions that occur along the river plus the amount needed for minimum instream flow compliance, the Water Agency does not control these diversions and

⁹ Upper Russian River is defined as the Russian River between the East Fork Russian River and Dry Creek.

the streamflow loss due to diversions and depletions can only be estimated from stream gage information at the compliance locations.

Coyote Valley Dam Egg Collection Facility

The Coyote Valley Dam Egg Collection Facility is owned by the USACE and operated by the CDFW. The eggs of steelhead returning to Lake Mendocino are collected and fertilized at the facility and then transported to the Don Clausen Fish Hatchery at Lake Sonoma to be raised. After a year, young steelhead are returned to the facility located at the base of Coyote Valley Dam, housed for a period of time to imprint the fish to the site, and then are released into the Russian River. Water released from Lake Mendocino is used to support facility operations, which require a minimum flow of 25 cfs. This water is diverted from the controlled outlet at Coyote Valley Dam and then released back to the river. CDFW normally requests additional water releases from Coyote Valley Dam in the winter to promote downstream migration of juvenile steelhead released to the Russian River. These additional releases typically are during one week in February and one week in March.

City of Ukiah Hydroelectric Facility

The City of Ukiah operates the Lake Mendocino Hydroelectric Plant at Coyote Valley Dam, which uses the releases of water from the reservoir to generate power under the license for FERC Project No. 2841. This plant began operations in 1986. The plant has a total generation capacity of 3.5 megawatts (MW) from two turbine/generator units with capacities of 2,500 and 1,000 kilowatts (kW), which are located in the powerhouse at the base of Coyote Valley Dam (Beach 2002). The facility's maximum discharge capacity is 2,000 cfs and all water used at the powerplant is discharged to the East Fork Russian River immediately downstream of the facility.

3.3.3 Lake Sonoma

Lake Sonoma is located approximately 10 miles northwest of the City of Healdsburg on Dry Creek, a tributary to the Russian River, and is created by Warm Springs Dam (Figure 3-1). The USACE's construction of Warm Springs Dam and Lake Sonoma were authorized by the Flood Control Act of 1962 for the purposes of flood control, water supply, environmental stewardship, and recreation. Construction was completed in 1983. Warm Springs Dam is an earth embankment dam approximately 319 feet high with a crest 3,000 feet long. Warm Springs Dam has four intakes at different elevations, which allow releases to be managed to achieve the desired water temperatures. The deepest intake at the dam is at an elevation of 221 feet above MSL; the dam crest elevation is at 519 feet above MSL (USACE 1984). When constructed, Lake Sonoma's total storage capacity was 381,000 acre-feet, with a water supply pool of 225,000 acre-feet (Figure 3-3). The USACE has not completed a reservoir bathymetric survey since Lake Sonoma was constructed. The Water Agency has estimated an average sedimentation rate for Lake Sonoma based on bed load measurements collected by the USACE during planning of the project. An average suspended sediment yield of 3,640 tons per square mile of watershed was measured in Dry Creek near the Geyserville United State Geological Survey (USGS) gaging station for the 15-year period from 1965 to 1979. From this

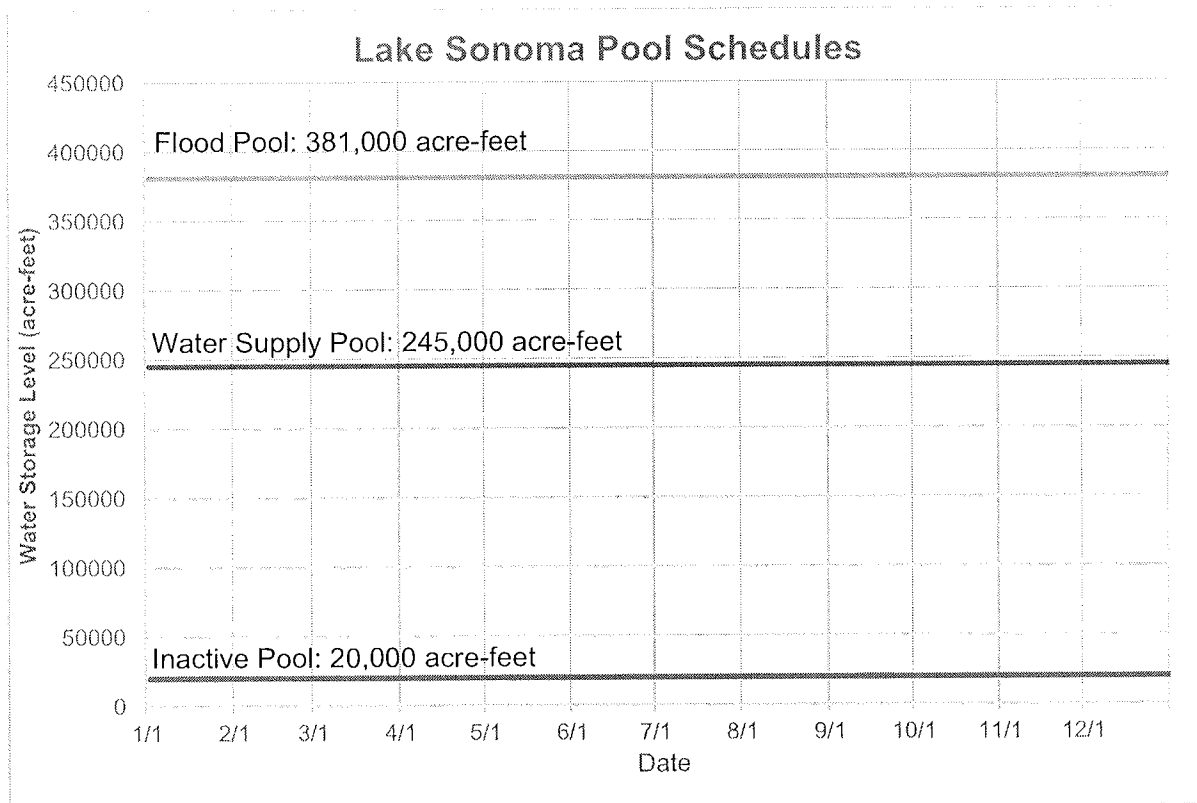


Figure 3-3. Lake Sonoma flood and water supply pool schedules defined in the 1984 U.S. Army Corps of Engineers Warm Springs Dam and Lake Sonoma, Dry Creek, California, Water Control Manual.

measurement, an annual sedimentation rate of approximately 2.3 acre-feet per square mile of watershed was estimated. Based on this rate, the current storage of the reservoir is estimated to be approximately 370,700 acre-feet; a reduction of approximately 2.6 percent of total capacity since construction. The invert of the dam's controlled outlet establishes the top of the inactive pool, which was estimated to have a storage capacity of 20,000 acre-feet (USACE 1984).

The watershed contributing to Lake Sonoma encompasses an area of 130 square miles, which is approximately 9 percent of the Russian River watershed. The average annual inflow into Lake Sonoma is approximately 170,000 acre-feet per year, with a peak annual inflow of 392,000 acre-feet in 1995 and a minimum of 41,000 acre-feet in 2014. All of the reservoir inflows come from unimpaired flows.

The USACE operates Lake Sonoma recreational facilities, which include hiking trails, picnic areas, campgrounds, and boat launches. These facilities provide opportunities for boating, swimming, and hunting. The privately-owned Lake Sonoma Marina Resort is located on the Warm Springs arm of Lake Sonoma and has a boat launch, boat rentals, fuel sales, and a day use area.

Flood Management Operations

The USACE manages water releases from Warm Springs Dam and Lake Sonoma during flood management operations according to the *Warm Springs Dam and Lake Sonoma Water Control Manual, Appendix II* (USACE 1984). The WSD Water Control Manual includes a reservoir guide curve that establishes the maximum limit for water supply storage in Lake Sonoma (Figure 3-3). The flood control pool is defined as the volume above the reservoir guide curve and below the top of the flood pool. When water storage in Lake Sonoma is above the reservoir guide curve and in the flood control pool, the USACE normally manages releases from Warm Springs Dam. Under typical flood management operations, water is temporarily detained in the flood control pool until the risk of downstream flooding has diminished. The USACE will then release water from the reservoir to bring storage levels down to the level defined by the reservoir guide curve. These releases are initiated in accordance with schedules established in the WSD Water Control Manual.

Water Supply Operations

The Water Agency is the local sponsor for Lake Sonoma and is responsible for making water supply releases. As the local sponsor, the Water Agency has the exclusive right to control releases from the water supply pool. The Water Agency makes releases from Warm Springs Dam to maintain the minimum instream flow requirements specified in its water right permits and for downstream beneficial uses, including diversions for municipal, domestic, and industrial purposes. These releases are made by the Water Agency when reservoir storage levels are in the water supply pool, which is at or below the reservoir guide curve as established in the WSD Water Control Manual.

Warm Springs Dam Hydroelectric Facility

The Water Agency operates the Warm Springs Dam Hydroelectric project under a license issued for FERC Project No. 3351. The hydroelectric plant has a total generation capacity of 2.6 MW through a single turbine and generator unit located inside the base of the dam's control structure.

Don Clausen Fish Hatchery

The Don Clausen Fish Hatchery, also known as the Warm Springs Dam Fish Hatchery, is owned by the USACE. The Don Clausen Fish Hatchery includes two primary programs, one to support the steelhead population and one to support coho salmon. CDFW operates the Don Clausen Fish Hatchery in conjunction with the Coyote Valley Dam Egg Collection Facility for the steelhead program. The USACE operates the coho salmon conservation hatchery program. The hatchery diverts flow from the releases at the Warm Springs Dam controlled outlet to support operations. Water used by the hatchery is discharged into Dry Creek downstream of the hatchery. The Water Agency coordinates its water supply releases with fish hatchery staff to ensure that releases meet the hatchery's operational needs. Minimum releases to support the hatchery typically range between 55 and 70 cfs.

3.3.4 Decision 1610 and Instream Flows

As discussed previously, the Water Agency is the local sponsor for Lake Mendocino and Lake Sonoma and manages water supply releases from both reservoirs in accordance with its water right permits. The SWRCB's Decision 1610 approved a hydrologic index and minimum instream flow requirements for the Russian River watershed in 1986. The Decision 1610 hydrologic index and minimum instream flow requirements are included in terms of the Water Agency's water right permits, as described in Section 3.3.6, Water Right Permits. The hydrologic index approved by Decision 1610 will be described in this document as the Decision 1610 Hydrologic Index. The minimum instream flow requirements included in the Water Agency's water right permits and approved by Decision 1610 will be described in this document as the Decision 1610 minimum instream flow requirements.

Hydrologic Condition

The SWRCB's Decision 1610 approved a hydrologic index for the Russian River watershed, which defines a hydrologic condition based on cumulative inflow into Lake Pillsbury in the Eel River watershed beginning on October 1 of each year.¹⁰ Thresholds of cumulative Lake Pillsbury inflow are defined for the first of each month from January 1 to June 1 to determine the hydrologic condition (Figure 3-4). The Decision 1610 Hydrologic Index defines cumulative inflow into Lake Pillsbury as the algebraic sum of releases from Lake Pillsbury, change in storage, and lake evaporation. The Decision 1610 Hydrologic Index includes three water supply hydrologic conditions: *Normal*, *Dry*, and *Critical*. These conditions are each used to determine a corresponding schedule of minimum instream flow requirements for the Upper Russian River, the Lower Russian River¹¹, and Dry Creek.¹² See Figure 3-4 for the detailed schedules. *Normal* water supply conditions exist whenever a *Dry* or *Critical* water supply condition is not present.

Dry water supply conditions exist when cumulative inflow to Lake Pillsbury from October 1 to the date specified below is less than:

- 8,000 acre-feet as of January 1;
- 39,200 acre-feet as of February 1;
- 65,700 acre-feet as of March 1;
- 114,500 acre-feet as of April 1;
- 145,600 acre-feet as of May 1; and
- 160,000 acre-feet as of June 1.

Critical water supply conditions exist when cumulative inflow to Lake Pillsbury from October 1 to the date specified below is less than:

- 4,000 acre-feet as of January 1;
- 20,000 acre-feet as of February 1;

¹⁰ Water year is defined as the 12-month period beginning on October 1 for any given year and ends September 30 of the following year. The water year designation is defined as calendar year in which it ends. For example, water year 2016 began on October 1, 2015, and ends September 30, 2016.

¹¹ Lower Russian River is defined as the Russian River from its confluence with Dry Creek to the Pacific Ocean.

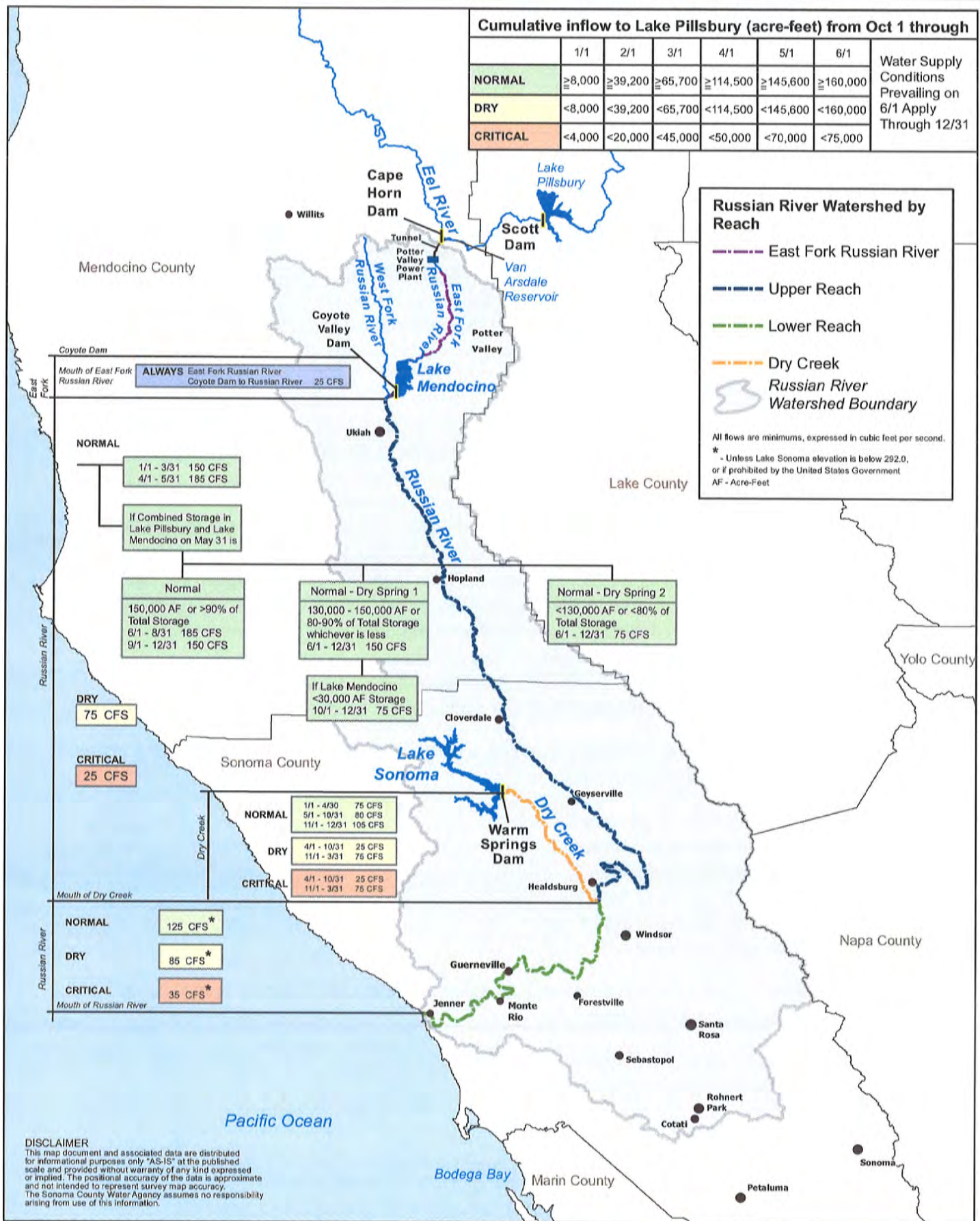
¹² These requirements apply to the reach of Dry Creek between Warm Springs Dam and its confluence with the Russian River.

Cumulative inflow to Lake Pillsbury (acre-feet) from Oct 1 through							Water Supply Conditions Prevailing on 6/1 Apply Through 12/31
	1/1	2/1	3/1	4/1	5/1	6/1	
NORMAL	≥8,000	≥39,200	≥65,700	≥114,500	≥145,600	≥160,000	
DRY	<8,000	<39,200	<65,700	<114,500	<145,600	<160,000	
CRITICAL	<4,000	<20,000	<45,000	<50,000	<70,000	<75,000	

Russian River Watershed by Reach

- East Fork Russian River
- Upper Reach
- Lower Reach
- Dry Creek
- Russian River Watershed Boundary

All flows are minimums, expressed in cubic feet per second.
 * Unless Lake Sonoma elevation is below 292.0,
 or if prohibited by the United States Government
 AF - Acre-Feet



DISCLAIMER
 This map document and associated data are distributed for informational purposes only "AS-IS" at the published scale and provided without warranty of any kind expressed or implied. The positional accuracy of the data is approximate and not intended to represent survey map accuracy. The Sonoma County Water Agency assumes no responsibility arising from use of this information.



Fish Habitat Flows and Water Rights Project Decision 1610 Index and Minimum Instream Flow Requirements



0 5 10
 Miles

Figure
3-4

- 45,000 acre-feet as of March 1;
- 50,000 acre-feet as of April 1;
- 70,000 acre-feet as of May 1; and
- 75,000 acre-feet as of June 1.

Minimum Instream Flow Requirements

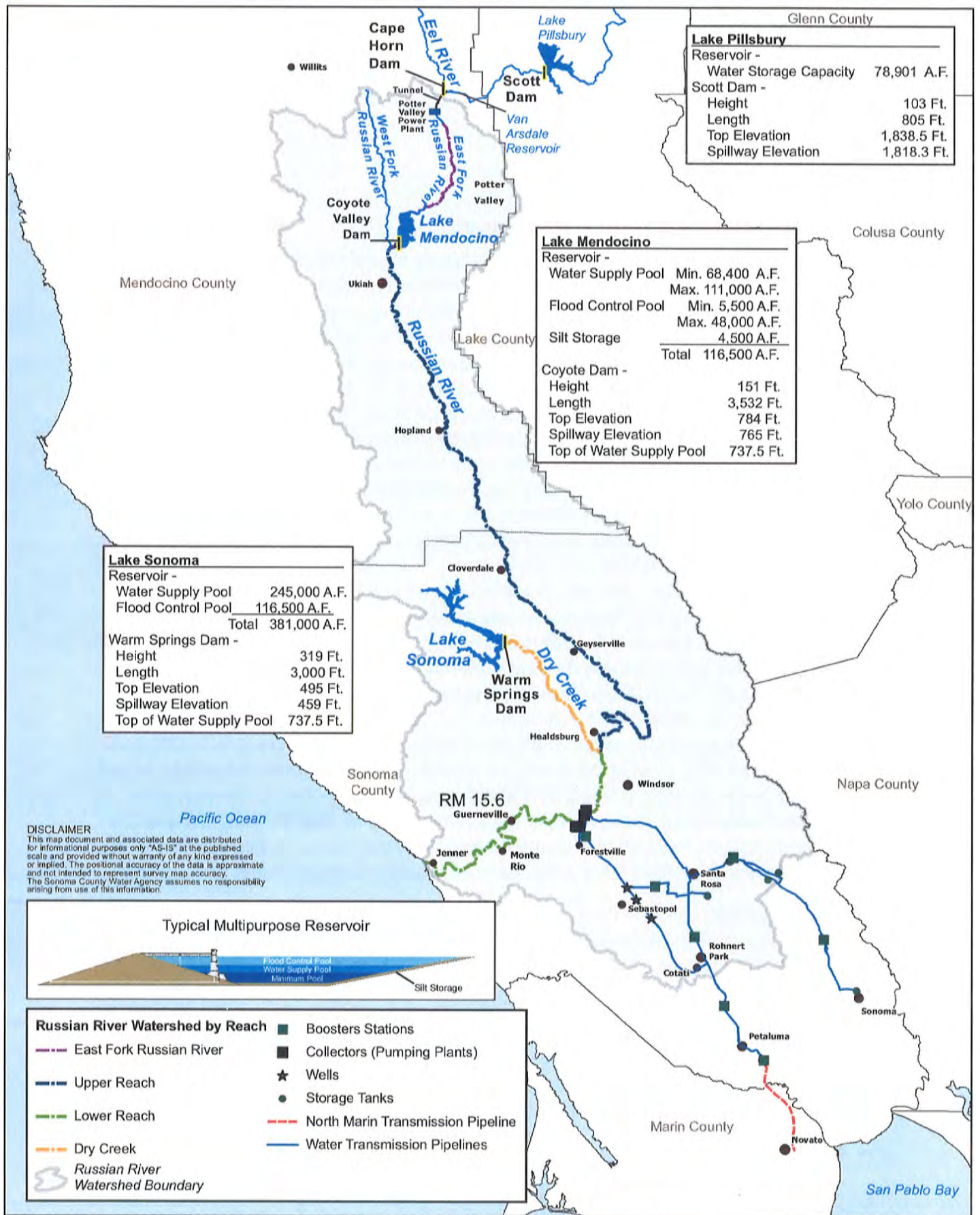
The Decision 1610 minimum instream flow requirements require a minimum flow of 25 cfs in the East Fork Russian River from Coyote Valley Dam to its confluence with the West Fork Russian River under all water supply conditions (Figure 3-4). From this point to Dry Creek, the required Upper Russian River minimum instream flows are 185 cfs from April 1 through August 1 and 150 cfs from September 1 through March 31 during *Normal* water supply conditions, 75 cfs during *Dry* conditions, and 25 cfs during *Critical* conditions. The Decision 1610 minimum instream flow requirements further specify two variations of the *Normal* water supply condition, commonly known as *Normal Dry Spring 1* and *Normal Dry Spring 2*. These conditions provide for lower minimum instream flow requirements in the Upper Russian River from the confluence of the East and West Forks to the Russian River's confluence with Dry Creek during times when the combined storage in Lake Pillsbury and Lake Mendocino on May 31 is unusually low. This Dry-Spring provision does not make any changes in minimum instream flow requirements in the Lower Russian River or Dry Creek. *Normal Dry Spring 1* conditions exist if the combined storage in Lake Pillsbury and Lake Mendocino is between 150,000 acre-feet or 90 percent of the estimated total water supply storage capacity of the reservoirs, whichever is less, and 130,000 acre-feet or 80 percent of the estimated total water supply storage capacity of the reservoirs, whichever is less, on May 31. Under *Normal Dry Spring 1* conditions, the required minimum instream flow in the Upper Russian River between the confluence of the East Fork and West Fork and Healdsburg is 150 cfs from June 1 through March 31, with a reduction to 75 cfs from October 1 through December 31 if Lake Mendocino storage is less than 30,000 acre-feet during those months. *Normal Dry Spring 2* conditions exist if the combined storage in Lake Pillsbury and Lake Mendocino is less than 130,000 acre-feet or less than 80 percent of the estimated total water supply storage capacity of the reservoirs on May 31. Under *Normal Dry Spring 2* conditions, the required minimum instream flows in the Upper Russian River are 75 cfs from June 1 through December 31 and 150 cfs from January 1 through March 31.

The required minimum instream flows in the Lower Russian River from Dry Creek to the Pacific Ocean are 125 cfs during *Normal* water supply conditions, 85 cfs during *Dry* conditions, and 35 cfs during *Critical* conditions.

The required minimum instream flows in Dry Creek below Warm Springs Dam are 75 cfs from January 1 through April 30, 80 cfs from May 1 through October 31, and 105 cfs from November 1 to December 31 during *Normal* water supply conditions. During *Dry* and *Critical* conditions, these required minimum flows are 25 cfs from April 1 through October 31 and 75 cfs from November 1 through March 31.

3.3.5 Water Agency Water Supply Facilities

The Water Agency's water supply facilities are comprised of water diversion and treatment facilities and a transmission system that delivers water to customers. The Water Agency



Fish Habitat Flows and Water Rights Project Russian River Water System



0 5 10
Miles

Figure
3-5

maintains its water diversion facilities at its Wohler and Mirabel properties, located near the community of Forestville in Sonoma County, California (Figure 3-5). The Wohler and Mirabel facilities are located on the Lower Russian River, approximately 6 miles downstream of the Russian River's confluence with Dry Creek. The Water Agency's diversion facilities divert Russian River underflow, and these diversions are authorized by and reported as diversions under the Water Agency's permitted surface water rights. The Water Agency operates six radial collector wells at the Wohler and Mirabel production facilities. The first two collector wells (Collectors 1 and 2) were constructed in the late 1950s near Wohler Bridge. Collectors 3, 4, and 5 were constructed near Mirabel Park between 1975 and 1983. Collector 6, located in the Wohler area, was completed in 2006. Each collector well consists of a 13- to 18-foot-diameter concrete caisson extending vertically approximately 60 to 110 feet into the alluvial aquifer. Horizontal perforated intake laterals extend radially from the bottom of each caisson into the aquifer. Each collector well houses two vertical turbine pumps driven by electrical motors. During peak demand months, the Water Agency raises an inflatable dam on the Russian River near Mirabel, which allows for operation of five infiltration ponds at Mirabel, which increase the area of infiltration along the Russian River. Water backs up behind the inflatable dam and is diverted into the infiltration ponds to recharge the aquifer in the vicinity of Collectors 3, 4, and 5. Backwater conditions along the river also result in increased infiltration in the Wohler area, thereby enhancing the production capacities of Collectors 1, 2 and 6.

In addition to Collectors 3, 4 and 5, the Water Agency maintains seven vertical wells, referred to as the Russian River Well Field, located at the Mirabel area. These wells are not operated as primary production facilities, but are maintained for standby emergency production.

Water pumped by the collector wells is naturally filtered as it travels through the sands and gravels of the aquifer into the collectors and wells and requires no additional treatment besides disinfection and pH adjustment. The Water Agency operates two corrosion control facilities (pH adjustment), one at Wohler and one on nearby River Road, to treat water in the water transmission aqueducts to control corrosivity in end user's plumbing.

In addition to the Wohler and Mirabel water supply facilities, the Water Agency operates three vertical groundwater wells adjacent to the Russian River-Cotati Intertie pipeline (aqueduct) in the Santa Rosa Plain. These wells are the Occidental Road well, Sebastopol Road well, and Todd Road well.

The Water Agency's transmission system delivers water to its customers in Sonoma and Marin counties. The transmission system is comprised of pipelines (aqueducts), storage tanks, booster pump stations, and other appurtenances.

3.3.6 Water Right Permits

Water right permits issued by the SWRCB are required to divert water under post-1914 appropriative water rights in California. California water right permits contain terms, that among other things, specify the maximum authorized rates of direct diversion and re-diversion. "Direct diversion" refers to water diverted directly from stream flows. "Re-diversion" refers to water that

is first collected to storage in a reservoir, then released from storage and diverted again (re-diverted) at a point downstream.

Riparian water rights are associated with the ownership of land bordering a stream or lake. Riparian water rights allow contiguous property owners to directly divert and use only the natural flow of water in a stream or lake for beneficial purposes without any permit from the SWRCB. However, if water is collected to storage in one season for use in another season, then an appropriative water right is required. Riparian users must share available natural flows among themselves and their rights usually remain with the land when the property is sold.

In California, most diversions are made under appropriative rights. The basic principle of appropriative water rights law is “first in time, first in right.” Under this principle, one who first appropriates water and puts it to beneficial use¹³ has a right that has a high priority over the rights of later appropriators. During times of water shortage, “junior” appropriators may be prohibited from diverting water under their rights so that there is sufficient water for diversion by “senior” appropriators.

The Water Agency manages water supply releases from Coyote Valley Dam and Warm Springs Dam under water right permits originally issued by the SWRCB in Decision 1030, adopted on August 17, 1961, and then modified by Decision 1416, adopted on March 15, 1973; Order WR 74-30, adopted on October 17, 1974; Order WR 74-34, adopted on November 21, 1974; and Decision 1610, adopted on April 17, 1986. The Water Agency holds Permit 12947A for storage of water in Lake Mendocino and for direct diversion and re-diversion of water originating in the East Fork Russian River at its Wohler/Mirabel diversion facilities and other locations of its customers. Under Permit 12947A, the combined direct diversion and re-diversion rates are limited to an average monthly rate of 92 cfs and to 37,544 acre-feet per year (AFY). The Water Agency holds Permit 16596 for storage of water at Lake Sonoma and direct diversion and re-diversion of up to 180 cfs from the Russian River at the Wohler/Mirabel diversion facilities and other locations of its customers. The Water Agency also holds water right Permits 12949 and 12950 for direct diversion of 20 and 60 cfs, respectively, at the Wohler/Mirabel diversion facilities and other locations of its customers.

Water right Permit 12947A authorizes the Water Agency to store up to 122,500 AFY of water in Lake Mendocino and Permit 16596 authorizes the Water Agency to store up to 245,000 AFY of water in Lake Sonoma. The combined amount of direct diversion and re-diversion authorized under the Water Agency's four permits (12947A, 16596, 12949, and 12950) is limited to no more than 180 cfs (116.3 million gallons per day [mgd]) and 75,000 acre-feet per water year. The authorized points of diversion in these permits include the Water Agency's Wohler/Mirabel diversion facilities and facilities of its Russian River Customers. In Decision 1610, the SWRCB specified a deadline of December 1, 1999, for the Water Agency to complete full beneficial use of water under the permits. This deadline is specified in Term 8 of Permit 16596, Term 8 of Permit 12947A, Term 6 of Permit 12949, and Term 6 of Permit 12950.

¹³ The beneficial uses of water, pertaining to water rights, are defined in the California Code of Regulations (CCR) §659-672 to include: domestic; irrigation; power; municipal; mining; industrial; fish and wildlife preservation and enhancement; aquaculture; recreational; stockwatering; water quality; frost protection; and heat control.

As described previously, the Decision 1610 minimum instream flow requirements are included in terms of the Water Agency's water right permits. The Decision 1610 minimum instream flow requirements for the Upper Russian River and Lower Russian River are included in Term 20 of the Water Agency's water right Permit 12947A. The Decision 1610 minimum instream flow requirements for the Lower Russian River are included in Term 17 of Permit 12949 and Term 17 of Permit 12950. The Decision 1610 minimum instream flow requirements for Dry Creek and the Lower Russian River are included in Term 13 of Permit 16596.

Decision 1610 also authorized Redwood Valley County Water District to divert up to 7,500 acre-feet of water from Lake Mendocino under the Water Agency's Permit 12947A under specific conditions. Any water diverted under the Water Agency's Permit 12947A may be used only within the Redwood Valley County Water District boundaries as they existed in 1986. Currently, there is no agreement between the Water Agency and Redwood Valley County Water District and the Redwood Valley County Water District is not diverting any water under the Water Agency's permit.

The Mendocino County Russian River Flood Control and Water Conservation Improvement District (Mendocino District) holds Permit 12947B, which authorizes the diversion and consumptive use within its service area of 8,000 AFY of water. The Mendocino District acquired this right, with a priority date of 1949, in 1961 in consideration of its reimbursing the Water Agency for 11.2 percent of the local cost of the Coyote Valley Dam Project, as discussed in the SWRCB's Decision 1030.

Decision 1030 also reserved 10,000 acre-feet per year of water from Lake Mendocino for diversions for domestic and agricultural uses within the Russian River Valley in Sonoma County, and this reservation commonly is referred to as the "10,000 acre-foot reservation." Diversions and uses of water under this reservation are reported by the individual water right holders that divert and use water under the reservation. Decision 1030 concluded that there should be sufficient water reserved for use in the Russian River Valley in Sonoma County to meet future requirements for 10 years and that after 10 years, any water not contracted for should be made available elsewhere. In Order WR 74-30, the SWRCB ordered that the Water Agency's appropriative water right permit be amended to be subject to depletion by diversion of project water not to exceed 10,000 acre-feet per year, eliminated the 10-year time limit, and allowed individuals to file applications with the SWRCB to appropriate up to 10,000 acre-feet per year for agricultural and domestic purposes within the Russian River Valley in Sonoma County for uses beginning after January 28, 1949 (SWRCB 1974). Decision 1610 did not change provisions of this order pertaining to the 10,000 acre-foot reservation. Table 3-1 provides the SWRCB's estimate of the depletion of the 10,000 acre-foot reservation on the Russian River in Sonoma County as of January 2013 (SWRCB 2013).

Table 3-1. Estimate of the Depletion of Decision 1030's 10,000 acre-foot reservation of water on the Russian River Mainstem in Sonoma County (SWRCB 2013).

Reservation application by type	Number	Water (acre-feet)	% of total
Reservation Total	N/A	10,000	100.0
Licensed Depletion (including 5 SDRs)	93	2,842	28.4
Permitted Depletion	25	3,077	30.8
Pending Application Depletion	10	2,576	25.8
Sub-total	128	8,495	84.9
Reservation Available for New Applications	N/A	1,505	15.1

3.3.7 Water Supply Agreements

The Restructured Agreement for Water Supply (Restructured Agreement), which was executed in 2006, generally provides for the finance, construction, and operation of existing and new diversion Water Agency facilities, transmission lines, storage tanks, booster pumps, conventional wells, and appurtenant facilities. The Restructured Agreement specifies the contractual relationship between the Water Agency and its eight retail contractors, and specifies the quantities of water that they require and the flow rates that are necessary to meet their peak day's demands, subject to delivery limitations.¹⁴ The water contractors are public agencies that provide retail water service to industrial, commercial, and residential users. The Restructured Agreement also provides funding mechanisms that allow the Water Agency and its water contractors to plan for and implement watershed enhancement and restoration, fisheries enhancement, water conservation, regional planning, local supply, and recycled water projects and activities, and that encourage water contractors to institute aggressive water conservation programs.

The Water Agency has agreements that allow specific entities to divert water from the Russian River under the Water Agency's water rights using their own diversion facilities. These entities are the City of Healdsburg, Town of Windsor, Camp Meeker Recreation and Park District, and Occidental Community Services District (Occidental CSD).¹⁵ The Water Agency's agreements with these customers require them to use any water right they may have before using the Water Agency's water rights. The agreements with Town of Windsor and Occidental CSD require the Water Agency to file petitions with the SWRCB for changes in the Water Agency's water right permits that will allow these customers to divert water at specific points of diversion on the Russian River under the Water Agency's permits. The Water Agency filed petitions with the SWRCB for these changed in October 2002 and May 2004, respectively. The Water Agency's petition to add an authorized point of diversion for Occidental CSD included requested limits on total diversions and re-diversions of 0.16 cfs (average during any month) and 65 AFY. Water diverted under this agreement may only be used within the boundaries of the Occidental CSD. The Water Agency's water right permits currently include three Town of Windsor wells as authorized points of diversion. The Water Agency's petition to add additional authorized points

¹⁴ The Restructured Agreement also includes an aggregate maximum allocation for "other Agency customers." The Water Agency's deliveries to Marin Municipal Water District are authorized by the Restructured Agreement and are subject to the terms of a Supplemental Water Supply Agreement, dated July 1, 2015, between the Water Agency and the Marin Municipal Water District, which amended two existing agreements (the "Offpeak Water Supply Agreement" and the "Agreement for the Sale of Water").

¹⁵ Occidental Community Services District is prohibited from diverting under the Water Agency's water right permits because the District's wells are not currently authorized points of diversion in the Water Agency's permits.

of diversion for the Town of Windsor requested limits on total diversions and re-diversions of 14.26 cfs and 4,725 AFY. Water diverted under this agreement may be used only within the boundaries of the Windsor Water District. Both petitions are still pending before the SWRCB. The agreement with the Occidental CSD is executed but will not become effective until the SWRCB approves the petition authorizing diversion at the Occidental CSD point of diversion.

“Other transmission system customers” are customers that have contracts with the Water Agency authorizing them to receive water through connections to the Water Agency’s transmission system. These customers include the Forestville Water District, California-American Water Company (in the Larkfield-Wikiup area), the Kenwood Village Water Company, Lawndale Mutual Water Company, Penngrove Water Company, the County of Sonoma, the State of California, and Santa Rosa Junior College. The Water Agency also supplies small quantities of water, when available, from its transmission system to several surplus water customers.

3.3.8 Water Rights Application

The Water Agency filed an application with the SWRCB for a new appropriative water right permit for the direct diversion of 72 cfs (up to 26,000 AFY) of Russian River water at the Water Agency’s Wohler and Mirabel facilities on October 11, 1999. The Water Agency filed petitions at the same time to amend its water right permits to increase the total maximum authorized instantaneous and annual diversion rates in these permits. The Water Agency filed this application and these petitions to implement the Water Agency’s Water Supply and Transmission System Project, which had proposed to increase the total maximum authorized diversion rates in the Agency’s water rights (including the requested new permit) to 252 cfs and 101,000 AFY. The petitions also requested changes to the deadlines for applying water to full beneficial use in Permits 12949, 12950, and 16596 to December 1, 2020. The Water Agency filed a request to the SWRCB to cancel this application and these petitions in August 2016.

As described in Section 3.3.7, Water Supply Agreement, the Water Agency petitioned the SWRCB to authorize the addition to the authorized points of diversion in the Water Agency’s permit of the Occidental CSD and Town of Windsor wells to the authorized points of diversion in the Water Agency’s water right permits in 2002 and 2004, respectively. Both petitions are still pending before the SWRCB.

The Water Agency filed a petition with the SWRCB to permanently change Decision 1610 minimum instream flow requirements on September 23, 2009, as required by NMFS’ Russian River Biological Opinion. The purpose of that petition is fully described in Section 3.3.12, Russian River Biological Opinion, and Section 3.5, Purpose and Need for Project. In August 2016, the Water Agency filed a request to the SWRCB to cancel that 2009 petition and filed a new petition to change the minimum instream flow requirements and hydrologic index in the Water Agency’s water right permits as necessary to implement the Fish Flow Project. The proposed Fish Flow Project is fully described in Section 3.7, Description of the Proposed Project.

3.3.9 Urban Water Management Plan

The Water Agency prepared the wholesaler 2015 Urban Water Management Plan (UWMP), which was adopted by the Water Agency's Board of Directors on June 21, 2016, in accordance with the Urban Water Management Planning Act (UWMPA).¹⁶ The UWMPA requires every urban water supplier that provides water for municipal purposes to more than 3,000 customers, or that supplies more than 3,000 acre-feet of water annually, to adopt a plan every five years and to file it with the California Department of Water Resources (DWR). The UWMP is a long-range planning document for the Water Agency's wholesale water supply (Brown and Caldwell 2016). Included in the UWMP is a description of the water supply system, current and projected water uses, reliability of water supplies, a water shortage contingency plan, and water demand management measures. Based on the water demand projections described in the 2015 UWMP, the Water Agency estimates the existing annual diversion and re-diversion limit of 75,000 AFY will be exceeded in approximately 2035. The Water Agency's projected total annual diversions and re-diversions are estimated to exceed the 75,000 AFY limit be about 117 ac-ft/yr in 2035 and by almost 1,000 AFY in 2040. The potential need to apply to the SWRCB for an increase in the 75,000 AFY limit and the schedule for filing any needed water right application or petitions with the SWRCB for this increase will be reevaluated in the Water Agency's 2020 UWMP and in each subsequent UWMP as necessary.

3.3.10 Water Conservation and Education

The Water Agency is a member of the California Urban Water Conservation Council (CUWCC). The CUWCC assists water purveyors in increasing water conservation statewide under a Memorandum of Understanding (MOU). The Water Agency is a signatory to the MOU and has pledged to make good faith efforts towards implementing Best Management Practices (BMPs) regarding urban water conservation that are described in the CUWCC MOU. The two primary purposes of the MOU are: 1) to expedite implementation of reasonable water conservation measures in urban areas; and 2) to establish assumptions for use in calculating estimates of reliable future water conservation savings resulting from proven and reasonable conservation measures.

The Water Agency is the first wholesale water agency in the state to have all its water contractors sign the CUWCC MOU. The Water Agency signed the CUWCC MOU on June 1, 1998, and submits annual BMP reports to the CUWCC in accordance with the MOU. The MOU only requires that water utilities implement BMPs that are economically feasible. If a BMP is not economically feasible or has legal barriers to implementation, the utility may request an economic exemption for that BMP. The Water Agency has not requested an exemption from any BMP at this time.

As a wholesaler MOU signatory, the Water Agency assists its retailers with BMP implementation where appropriate. The Water Agency is responsible for the implementation of a subset of the BMPs.

¹⁶ California Water Code, Sections 10610 through 10656.

The Water Agency is also involved with regional programs and partnerships to provide help and information for water conservation. The Sonoma Marin Saving Water Partnership (Partnership) was formed in 2010 by the cities of Santa Rosa, Rohnert Park, Sonoma, Cotati, and Petaluma, the Town of Windsor, the North Marin and Valley of the Moon Water Districts, the California-American Water Company and the Water Agency to maximize the cost effectiveness of implementing water conservation programs. The Partnership offers customers information about appliance rebates, gardening programs, and drought drive-up events that give away household items for water conservation. The Partnership coordinates water use efficiency-focused media actions in the region and provides support to members that need additional assistance meeting conservation targets.

Water Education Program

The Water Agency's Water Education Program is a comprehensive approach to helping educators teach students the value of water as an important natural resource. The Water Agency's service area covers over 200 schools throughout Sonoma and northern Marin counties. The total number of students receiving direct instruction from 1999 to 2015 ranged from 1,797 in school year 2001-2002 to 10,520 in 2014-2015. Water conservation and stewardship of local watersheds is promoted as part of the program. Students are encouraged to use water wisely and make environmentally sustainable choices to help secure a reliable source of water now and in the future. The program includes classroom instructional presentations, field study opportunities, free curriculum materials aligned with the Next Generation Science Standards and the California Science Standards, a lending library of videos, interactive models and printed materials, production of a newsletter for teachers and endorsement, participation and financial sponsorship of events, assemblies and workshops. All of the Water Education programs and materials are free to teachers in the Water Agency's service area.

3.3.11 Water Supply Strategies Action Plan

To support the Water Agency's commitment to providing a safe, reliable water supply in the future, the Water Agency's Board of Directors approved the Water Supply Strategies Action Plan (Action Plan) in 2010. The plan was approved followed 16 months of community outreach and involvement to develop strategies that would increase water supply system reliability, resiliency and efficiency. The Action Plan was updated in 2011 and 2013. The Action Plan identified the following nine strategies (SCWA 2013): 1) ensure adequate summertime water flow through Dry Creek Valley; 2) improve management of Russian River System to protect fisheries and meet water demands; 3) plan for the impact of climate change on water supply and flood protection; 4) identify and implement projects that integrate stormwater recharge and flood protection; 5) build partnerships with stakeholders to facilitate information based water supply planning; 6) implement projects to improve transmission system reliability; 7) improve the energy efficiency of the water transmission system and increase renewable power use; 8) implement projects that improve integration of water management; and 9) improve internal and external processes, data exchange and analysis to promote organizational efficiency.

3.3.12 Russian River Biological Opinion

The National Marine Fisheries Service issued its *Biological Opinion for Water Supply, Flood Control Operations, and Channel Maintenance conducted by the U.S. Army Corps of Engineers, the Sonoma County Water Agency, and the Mendocino County Russian River Flood Control and Water Conservation Improvement District in the Russian River Watershed* (Russian River Biological Opinion) on September 24, 2008 (NMFS 2008). The Russian River Biological Opinion is a culmination of more than a decade of consultation among the Water Agency, the USACE, and NMFS regarding the impacts of Water Agency and USACE water supply and flood control activities on three fish species listed under the federal Endangered Species Act: Central California coast steelhead (*Oncorhynchus mykiss*); Central California Coast coho salmon (*O. kisutch*); and California Coast Chinook salmon (*O. tshawytscha*). Coho salmon are also listed under the California Endangered Species Act (CESA). The CDFW issued a consistency determination on November 9, 2009, finding that the NMFS' Russian River Biological Opinion was consistent with the requirements of the CESA and adopting the measures identified in the Russian River Biological Opinion.

NMFS concluded in the Russian River Biological Opinion that the continued operations of Coyote Valley Dam and Warm Springs Dam by the USACE and the Water Agency in a manner similar to recent historic practices, together with the Water Agency's stream channel maintenance activities and estuary management, are likely to jeopardize and adversely modify critical habitat for endangered Central California Coast coho salmon and threatened Central California Coast steelhead. To avoid jeopardizing these listed species, the Russian River Biological Opinion includes a recommended set of actions, identified as Reasonable and Prudent Alternatives (RPAs), for the Water Agency's and USACE's operations evaluated in the Russian River Biological Opinion. The Water Agency is responsible for taking the following actions under the Russian River Biological Opinion: 1) reducing minimum instream flow requirements in the Russian River and Dry Creek; 2) enhancing salmon habitat in Dry Creek and its tributaries; 3) developing a bypass pipeline around Dry Creek if habitat enhancement in the creek is unsuccessful; 4) modifying Russian River Estuary management; 5) improving water diversion infrastructure at the Water Agency's Wohler and Mirabel diversion facilities; 6) modifying flood control maintenance activities on the mainstem Russian River and its tributaries; and 7) continuing to participate in the Coho Broodstock program.

The federal Endangered Species Act prohibits the "take" (which include killing, harassing or harming) of threatened and endangered species. Agencies may be authorized to take actions that cause incidental take liability by the regulating agency (in this case NMFS) if species will be harmed only incidentally as unintentional results of lawful operations. The Russian River Biological Opinion includes an Incidental Take Statement with a term of 15 years that authorizes the Water Agency and the USACE to conduct specified lawful operations and make specified changes in operations as a result of the Russian River Biological Opinion so long as the terms and conditions of the Incidental Take Statement are met, even if incidental take may result from such operations. The Incidental Take Statement includes Reasonable and Prudent Measures (RPMs) that the Water Agency and USACE must implement to minimize and monitor the impacts of the incidental take of listed species due to implementation of the Water Agency and

USACE's water supply and flood control activities and RPAs (NMFS 2008). Key measures required by the Incidental Take Statement to be implemented by the Water Agency include: 1) limiting water supply releases from Coyote Valley Dam and Warm Springs Dam to monthly median flow criteria to avoid take of juvenile steelhead and coho salmon associated with high flow releases; 2) limiting the number of times artificial breaching of the barrier beach at the Russian River Estuary may occur during the term of the Biological Opinion from May 15 to October 15; 3) design of a new and replacement of a fish screen at the Mirabel diversion facility; and 4) methods of monitoring and handling salmonids by measures that ensure low injury and mortality to listed salmonids.

3.4 Project Objective

The objectives of the Fish Flow Project are to manage Lake Mendocino and Lake Sonoma water supply releases to provide instream flows that will improve habitat for threatened and endangered fish species, and to update the Water Agency's existing water rights to reflect current conditions. The new minimum instream flow requirements proposed by the Fish Flow Project were developed to meet the requirements of the Russian River Biological Opinion to improve habitat for threatened and endangered salmonid species.

3.5 Purpose and Need for Project

The Water Agency holds water right permits,¹⁷ issued by the SWRCB, that authorize the Water Agency to divert Russian River and Dry Creek flows and to re-divert water released from Lake Mendocino and Lake Sonoma storage. The Water Agency releases water from storage in these reservoirs for re-diversion and subsequent delivery to retail water suppliers, where the water is used primarily for residential, governmental, commercial, and industrial purposes. The primary points of diversion and re-diversion are the Water Agency's facilities at Wohler and Mirabel (near Forestville). The Water Agency also releases water to satisfy the needs of other water users who directly divert streamflow and to replace streamflow lost to the underlying aquifer and to contribute to the maintenance of minimum instream flow requirements in the Russian River and Dry Creek established in 1986 by the SWRCB's Decision 1610. These minimum instream flow requirements vary based on defined hydrologic conditions (*Normal*, *Dry*, and *Critical*) that are based primarily on cumulative inflows into PG&E's Lake Pillsbury in the Eel River watershed.

Unimpaired drainage and stream flow (as opposed to reservoir releases) contribute the majority of the Russian River flows downstream of Coyote Valley Dam and Warm Springs Dam during the rainy season (November through April) except in the driest years. In contrast, during the drier months of May through October, water released from Lake Mendocino storage contributes most of the water in the Russian River upstream of Dry Creek. Similarly, water released from Warm Springs Dam storage contributes most of the water in Dry Creek during the dry season (May through October). Most of the water in the Russian River between Dry Creek and the Pacific Ocean in the dry season is from releases of water stored in Lake Mendocino and Lake Sonoma, except at the Russian River Estuary, which also receives input from the Pacific Ocean.

¹⁷ Waterwater-right Permits 12947A, 12949, 12950 and 16596.

During most months, some of the flows in the Russian River are composed of releases from Lake Mendocino storage, which includes water imported from the Eel River via PG&E's Potter Valley Project.

The Russian River and Dry Creek minimum instream flow requirements established by Decision 1610 and the hydrologic index that is based on Eel River flows to Lake Pillsbury are no longer appropriate. Decision 1610 was adopted before the listings of three salmonid species in the Russian River watershed under the federal Endangered Species Act (ESA),¹⁸ was based on much higher PVP flows to Lake Mendocino than occur today, and did not specifically address the importance of fall storage in Lake Mendocino to the Chinook salmon migration. Also Decision 1610 assumed that higher instream flows were better for fishery resources, and information developed since Decision 1610 was adopted indicates this is not the case for salmonid species in the Russian River and Dry Creek. Decision 1610 expressly recognized that later fishery studies might identify a need to change the minimum instream flow requirements. Decision 1610 also expressly contemplated that changes might be needed if the amounts of water diverted into the East Fork Russian River by PG&E's PVP changed, as it has.

As described in Section 3.3.12, NMFS issued its Russian River Biological Opinion on September 24, 2008. NMFS concluded in the Russian River Biological Opinion that the continued operations of Coyote Valley Dam and Warm Springs Dam by the USACE and the Water Agency in a manner similar to recent historic practices are likely to jeopardize and adversely modify the critical habitats of endangered Central California Coast coho salmon and threatened Central California Coast steelhead. Specifically, NMFS concluded that the artificially elevated summertime minimum flows in the Russian River and Dry Creek that are currently required by the Decision 1610 minimum flow requirements result in high water velocities that reduce the quality and quantity of rearing habitat for coho salmon and steelhead. Additionally, NMFS concluded that maintaining these flows disrupts lagoon formation and retention in the Russian River estuary and that allowing a lagoon to develop and remain during the summer would likely enhance juvenile steelhead and salmon habitat.

NMFS's Russian River Biological Opinion concludes that reducing the Decision 1610 minimum instream flow requirements will enable alternative flow management scenarios that will increase available salmonid rearing habitat in Dry Creek and the upper Russian River, and provide lower, closer-to-natural inflows into the estuary between late spring and early fall, thereby enhancing the potential for maintaining a seasonal freshwater lagoon that would likely support increased production of juvenile steelhead and salmon. (NMFS 2008, 243)

As required by the Russian River Biological Opinion, in September 2009 the Water Agency filed a petition with the SWRCB, asking the SWRCB to permanently change the Decision 1610 minimum instream flow requirements. As discussed above, the Water Agency asked the SWRCB to cancel this petition and instead to process the Water Agency's new petition to change these requirements.

¹⁸ Central California coast coho salmon are also listed as endangered under the California Endangered Species Act.

Until the SWRCB changes the Decision 1610 minimum instream flow requirements, these requirements and the resulting adverse impacts to listed salmonids will remain in effect, except during times when temporary changes to these requirements are made by the SWRCB. The Russian River Biological Opinion requires that the Water Agency annually petition the SWRCB for certain temporary changes to the Decision 1610 minimum instream flow requirements during the summer months until the SWRCB issues an order permanently changing these requirements. The Russian River Biological Opinion requires annual Water Agency petitions for temporary changes to minimum instream flow requirements for the mainstem Russian River, but not to the requirements for Dry Creek. The Water Agency petitioned the SWRCB for the Russian River Biological Opinion-specified temporary changes for the first time in 2010, which the SWRCB approved.¹⁹ The Water Agency filed temporary urgency change petitions to comply with the Russian River Biological Opinion in 2011, 2012, and 2016, and the SWRCB approved these petitions.²⁰ The temporary changes approved by the SWRCB reduced the minimum instream flow requirement to 70 cubic feet per second (cfs) for the Lower Russian River between approximately May 1 and October 15. Additionally, to enhance steelhead rearing habitat in the Russian River between the East Fork and Hopland, the temporary changes reduced the minimum instream flow requirement to 125 cfs for the Upper Russian River between May 1 and October 15 (NMFS 2008, 247).

The permanent and temporary changes to Decision 1610 minimum instream flow requirements specified by NMFS in the Russian River Biological Opinion are summarized in Figure 3-6. The Russian River Biological Opinion concluded that, in addition to providing fishery benefits, the lower instream flow requirements “should promote water conservation and limit effects on instream river recreation. (NMFS 2008, 244) The Russian River Biological Opinion concluded that the following permanent changes to the Decision 1610 minimum instream flow requirements may achieve these goals:

During Normal Years:

1. Reduce the minimum flow requirement for the Russian River from the East Fork to Dry Creek from 185 cfs to 125 cfs between June 1 and August 31; and from 150 cfs to 125 cfs between September 1 and October 31.
2. Reduce the minimum flow requirement for the Russian River between the mouth of Dry Creek and the mouth of the Russian River from 125 cfs to 70 cfs.
3. Reduce the minimum flow requirement for Dry Creek from Warm Springs Dam to the Russian River from 80 cfs to 40 cfs from May 1 to October 31.

During Dry Years:

1. Reduce the minimum flow requirement for the Russian River between the mouth of Dry Creek and the mouth of the Russian River from 85 cfs to 70 cfs.

¹⁹ The SWRCB approved the 2010 petition for temporary urgency change in its Order WR 2010-0018-DWR.

²⁰ The SWRCB approved the 2011 petition for temporary urgency change in its Order dated June 1, 2011. The 2012 petition was approved in the SWRCB's Order dated May 2, 2012. The 2016 petition for temporary urgency change was approved by the SWRCB in its Order dated May 4, 2016.

Russian River Watershed by Reach

East Fork Russian River

Upper Reach

Lower Reach

Dry Creek

Russian River Watershed Boundary

All flows are minimums, expressed in cubic feet per second (cfs)

* - Unless Lake Sonoma elevation is below 292.0, or if prohibited by the United States Government

Upper Russian River

Water Supply Conditions	NMFS Biological Opinion Proposed Changes				D1610 Requirements	
	Temporary Changes		Permanent Changes			
	Minimum Streamflow (cfs)	Period	Minimum Streamflow (cfs)	Period	Minimum Streamflow (cfs)	Period
Normal	125	May 1 - Oct 15	125	Jun 1 - Oct 31	185	Apr 1 - Aug 31
					150	Sep 1 - Oct 31
Normal - Dry Spring 1	125	May 1 - Oct 15	125	Jun 1 - Oct 31	185	Apr 1 - May 31
					150	Jun 1 - Mar 31

Dry Creek

Water Supply Conditions	NMFS Biological Opinion Proposed Changes				D1610 Requirements	
	Temporary Changes		Permanent Changes			
	Minimum Streamflow (cfs)	Period	Minimum Streamflow (cfs)	Period	Minimum Streamflow (cfs)	Period
Normal	-	-	40	May 1 - Oct 31	80	May 1 - Oct 31

Mouth Dry Creek

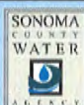
Lower Russian River

Water Supply Conditions	NMFS Biological Opinion Proposed Changes				D1610 Requirements	
	Temporary Changes		Permanent Changes			
	Minimum Streamflow (cfs)	Period	Minimum Streamflow (cfs)	Period	Minimum Streamflow (cfs)	Period
Normal	70 (85 cfs w/ buffer)	May 1 - Oct 15	70 (85 cfs w/ buffer)	Jan 1 - Dec 31	125	Jan 1 - Dec 31
Dry	-	-	70 (85 cfs w/ buffer)	Jan 1 - Dec 31	85	Jan 1 - Dec 31

Mouth Russian River

DISCLAIMER

This map document and associated data are distributed for informational purposes only "AS-IS" at the published scale and provided without warranty of any kind expressed or implied. The positional accuracy of the data is approximate and not intended to represent survey map accuracy. The Sonoma County Water Agency assumes no responsibility arising from use of this information.



Fish Habitat Flows and Water Rights Project Russian River Biological Opinion Recommendations



0 5 10 Miles

Figure 3-6

During the periods when the temporary changes have been in effect, the Water Agency has monitored water quality and fish, and collected and reported monitoring information as required by the Russian River Biological Opinion. This information has been used to develop the proposed Fish Flow Project and analyze its potential environmental impacts.

In 2002, 2004, 2007, and 2009, water storage levels in Lake Mendocino declined to low levels. In 2002, the Decision 1610 Hydrologic Index designated the water year as a “dry” year, and thus authorized reductions in the minimum instream flow requirements, but this was not the case in 2004, 2007 or 2009. In those years, the Water Agency petitioned for and the SWRCB approved temporary urgency changes to Water Agency water right permits to temporarily reduce the minimum instream flow requirements, to preserve Lake Mendocino water storage and to maintain a reliable water supply.²¹ Low water storage levels in Lake Mendocino during these years were due to lack of rainfall and, in 2007 and 2009, were also due to lower inflows into the East Fork Russian River from PG&E’s PVP, resulting from the 2004 changes in the FERC license for the PVP.

Because of the changes in operation of PG&E’s PVP since 2006, and consequent reductions in PG&E’s PVP diversions from the Eel River into the Russian River, the relationship between Eel River hydrologic conditions and Russian River hydrologic conditions has changed and it is no longer reasonable to use cumulative Lake Pillsbury inflows to determine the water-year type (*Normal, Dry, or Critical*) that governs Russian River and Dry Creek minimum instream flow requirements. It would better reflect local hydrologic conditions if the water-year type for Russian River minimum instream flow requirements were based on conditions in the Russian River watershed rather than on conditions in the Eel River watershed.

The Water Agency also petitioned for and the SWRCB approved temporary urgency changes in April and December 2013, 2014, and 2015, in response to ongoing, prolonged drought conditions resulting in low inflows into Lake Mendocino and declining water supply reliability in the reservoir. In May and December 2013, the temporary urgency change petition orders issued by the SWRCB specified minimum instream flow requirements for the Upper Russian River that were based on an index calculated from water storage in Lake Mendocino, rather than the Decision 1610 Hydrologic Index, which is calculated from cumulative inflow into Lake Pillsbury.

The Fish Flow Project is proposed and is necessary to change the Water Agency’s management of water supply releases from Lake Mendocino and Lake Sonoma to provide minimum instream flows that will improve rearing habitat for threatened and endangered salmon, as required by the NMFS’s Russian River Biological Opinion and CDFW’s Consistency Determination, and to update the Water Agency’s existing water rights to reflect current conditions.

²¹ The SWRCB approved the 2004 petition for temporary urgency change in its Order WRO 2004-0035. The 2007 temporary urgency change petition was approved in Order WRO 2007-0022. The 2009 temporary urgency change petition was approved in Order WRO 2009-0034-EXEC.

3.6 Description of the Proposed Project

The Proposed Project is the project that will best meet the project objective, taking into consideration comments and concerns of the public and regulatory agencies, engineering and operational feasibility, potential environmental effects, and legal and regulatory requirements. The Proposed Project is the “preferred or proposed alternative.” Several alternatives were considered while the Water Agency developed the Fish Flow Project, as discussed in detail in Chapter 7, “Alternatives.”

Under the Proposed Project, the Water Agency would manage water supply releases from Lake Mendocino and Lake Sonoma to provide minimum instream flows in the Russian River and Dry Creek that would improve habitat for listed salmonids and meet the requirements of the Russian River Biological Opinion. To implement the Fish Flow Project, changes to the Water Agency’s existing water right permits from the SWRCB are required, as described below.

Water right Permit 12947A authorizes the Water Agency to store up to 122,500 AFY of water in Lake Mendocino and Permit 16596 authorizes the Water Agency to store up to 245,000 AFY of water in Lake Sonoma. The combined amount of direct diversion and re-diversion authorized under Permits 12947A, 12949, 12950, and 16596 is limited to a maximum instantaneous rate of 180 cfs and to a maximum annual rate of 75,000 acre-feet per water year. The Proposed Project does not include any changes to either of these limits.

The Proposed Project includes the following components:

- amendments of the Water Agency’s water right permits to replace the existing hydrologic index (which is based primarily on Lake Pillsbury inflows) with the new Russian River Hydrologic Index;
- changes to the minimum instream flow requirements in these permits to improve rearing habitat conditions for juvenile steelhead and coho salmon;
- changes to these minimum instream flow requirements to improve conditions for fall-run Chinook salmon migration;
- extending the deadlines for completing full beneficial use in these permits to December 31, 2040, and
- adding the Occidental Community Services District and Town of Windsor existing points of diversion and re-diversion to the authorized points of diversion in these permits.

The Proposed Project does not propose to increase or otherwise change the quantities of water that the Water Agency diverts from the Russian River and Dry Creek and re-diverts from Lake Mendocino and Lake Sonoma under its water right permits, obtain any new authorizations for new rights, or construct new facilities.

3.6.1 Russian River Hydrologic Index

The Water Agency filed a petition to the SWRCB in August 2016 to change the hydrologic index in the Water Agency’s water right permits that is used to establish the water-year classifications that determine minimum instream flow requirements for the Russian River and Dry Creek to an index that more accurately reflects actual hydrologic conditions within the Russian River

watershed. The Decision 1610 Hydrologic Index as defined in the Water Agency's water right permits is a metric that establishes the water supply condition, which then is used to determine the applicable minimum instream flow schedule for the Upper Russian River, Lower Russian River, and Dry Creek. The Decision 1610 Hydrologic Index is comprised of schedules designated as *Normal*, *Dry*, and *Critical*. The Decision 1610 Hydrologic Index is based on cumulative inflow into Lake Pillsbury in the Eel River watershed beginning on October 1, with hydrologic conditions for the Russian River system evaluated on the first of the month from January 1 to June 1. There are three variations of the *Normal* water supply condition based on combined storage in Lake Pillsbury and Lake Mendocino on May 31. These three variations of the *Normal* water supply condition determine the required minimum instream flows for the Upper Russian River beginning on June 1. The thresholds of the Decision 1610 Hydrologic Index are described in Section 3.3.4.

Under the Proposed Project, the Decision 1610 Hydrologic Index would be replaced with the Russian River Hydrologic Index, which is comprised of five schedules of minimum instream flow requirements. The use of five new schedules rather than the current three schedules would allow for more responsive management of reservoir water supply storage, particularly for Lake Mendocino during the summer and fall months when preserving cold water in Lake Mendocino for later releases to benefit rearing steelhead and the fall-run Chinook salmon migration and other beneficial uses in the Upper Russian River is most crucial. The proposed five schedules would also allow for additional, smaller, incremental reductions in minimum instream flows, particularly in the Upper Russian River, if reservoir storage amounts are lower due to lower inflows. This allows the Russian River Hydrologic Index to better match minimum instream flow requirements to available water supply and to prevent large changes in minimum instream flows, which could impact habitat and other beneficial uses. This proposed index is summarized in Table 3-2. The petition filed with the SWRCB for the Proposed Project describes the specific changes to terms in the Water Agency's water right Permits 16596, 12947A, 12949, and 12950. These changes also are described in Appendix B.

Minimum Instream Flow Schedules

The proposed Russian River Hydrologic Index is comprised of five minimum instream flow schedules (Flow Schedules): Schedule 1, Schedule 2, Schedule 3, Schedule 4, and Schedule 5. Flow Schedule 1 being the wettest hydrology and Schedule 5 being the driest hydrology. The Upper Russian River, Lower Russian River, and Dry Creek each have a set of five Flow Schedules (Figure 3-7).

The proposed Flow Schedules for the East Fork Russian River from Coyote Valley Dam to the confluence with the Russian River, the Upper Russian River between the East Fork Russian River and Dry Creek, the Lower Russian River from the Russian River confluence with Dry Creek to the Pacific Ocean, and Dry Creek from Warm Springs Dam to its confluence with the Russian River are as follows:

Russian River Watershed by Reach

East Fork Russian River

Upper Reach

Lower Reach

Dry Creek

Russian River Watershed Boundary

All flows are minimums, expressed in cubic feet per second (cfs)

* - Unless Lake Sonoma elevation is below 292.0, or if prohibited by the United States Government

ALWAYS East Fork Russian River
Coyote Dam to Russian River 25 cfs

Upper Russian River Minimum Instream Flow Schedules 1 through 5

Flow Schedule	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct 1-15	Oct 16-31	Nov	Dec
1 (Wettest)	105	105	105	105	105	105	105	105	105	105	105	105	105
2	105	105	105	105	85	85	85	85	85	85	105	105	105
3	100	100	100	100	65	65	65	65	65	65	100	100	100
4	70	70	70	70	45	45	45	45	45	45	45	70	70
5 (Driest)	25	25	25	25	25	25	25	25	25	25	25	25	25

Dry Creek Minimum Instream Flow Schedules 1 through 5

Flow Schedule	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct 1-15	Oct 16-31	Nov	Dec
1 (Wettest)	75	75	75	75	50	50	50	50	50	50	105	105	105
2	75	75	75	75	50	50	50	50	50	50	105	105	105
3	75	75	75	50	50	50	50	50	50	50	75	75	75
4	75	75	75	50	50	50	50	50	50	50	75	75	75
5 (Driest)	75	75	75	50	50	50	50	50	50	50	75	75	75

Lower Russian River Minimum Instream Flow Schedules 1 through 5

Flow Schedule	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct 1-15	Oct 16-31	Nov	Dec
1 (Wettest)	135	135	135	135	70	70	70	70	70	70	135	135	135
2	135	135	135	135	70	70	70	70	70	70	135	135	135
3	135	135	135	135	70	70	70	70	70	70	135	135	135
4	85	85	85	85	50	50	50	50	50	50	85	85	85
5 (Driest)	35	35	35	35	35	35	35	35	35	35	35	35	35



Fish Habitat Flows and Water Rights Project
Proposed Russian River Hydrologic Index
Minimum Instream Flow Schedules



0 5 10
Miles

Figure
3-7

- Continuous streamflow in the East Fork Russian River from Coyote Valley Dam to its confluence with the Russian River of 25 cfs at all times.
- Upper Russian River
 - Flow Schedule 1: 105 cfs
 - Flow Schedule 2:
 - 85 cfs from May 1 through October 15
 - 105 cfs from October 16 through April 30
 - Flow Schedule 3
 - 65 cfs from May 1 through October 15
 - 100 cfs from October 16 through April 30
 - Flow Schedule 4
 - 45 cfs from May 1 through October 31
 - 70 cfs from November 1 through April 30
 - Flow Schedule 5: 25 cfs
- Lower Russian River
 - Flow Schedule 1:
 - 70 cfs from May 1 through October 15
 - 135 cfs from October 16 through April 30
 - Flow Schedule 2
 - 70 cfs from May 1 through October 15
 - 135 cfs from October 16 through April 30
 - Flow Schedule 3
 - 70 cfs from May 1 through October 15
 - 135 cfs from October 16 through April 31
 - Flow Schedule 4
 - 50 cfs from May 1 through October 15
 - 85 cfs from October 16 through April 30
 - Flow Schedule 5: 35 cfs
- Dry Creek
 - Flow Schedule 1
 - 75 cfs from January 1 through April 30
 - 50 cfs from May 1 through October 15
 - 105 cfs from October 16 through December 31
 - Flow Schedule 2
 - 75 cfs from January 1 through April 30
 - 50 cfs from May 1 through October 15
 - 105 cfs from October 16 through December 31
 - Flow Schedule 3
 - 50 cfs from April 1 through October 15
 - 75 cfs from November 1 through March 31
 - Flow Schedule 4
 - 50 cfs from April 1 through October 15
 - 75 cfs from November 1 through March 31
 - Flow Schedule 5

- 50 cfs from April 1 through October 15
- 75 cfs from November 1 through March 31

The Flow Schedules would be determined based on Lake Mendocino Cumulative Inflow Condition beginning January 1 and continuing to October 1. For example, if the Lake Mendocino Cumulative Inflow Condition is at Condition 1, the Upper Russian River, Lower Russian River, and Dry Creek minimum instream flow requirements would be at Flow Schedule 1. Beginning June 1, the Flow Schedule for the Upper Russian River would be determined by both the Lake Mendocino Cumulative Inflow Condition and the Lake Mendocino Storage Condition as described in the following sections. Figure 3-8 provides a summary of the procedure to determine Flow Schedules under the Proposed Project's Russian River Hydrologic Index.

Lake Mendocino Cumulative Inflow Condition

On the first day of each month starting January 1, cumulative inflow into Lake Mendocino would be evaluated monthly through October 1 for a total of ten condition evaluation dates each year determining the Flow Schedule for each reach. Cumulative inflow into Lake Mendocino is the calculated algebraic sum of releases from Lake Mendocino, increases in the storage in Lake Mendocino, and evaporation from Lake Mendocino beginning October 1 of the previous year. The Lake Mendocino Inflow Condition (Inflow Condition) determined at each evaluation date sets the Flow Schedule for the Upper Russian River, Lower Russian River, and Dry Creek. The Inflow Condition is evaluated based on cumulative inflow thresholds. For the cumulative inflow condition evaluations that occur January 1 through March 1, cumulative inflow into Lake Mendocino beginning October 1 of the previous year would be compared to a maximum inflow limit (Cumulative Inflow Limit). If the cumulative inflow is greater than the Cumulative Inflow Limit, then the cumulative inflow calculation is set equal to the Cumulative Inflow Limit. The Cumulative Inflow Limit was developed to discount inflow that is not usable. Usable inflow is defined as inflow that would be stored for more than 30 days or released for beneficial use. Inflow that is not usable is inflow that would be stored in the reservoir for a short period, but due to flood control operations of Lake Mendocino would be released downstream to maintain flood space in the reservoir.

As described in the "Development of the Russian River Hydrologic Index for the Fish Habitat Flows and Water Rights Project" included in Appendix C, the Cumulative Inflow Limit is a critical feature of the Russian River Hydrologic Index. Due to requirements of the flood operations at Lake Mendocino defined in the CVD Water Control Manual (USACE 1986a) and (USACE 2004), the maximum reservoir storage level for water supply is 68,400 acre-feet from November 1 to March 1, approximately 60 percent of the total reservoir storage capacity of 116,500 acre-feet. Storage increases to 111,000 acre-feet from May 10 to October 1 during the dry season months based on reduced risk of flooding during this period. The water supply storage limit for the wet season months can mean that for certain wet winters much of the inflow into the Lake Mendocino cannot be stored for water supply purposes, but instead is released during flood operations. This can be problematic if a wet winter is followed by a dry spring with very little rainfall and therefore low inflow into Lake Mendocino past March 1. This would create reservoir storage levels more consistent with dry year patterns. Due to these operational constraints, the

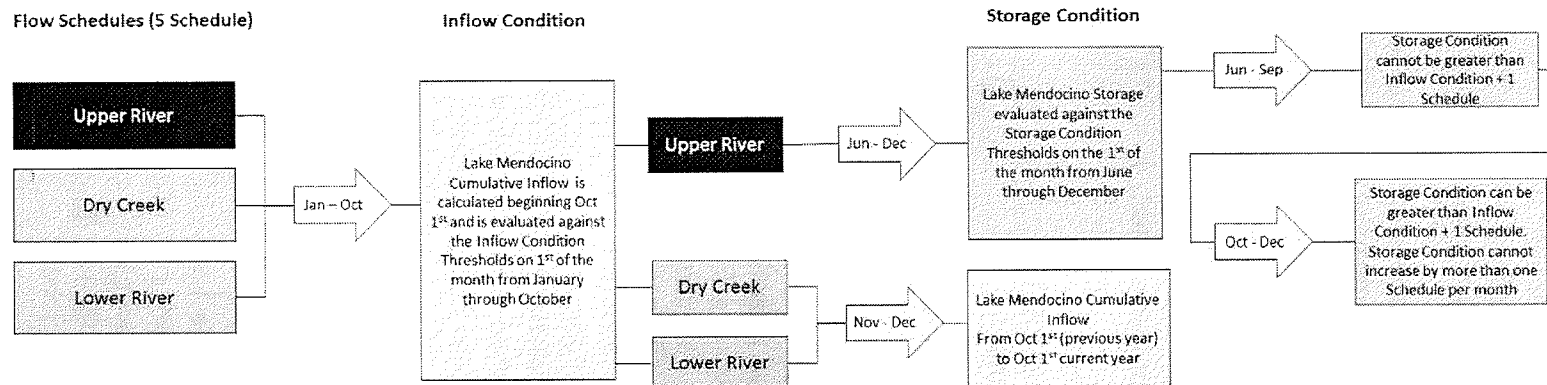


Figure 3-8. Russian River Hydrologic Index. Minimum instream flow schedules in Upper Russian River, Lower Russian River, and Dry Creek are determined by Lake Mendocino Cumulative Inflow Condition beginning January 1 and continuing to October 1. Beginning June 1, the Upper Russian River Flow Schedule is determined by both Lake Mendocino Cumulative Inflow Condition and Lake Mendocino Storage Condition.

Background and Project Description

Cumulative Inflow Limit is designed to cap the calculation of cumulative inflow to Lake Mendocino to a maximum level that better represents actual usable inflow into the reservoir. Without the maximum limit, the calculation of Lake Mendocino cumulative inflow could reach very high levels during wet winters, triggering Schedule 1 minimum instream flow requirements that cannot be sustained if an extended dry period persists after March 1 of that year.

To determine the appropriate Inflow Condition, the cumulative inflow into Lake Mendocino first must be calculated. Cumulative inflow into Lake Mendocino would be calculated as the daily accumulation beginning on October 1 of the sum for each day of the releases from Lake Mendocino, increases in storage in Lake Mendocino and evaporation from Lake Mendocino that occurred on that day. Under certain circumstances, the calculation of cumulative inflow would be adjusted on January 1, February 1 or March 1 of each year. Such adjustments would be made if the calculated cumulative inflow into Lake Mendocino exceeds the Cumulative Inflow Limit value listed below for the applicable date:

- 22,100 acre-feet as of January 1
- 37,500 acre-feet as of February 1
- 54,500 acre-feet as of March 1

If any such exceedance occurs, then cumulative inflow into Lake Mendocino for that date that would be used to determine the appropriate Inflow Condition number would be set to equal the Cumulative Inflow Limit value listed above for that date.

- The Lake Mendocino Cumulative Inflow Condition would be determined by the following thresholds: *Inflow Condition 1* exists whenever Inflow Conditions 2, 3, 4, or 5 do not exist, except in the months of January, February, and March, when it only exists if cumulative inflow to Lake Mendocino beginning on October 1 of each year, exceeds or is equal to the following cumulative inflow limit value:
 - 22,100 acre-feet as of January 1
 - 37,500 acre-feet as of February 1
 - 54,500 acre-feet as of March 1
- *Inflow Condition 2* exists when cumulative inflow to Lake Mendocino beginning on October 1 of each year is less than the following amount for the applicable month and greater than the applicable amount for Inflow Condition 3:
 - 22,100 acre-feet as of January 1
 - 37,500 acre-feet as of February 1
 - 54,500 acre-feet as of March 1
 - 64,100 acre-feet as of April 1
 - 73,200 acre-feet as of May 1
 - 80,600 acre-feet as of June 1
 - 87,100 acre-feet as of July 1
 - 93,500 acre-feet as of August 1
 - 99,800 acre-feet as of September 1
 - 105,000 acre-feet as of October 1

- *Inflow Condition 3* exists when cumulative inflow to Lake Mendocino beginning on October 1 of each year is less than the following amount for the applicable month and greater than the applicable amount for Inflow Condition 4:
 - 13,000 acre-feet as of January 1
 - 24,900 acre-feet as of February 1
 - 42,100 acre-feet as of March 1
 - 56,400 acre-feet as of April 1
 - 63,200 acre-feet as of May 1
 - 70,200 acre-feet as of June 1
 - 74,600 acre-feet as of July 1
 - 79,400 acre-feet as of August 1
 - 82,600 acre-feet as of September 1
 - 86,700 acre-feet as of October 1
- *Inflow Condition 4* exists when cumulative inflow to Lake Mendocino beginning on October 1 of each year is less than the following amount for the applicable month and greater than the applicable amount for Inflow Condition 5:
 - 10,800 acre-feet as of January 1
 - 18,000 acre-feet as of February 1
 - 31,900 acre-feet as of March 1
 - 50,200 acre-feet as of April 1
 - 55,700 acre-feet as of May 1
 - 62,200 acre-feet as of June 1
 - 66,600 acre-feet as of July 1
 - 70,700 acre-feet as of August 1
 - 74,900 acre-feet as of September 1
 - 78,600 acre-feet as of October 1
- *Inflow Condition 5* exists when cumulative inflow to Lake Mendocino beginning on October 1 of each year is less than the following amount for the applicable month:
 - 10,500 acre-feet as of January 1
 - 13,700 acre-feet as of February 1
 - 19,500 acre-feet as of March 1
 - 23,900 acre-feet as of April 1
 - 32,700 acre-feet as of May 1
 - 37,700 acre-feet as of June 1
 - 40,000 acre-feet as of July 1
 - 42,000 acre-feet as of August 1
 - 44,000 acre-feet as of September 1
 - 44,000 acre-feet as of October 1
- The Inflow Condition would be determined on the first day of each month from January through October. The Inflow Condition for November and December shall be the same as the Inflow Condition for the preceding October.

Lake Mendocino Storage Condition

As described previously, beginning June 1, the Upper Russian River Flow Schedule would be determined by both the Inflow Condition and the Lake Mendocino Storage Condition (Storage Condition). On the first day of each month from June 1 through December 1, the Storage Condition would be determined by evaluating storage in Lake Mendocino against storage condition thresholds. The storage condition thresholds would be used to set the Upper Russian River Flow Schedule if the flow schedule determined by the Storage Condition alone is greater (is drier) than the schedule determined by Inflow Condition. For the evaluation dates from June 1 through September 1, the Storage Condition can adjust the Upper Russian River Flow Schedule only one schedule higher (drier) than the value of the Inflow Condition. The evaluation of Lake Mendocino storage from June 1 to October 1 would allow for changes in Upper Russian River Flow Schedules to respond to variability in downstream demands. The evaluation of storage from November 1 to December 1 would allow for changes in Upper Russian River Flow Schedules to respond to years with low fall/early winter rainfall.

The Storage Condition could only increase the Upper Russian River Flow Schedule by one schedule over that determined by the Inflow Condition from June 1 to September 1. For example, if on June 1 the Inflow Condition is level 1 and the Storage Condition is level 3, the Flow Schedule for the Upper Russian River would be set to Schedule 2 for June 1. This schedule restriction is to ensure that the flow schedules for the Upper Russian River, the Lower Russian River and Dry Creek stay aligned to prevent and limit excessive releases from Warm Springs Dam that could result in violation of the Incidental Take Statement for dam releases established in the Russian River Biological Opinion.

As described in the "Development of the Russian River Hydrologic Index for the Fish Habitat Flows and Water Rights Project" included in Appendix C, from October 1 to December 1, Storage Condition could set the Flow Schedule for the Upper Russian River multiple schedules above the Inflow Condition, but can only do so at a rate of one schedule per month. For example, if Inflow Condition is level 1 on October 1, Storage Condition is level 4 and the September 1 Upper Russian River Flow Schedule was a Schedule 2, then the October 1 Flow Schedule would be set to Schedule 3. Moving on to the next month for this example, if the November 1 Storage Condition remained at a level 4 or higher, then the November 1 Flow Schedule would be Schedule 4. This change in restriction for this period is to respond to those years with late rainfall to allow increases in flow schedule (reductions in minimum instream flow requirements) in the Upper Russian River to reduce releases from Coyote Valley Dam and conserve storage in Lake Mendocino. This component is especially important should the late onset of rainfall actually be the beginning of a long-period drought when conservation of storage in Lake Mendocino would become critically important.

The Lake Mendocino Storage Condition would be determined by the following thresholds:

- *Storage Condition 1* exists whenever Storage Conditions 2, 3, 4, or 5 do not exist.
- *Storage Condition 2* exists when water in storage in Lake Mendocino is less than the following amount for the applicable month and greater than the applicable amount for Storage Condition 3:

- 78,900 acre-feet on June 1
- 76,100 acre-feet on July 1
- 70,400 acre-feet on August 1
- 64,600 acre-feet on September 1
- 58,500 acre-feet on November 1
- 54,500 acre-feet on October 1
- 54,400 acre-feet on December 1
- *Storage Condition 3* exists when water in storage in Lake Mendocino is less than the following amount for the applicable month and greater than the applicable amount for Storage Condition 4:
 - 73,500 acre-feet on June 1
 - 70,700 acre-feet on July 1
 - 65,100 acre-feet on August 1
 - 60,200 acre-feet on September 1
 - 54,200 acre-feet on October 1
 - 50,000 acre-feet on November 1
 - 51,550 acre-feet on December 1
- *Storage Condition 4* exists when water in storage in Lake Mendocino is less than the following amount for the applicable month and greater than the applicable amount for Storage Condition 5:
 - 70,000 acre-feet on June 1
 - 66,800 acre-feet on July 1
 - 61,200 acre-feet on August 1
 - 55,500 acre-feet on September 1
 - 49,100 acre-feet on October 1
 - 45,700 acre-feet on November 1
 - 45,600 acre-feet on December 1
- *Storage Condition 5* exists when water in storage in Lake Mendocino is less than the following amount for the applicable month:
 - 67,100 acre-feet on June 1
 - 62,800 acre-feet on July 1
 - 57,000 acre-feet on August 1
 - 50,600 acre-feet on September 1
 - 45,700 acre-feet on October 1
 - 40,800 acre-feet on November 1
 - 41,700 acre-feet on December 1
- Water in Lake Mendocino storage is the calculated total volume of water in storage below elevation 749.0 feet in Lake Mendocino, including dead storage.²² This elevation refers to the National Geodetic Vertical Datum of 1929. The calculation of the amount of water in Lake Mendocino storage would use the most recent reservoir volume survey made by the U. S. Geological Survey, U. S. Army Corps of Engineers, or other responsible agency.

²² Dead storage is capacity in a reservoir from which stored water cannot be evacuated by gravity.

- The Storage Condition for each month during January through May would be the same as the Inflow Condition for the same month and that condition would be used to set the applicable Flow Schedule.
- The Storage Condition for June through December would be determined on the first day of each of those months.
- For June through September, if the Storage Condition number is greater than the Inflow Condition number for the same month, then the applicable Flow Schedule number would be set equal to the Inflow Condition number plus one; otherwise, the applicable Flow Schedule number would be set equal to the Inflow Condition number.
- For October through December, if the Storage Condition number is greater than Inflow Condition number, then the applicable Flow Schedule number would be set equal to the Storage Condition number for that month, but no greater than the Flow Schedule number for the previous month plus one; otherwise, the applicable Flow Schedule number would be set equal to the Inflow Condition number.

The proposed Russian River Hydrologic Index was developed to maximize the occurrence of instream flow conditions favored for salmonid habitat and other beneficial uses; and to reliably provide releases from Lake Mendocino and Lake Sonoma for a 1-in-100 year drought scenario. The Lake Mendocino Inflow Condition thresholds and Lake Mendocino Storage Condition thresholds were developed to maximize the occurrence of Flow Schedule 1 and minimize the occurrence of Flow Schedule 5. Schedule 1 flows are considered to provide the range of flows that would improve conditions for juvenile steelhead and coho salmon rearing habitat in the dry season and spawning and migration habitat for the remainder of the year, as well as to improve conditions for fall-run Chinook salmon migration. Schedule 5 flows are the least favorable for aquatic habitat and other beneficial uses and were designed to only occur during the most critically dry periods. The “Development of the Russian River Hydrologic Index for the Fish Habitat Flows and Water Rights Project” included in Appendix C provides details regarding the development of the Russian River Hydrologic Index, including the occurrence of minimum instream flow schedules under the Proposed Project and resiliency to drought conditions.

Determination of the watershed’s hydrologic condition through the use of a hydrologic index that schedules minimum instream flow requirements establishes the percentage of occurrence of the various minimum instream flow schedules across the full range of expected hydrology. The intent of a hydrologic-based index is to characterize the water supply conditions for meeting minimum instream flow requirements. If the hydrologic index triggers flow schedules that are not matched with the water supply system’s ability to meet the required flows, the system will run out of water and the flows will not be met or temporary reductions in the required flows must be made.

3.6.2 Minimum Instream Flows for Steelhead and Salmon

The Russian River Biological Opinion determined that reducing minimum instream flows in the Upper Russian River during *Normal* years would enhance the quantity and quality of rearing habitat for steelhead in the Russian River between the confluence of the East Fork Russian River and Cloverdale, the reach that typically supports suitable summer water temperatures for

rearing juvenile steelhead (NMFS 2008). The Russian River Biological Opinion also concluded that conservation of the cold water pool in Lake Mendocino would increase the likelihood that water released from the reservoir would remain suitably cool for rearing steelhead through the summer and help ensure that sufficient flow could be released to facilitate upstream migration of fall run Chinook salmon (NMFS 2008). The Russian River Biological Opinion also determined that artificially high inflows into the Russian River estuary interfere with the normal processes that discharge river flow through or over the barrier beach to the ocean and that changing minimum instream flow requirements would enhance the prospects of enhancing salmonid estuarine rearing habitat.

These objectives were incorporated in the evaluation of a range of minimum instream flow alternatives and development of the proposed hydrologic index (see Chapter 7, "Alternatives"). Meeting these objectives requires balancing reservoir operations and water supply releases (operational feasibility) that meet demands downstream while meeting objectives for rearing habitat in the summer months, spawning habitat, particularly for Chinook salmon, in the fall, and reservoir and flow reliability.

3.6.4 Other Requested Changes to Water Right Permits

Petitions for Extensions of Time to Complete Full Beneficial Use of Water

The Water Agency's existing water right Permits 12947A, 16596, 12949, and 12950 specify a deadline of December 1, 1999, for the full application of water to beneficial use. In 1999, the Water Agency filed a petition to extend this deadline to December 1, 2020. The highest diversion and use prior to 1999 was 65,110 AFY for Water Year 1997, and the overall highest diversion and use historically occurred in Water Year 2004 and totaled 68,994 AFY. The Water Agency's significantly lower Russian River diversions during recent years is because of the Water Agency's and its contractors' successful water conservation, recycled water use, and groundwater conjunctive use programs and the downturn in the economy. Further details on this topic are provided in Chapter 4, Environmental Setting.

Table 3-2. Russian River Hydrologic Index with Upper Russian River, Lower Russian River, and Dry Creek Minimum Instream Flow Schedules [cubic feet per second (cfs)], Lake Mendocino Cumulative Inflow Condition [cumulative inflows into Lake Mendocino (acre-feet)], and Lake Mendocino Storage Condition [storage condition thresholds (acre-feet)]. Upper Russian River, Lower Russian River, and Dry Creek Flow Schedules determined by Lake Mendocino Cumulative Inflow Condition beginning January 1 and continuing to October 1. Beginning June 1 to December 1, the Upper Russian River Flow Schedule determined by both Lake Mendocino Cumulative Inflow Condition and the Lake Mendocino Storage Condition.

Minimum Instream Flow Schedules

East Fork Russian River (from Coyote Valley Dam to its confluence with the Russian River)													
The minimum instream flow shall be 25 cfs at all times.													
Upper Russian River (between the East Fork Russian River and confluence with Dry Creek) Minimum Instream Flow Schedules 1 through 5 (cfs)													
Flow Schedule	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct 1-15	Oct 16-31	Nov	Dec
1 (Wettest)	105	105	105	105	105	105	105	105	105	105	105	105	105
2	105	105	105	105	85	85	85	85	85	85	105	105	105
3	100	100	100	100	65	65	65	65	65	65	100	100	100
4	70	70	70	70	45	45	45	45	45	45	45	70	70
5 (Driest)	25	25	25	25	25	25	25	25	25	25	25	25	25
Lower Russian River (from the Russian River confluence with Dry Creek to the Pacific Ocean) Minimum Instream Flow Schedules 1 through 5 (cfs)													
Flow Schedule	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct 1-15	Oct 16-31	Nov	Dec
1 (Wettest)	135	135	135	135	70	70	70	70	70	70	135	135	135
2	135	135	135	135	70	70	70	70	70	70	135	135	135
3	135	135	135	135	70	70	70	70	70	70	135	135	135
4	85	85	85	85	50	50	50	50	50	50	85	85	85
5 (Driest)	35	35	35	35	35	35	35	35	35	35	35	35	35
Dry Creek (from Warm Springs Dam to its confluence with the Russian River) Minimum Instream Flow Schedules 1 through 5 (cfs)													
Flow Schedule	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct 1-15	Oct 16-31	Nov	Dec
1 (Wettest)	75	75	75	75	50	50	50	50	50	50	105	105	105
2	75	75	75	75	50	50	50	50	50	50	105	105	105
3	75	75	75	50	50	50	50	50	50	50	75	75	75
4	75	75	75	50	50	50	50	50	50	50	75	75	75
5 (Driest)	75	75	75	50	50	50	50	50	50	50	75	75	75

Table 3-2 (continued).

Table 3-2 (continued)

Lake Mendocino Cumulative Inflow Condition ¹ - Cumulative Inflow to Lake Mendocino Thresholds (acre-feet)											Conditions prevailing on Oct 1 apply through Dec 31
Inflow Condition	Jan 1	Feb 1	Mar 1	Apr 1	May 1	Jun 1	Jul 1	Aug 1	Sep 1	Oct 1	
1 (Cumulative Inflow Limit, Wettest)	22,100	37,500	54,500								
2	22,100	37,500	54,500	64,100	73,200	80,600	87,100	93,500	99,980	105,000	
3	13,000	24,900	42,100	56,400	63,200	70,200	74,600	79,400	82,600	86,700	
4	10,800	18,000	31,900	50,200	55,700	62,200	66,600	70,700	74,900	78,600	
5 (Driest)	10,500	13,700	19,500	23,900	32,700	37,700	40,000	42,000	44,000	44,000	
¹ The Inflow Condition would be determined on the first day of each month from January through October. Cumulative inflow to Lake Mendocino is the calculated algebraic sum of releases from Lake Mendocino, increases in the storage in Lake Mendocino, and evaporation from Lake Mendocino beginning on October 1 through the evaluation date. Inflow Condition 1 exists whenever Inflow Conditions 2, 3, 4, or 5 do not exist, except in the months of January 1, February 1, and March 1 when it only exists if cumulative inflow exceeds or is equal to the cumulative inflow limit. Inflow Condition 2, 3, 4, or 5 exists if cumulative inflow is less than the identified value on the first day of each month. The Inflow Condition for November and December shall be the same as the Inflow Condition for the preceding October.											
Storage Condition ² - Lake Mendocino Storage Thresholds (acre-feet) ³											
Storage Condition	Jun 1	Jul 1	Aug 1	Sep 1	Oct 1	Nov 1	Dec 1				
1 (Wettest)											
2	78,900	76,100	70,400	64,600	58,500	54,500	54,400				
3	73,500	70,700	65,100	60,200	54,200	50,000	51,550				
4	70,000	66,800	61,200	55,500	49,100	45,700	45,600				
5 (Driest)	67,100	62,800	57,000	50,600	45,700	40,800	41,700				
² Sets minimum instream flow requirement on the Upper Russian River only. Storage condition is evaluated on the first day of each month from June 1 to December 1. Flow schedule determined by Storage Condition cannot be less than that determined by Inflow Condition. If the Storage Condition designation is less than the Inflow Condition, then the Upper Russian River Flow Schedule shall be set equal to the Inflow Condition. Flow Schedule determined by Storage Condition cannot be greater than one schedule above Inflow Condition from June 1 through September 1. If Storage Condition is greater than the Inflow Condition for the evaluation months of June 1 through September 1, then the Upper Russian River Flow Schedule shall be set equal to one schedule greater than the Inflow Condition. For October through December, if the Storage Condition number is greater than Inflow Condition number, then the applicable Flow Schedule number would be set equal to the Storage Condition number for that month, but no greater than the Flow Schedule number for the previous month plus one; otherwise, the applicable Flow Schedule number would be set equal to the Inflow Condition number.											
³ Estimated water supply storage space is the calculated reservoir volume below elevation 749.0 feet in Lake Mendocino. The elevation refers to the National Geodetic Vertical Datum of 1929. The calculation shall use the most recent reservoir volume survey made by the U.S. Geological Survey, U.S. Army Corps of Engineers, or other responsible agency.											

Background and Project Description

The Water Agency anticipates that total diversions under its water right permits will increase over time, even with water conservation, recycled water use, and groundwater conjunctive use, because of population and economic growth in Water Agency's service area. The Water Agency therefore has filed a petition to extend the current the beneficial use deadline to 2040.

The Water Agency's wholesaler 2015 UWMP (Brown and Caldwell 2016) concluded that, with the savings expected from water conservation, recycled water and groundwater conjunctive use, and based on the water demand projections described in the 2015 UWMP, the annual diversion and re-diversion limit of 75,000 AFY in the Water Agency's water right permits may be exceeded in 2035 (Brown and Caldwell 2016). The Water Agency estimates that this limit will be exceed by about 117 AFY in 2035 and by almost 1,000 AFY in 2040.

Demand Analysis

The 2015 UWMP includes a detailed projection of future water demand through 2040. The demand analysis used to make this projection considered projected future demographics, historical water use characteristics, contractor use of recycled water and local water supplies, alternative levels of water conservation efforts, and resulting water demand projections. The projections were made considering the effects of the reductions in water use that would result from new plumbing code requirements, current and future water conservation efforts, and future recycled water projects. The Water Agency coordinated with its water contractors and MMWD as they developed population and water demand projections through 2040 as part of their urban water management plans.²³ The projections of water demands presented in the Water Agency's 2015 UWMP include the combined results of these individual evaluations. Population and employment forecasts were developed by each of the Water Agency's contractors and transmission system customers and provided to the Agency. The Water Agency developed population and water demand projections for other water transmission system customers and Russian River customers that are not required to prepare urban water management plans. With the exception of the City of Healdsburg, the projected demands for these customers were evaluated by considering the historical total demands and Water Agency deliveries to each customer and developing projected deliveries through 2040 based on changes in projected service population. Using the 'ABAG Projections 2009 by Census Tract' dataset, the population growth rates for the customer service areas were estimated based on analyses of the overlapping census tracts. The estimated future annual diversions by the City of Healdsburg under the Water Agency's water rights were based on discussions with the City of Healdsburg and the fact that the Water Agency's water supply contract with the City primarily is to provide a backup water supply.

Future Demands

The modeled estimated future demands of the Water Agency's water contractors and other Water Agency customers from the Russian River are estimated to be approximately 75,565 AFY through 2040 (Brown and Caldwell 2016). Table 3-7 provides a summary of projected future demands through 2040.

²³ Water contractors that provided population and water demand projections to the Water Agency include the Cities of Santa Rosa, Petaluma, Rohnert Park, Cotati, and Sonoma, the Town of Windsor, and the North Marin and Valley of the Moon Water Districts.

Table 3-3. Future Water Agency Russian River Demands modeled in 2015 Urban Water Management Plan.

Year	Demand (acre-feet)
2020	66,260
2025	70,309
2030	73,011
2035	75,117
2040	75,987

The 2015 UWMP states that additional water supply projects will be needed to meet projected future demands. Additional projects could include obtaining additional water right permits or petitioning to modify terms of existing water right permits, new water supply diversion facilities, and transmission system projects necessary to convey additional amounts of water. The UWMP states that the near-term demand projections are conservative estimates and the growth rate of water demand may be lower. The potential need to increase the 75,000 AFY diversion and re-diversion limit in the Water Agency's water right permits and the need for future projects will be reevaluated in the Water Agency's 2020 UWMP and in each subsequent UWMP as necessary. See Chapter 6, "Other Statutory Requirements" for additional discussion of the potential effects of extending the deadline for beneficial use.

Petition to Add Additional Authorized Points of Diversion

The Water Agency has agreements with specific entities that authorize them to divert water from the Russian River under the Water Agency's water right permits using their own facilities. These entities are the City of Healdsburg, Town of Windsor/Windsor Water District, Camp Meeker Recreation and Park District, and Occidental Community Services District. These agreements are described in Section 3.3.7, Water Supply Agreements. The Water Agency's agreements with these customers require them to use any water right they have before using the Water Agency's water rights. The agreements with Town of Windsor and Occidental CSD require the Water Agency to file petitions with the SWRCB for changes to the Water Agency's water right permit that will allow these Russian River customers to divert water from the Russian River at specific points of diversion under the Water Agency's permits. The Water Agency petitioned the SWRCB to authorize the addition of the Occidental CSD and Town of Windsor points of diversion in October 2002 and May 2004, respectively. Both petitions are still pending before the SWRCB. The Water Agency's agreement with the Occidental CSD will become effective when the SWRCB approves the petition to add the Occidental CSD point of diversion.

The addition of the Occidental CSD's point of diversion would add one new point of diversion and re-diversion to the Water Agency's water right permits. This is an existing point of diversion and re-diversion that is located at California Coordinate System, Zone 2, North 292,580 and East 1,711,590. The existing point of diversion is located adjacent to the Camp Meeker Recreation and Park District well in the town of Monte Rio, Sonoma County. Occidental CSD is currently provided water through an agreement with Camp Meeker Recreation and Park District. The SWRCB authorization of the petition would result in the Water Agency's agreement with Occidental CSD becoming effective and would allow Occidental CSD to take and the Water Agency to provide water to the Occidental CSD under the Water Agency's Permits 16596,

12947A, 12949, and 12950. The point of diversion is an existing offset well (Occidental Town Well No. 1), which diverts underflow of the Russian River. The well is approximately 90 feet deep. Water would be delivered to the Occidental CSD's existing distribution system through Camp Meeker Recreation and Park District's existing system. The Occidental CSD prepared an Initial Study and Mitigated Negative Declaration for the point of diversion and associated construction on April 12, 2002. The Water Agency filed a Notice of Determination as a responsible agency on April 23, 2002, for its agreement with Occidental CSD and the point of diversion. The Occidental CSD Initial Study and Mitigated Negative Declaration approved on April 18, 2002, is hereby incorporated by reference into the Fish Flow Project EIR (Pacific Municipal Consultants 2002).

The addition of the Town of Windsor points of diversion would add two existing points of diversion and re-diversion at Town of Windsor Well No. 10 and Well No. 11 to the authorized points of diversion in the Water Agency's water right permits. The existing Windsor Well No. 10 is located at California Coordinate System, Zone 2, North 324,968 East 1,755,519. The existing Windsor Well No. 11 is located at California Coordinate System, Zone 2, North 324,878 East 1,755,480. The petition filed in 2004 also requested renaming Windsor Well No. 6 to Windsor Well No. 9 and to correct the coordinates of Windsor Well Nos. 7, 8, and 9 that are listed in the Water Agency's permits.

The two points of diversion and re-diversion are located adjacent to the Town of Windsor's well field near Eastside Road in Sonoma County. Approval of this petition would allow the Town of Windsor to take, and the Water Agency to provide, water under the Water Agency's Permits 16596, 12947A, 12949, and 12950. The Town of Windsor prepared two CEQA documents for the construction and operation of these wells: Mitigated Negative Declaration, Russian River Water Supply Facility Improvements: Well 10 and Emergency Generator (approved April 11, 2011), and Mitigated Negative Declaration, Russian River Water Supply Facility Improvements: Well 11 (approved March 17, 2004). The Town of Windsor's Mitigated Negative Declaration, Russian River Water Supply Facility Improvements: Well 10 and Emergency Generator (approved April 11, 2011) (Brelje and Race Engineers 2001), and Mitigated Negative Declaration, Russian River Water Supply Facility Improvements: Well 11 (approved March 17, 2004) (Brelje and Race Engineers 2004) are hereby incorporated by reference.

3.7 Project Alternatives to be Considered

This EIR considers the Proposed Project, as well as the No Project 1 Alternative and No Project 2 Alternative.

The No Project 1 Alternative is comprised of the hydrologic index and minimum instream flow requirements required by the Water Agency's existing water right permits as approved by the SWRCB's Decision 1610 and the 75,000 acre-foot per year water right demand. These are described in Section 3.3.4 and shown in Figure 3-4.

The No Project 2 Alternative is comprised of the hydrologic index and minimum instream flow requirements included in the Water Agency's existing water right permits as approved by the SWRCB's Decision 1610 and the 75,000 acre-foot per year water right demand. This alternative

incorporates the Russian River Biological Opinion's temporary changes to minimum instream flow requirements as described in Section 3.5 and shown in Figure 3-6. These minimum instream flow requirements would apply from May 1 to October 15 and are 125 cfs in the Upper Russian River under *Normal* and *Normal-Dry Spring 1* conditions and 70 cfs in the Lower Russian River under *Normal* conditions. The hydrologic index and all other minimum instream flow requirements would be the same as the Water Agency's existing water right permits as approved by the SWRCB's Decision 1610.

These alternatives, and a comparison of advantages and disadvantages, are described in detail in Chapter 7, "Alternatives."

3.8 References

- Beach, Robert F. 2002. "History of the Development of the Water Resources of the Russian River." Santa Rosa, California: Sonoma County Water Agency, February.
- Brelje and Race Engineers. 2001. "Russian River Water Supply Facility Improvements Well 10 and Emergency Generators." Prepared for Town of Windsor.
- Brelje and Race Engineers. 2004. "Russian River Water Supply Facility Improvements Well 11 Initial Study and Mitigated Negative Declaration." Prepared for Town of Windsor.
- Brown and Caldwell. 2016. "2015 Urban Water Management Plan." Rancho Cordova, California: Prepared for Sonoma County Water Agency, June.
- NMFS. 2008. "Biological Opinion for Water Supply, Flood Control Operations, and Channel Maintenance conducted by the U.S. Army Corps of Engineers, the Sonoma County Water Agency, and the Mendocino County Russian River [...]." *Endangered Species Act, Section 7 Consultation*. National Marine Fisheries Service, September 24.
- Pacific Municipal Consultants. 2002. "Occidental CSD Water Project Connection to Camp Meeker System Initial Study and Mitigation Negative Declaration. SCH# 20001032053."
- SCWA. 2015. "Lake Mendocino Water Supply Reliability Evaluation Report." Santa Rosa, California: Sonoma County Water Agency, April 30.
- SCWA. 2013. *Water Supply Strategies Action Plan*. Sonoma County Water Agency.
- SWRCB. 2013. "Estimate of the Depletion of under D-1030's 10,000-acre-foot of Reservation Water of the Russian River Mainstem in Sonoma County [PDF file]." Received from Katherine Lee via email on May 21, 2013, January.
- . 1974. "Order Granting for Limited Purpose Reconsideration of Board Order WR 74-30." State of California: State Water Resources Control Board.
- USACE. 2004. "Coyote Valley Dam and Lake Mendocino, Russian River, California, Water Control Diagram." *Appendix I to Master Water Control Manual, Russian River Basin, California*. U.S. Army Corps of Engineers, revised 2004, January.
- . 1986a. "Coyote Valley Dam and Lake Mendocino, Russian River, California, Water Control Manual." *Appendix I to Master Water Control Manual, Russian River Basin, California*. U.S. Army Corps of Engineers, April.
- . 1984. "Warm Springs Dam and Lake Sonoma, Dry Creek, California, Water Control Manual." *Appendix II to Master Water Control Manual, Russian River Basin, California*. U.S. Army Corps of Engineers, September.



**NORTH MARIN
WATER DISTRICT**

999 Rush Creek Place
P.O. Box 146
Novato, CA 94948

PHONE

415.897.4133

FAX

415.892.8043

EMAIL

info@nmwd.com

WEB

www.nmwd.com

November 17, 2010

Sonoma County Water Agency
Attn: Jessica Martini-Lamb
Principal Environmental Specialist
404 Aviation Boulevard
Santa Rosa, CA 95403

Re: North Marin Water District Comments on Fish Habitat Flows and Water Rights Project – Notice of Preparation of Environmental Impact Report

Dear Ms. Martini-Lamb:

Thank you for the opportunity to offer our comments on the subject project.

We urge the Sonoma County Water Agency to move quickly to comply with the Biological Opinion requirements and pursue permanent changes to Decision 1610 flows as proscribed in the Biological Opinion. We are also supportive of changing the hydrologic index from the Eel River/Lake Pillsbury to Lake Mendocino.

It's noted in the Notice of Preparation that minimum proposed instream flows for Chinook salmon may extend beyond the months required by the Biological Opinion for the Upper Russian River (upstream of the confluence of Dry Creek and downstream of the confluence of the east and west forks). While it may be appropriate to consider such extension of the minimum flow timing, it's suggested this be coordinated in conjunction with the hydrologic index change based on appropriate measurements and dates of storage in or inflows into Lake Mendocino.

Additionally, it's noted that minimum instream flows between May 1 and October 31 of each year for Dry Creek are proposed to be 40 cubic feet per second pursuant to the Biological Opinion. It's suggested that some means of adaptive management be considered to coordinate with and accommodate the future Dry Creek Habitat Enhancement Projects and potential Dry Creek bypass pipeline. Higher flows may be necessary in the reach of Dry Creek from the Warm Springs Dam to Yoakim Bridge in order to accommodate a diversion for a Dry Creek bypass pipeline.

Thank you for the opportunity to comment on the proposed Notice of Preparation.

Sincerely,

Chris DeGabriele
General Manager

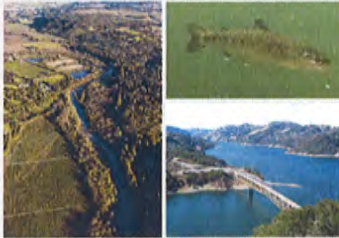
CD/rr

T:\GMS\SCWA\2010\comments on fish habitat flows and WR project.doc

DIRECTORS: JACK BAKER • RICK FRAITES • STEPHEN PETTERLE • DENNIS RODONI • JOHN C. SCHOONOV
OFFICERS: CHRIS DEGABRIELE, General Manager • RENEE ROBERTS, Secretary • DAVID L. BENTLEY, Auditor-Controller • DREW

ATTACHMENT 3

Fish Habitat Flows and Water Rights Project
Draft Environmental Impact Report
Public Hearing - September 13, 2016



Grant Davis
Don Seymour
Jessica Martini-Lamb



www.sonomacountywater.org



Agenda

- Purpose of Hearing
 - Overview of Draft EIR
 - Receive public comments
- Project Background and Description
- EIR Overview
 - CEQA process and summary of impacts
- Public Hearing
 - Please fill out speaker card
 - Written comments also accepted

Background

- NMFS Russian River Biological Opinion and CDFW Consistency Determination
 - Evaluated effects of U.S. Army Corps of Engineers and Water Agency operations in the Russian River watershed on three listed salmon species
 - Endangered coho salmon
 - Threatened Chinook salmon and steelhead
 - Concluded operations potentially jeopardize coho salmon and steelhead

Minimum Instream Flow Change Requirements

- The Water Agency must pursue permanent changes to minimum instream flow requirements to enhance habitat conditions for juvenile steelhead and coho salmon rearing



Water Right Permits

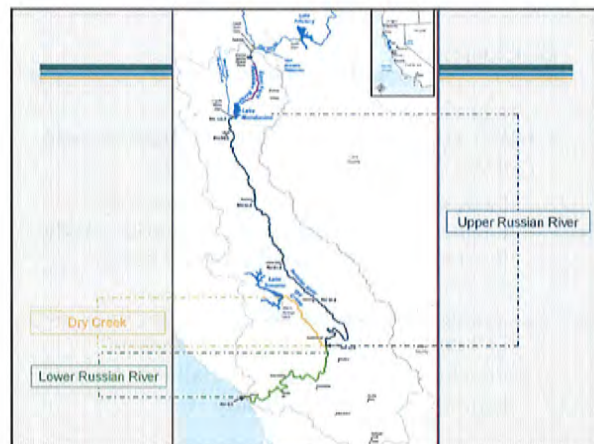
- Water Agency's permits include the hydrologic index and minimum instream flow requirements established in 1986 by State Water Resources Control Board's Decision 1610
- Authorize diversion and re-diversion of 75,000 acre-feet per year



Existing Index and Minimum Flow Requirements



Existing Index and Minimum Flow Requirements

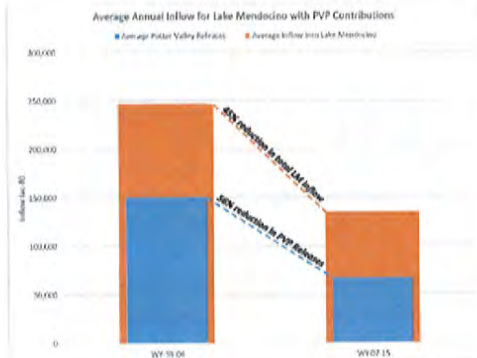


Project Objectives

- To manage Lake Mendocino and Lake Sonoma water supply releases to provide instream flows that will improve habitat for threatened and endangered fish species, and to update the Water Agency's existing water rights to reflect current conditions.
- The new minimum instream flow requirements proposed by the Fish Flow Project were developed to meet the requirements of the Russian River Biological Opinion to improve habitat for threatened and endangered salmonid species.

Project Purpose and Need

- Hydrologic index and minimum instream flow requirements for Russian River and Dry Creek established by Decision 1610 are no longer appropriate
- Russian River Biological Opinion concluded that the continued operations of Coyote Valley Dam and Warm Springs Dam by the USACE and the Water Agency in a manner similar to recent historic practices are likely to jeopardize and adversely modify the critical habitats of endangered coho salmon and threatened steelhead.
- Changes in inflows into Lake Mendocino reflect the changes in operation of PG&E's Potter Valley Project



Temporary Urgency Changes

- Water storage levels in Lake Mendocino declined to low levels in 2002, 2004, 2007, 2009, 2013, 2014, and 2015
- In 2002, the Decision 1610 Hydrologic Index designated the water year as a "dry" year, and authorized reductions in minimum instream flow requirements, but not in other years
- In 2004, 2007, 2009, 2013-2015, the Water Agency petitioned for, and the SWRCB approved, temporary urgency changes to Water Agency water right permits to temporarily reduce the minimum instream flow requirements to preserve Lake Mendocino water storage and to maintain a reliable water supply

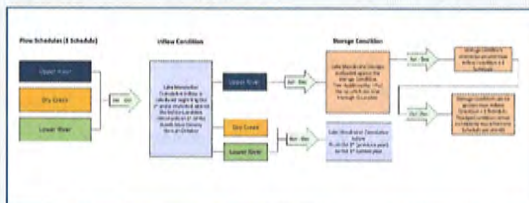
Project Description

- The Fish Flow Project would amend Water Agency's water right permits to:
 - replace the existing hydrologic index with a new Russian River hydrologic index;
 - change minimum instream flow requirements to improve rearing habitat conditions for juvenile steelhead and coho salmon and conditions for fall-run Chinook salmon migration;
 - extend the deadlines for completing beneficial use of the water authorized in the water right permits to December 31, 2040;
 - add the Occidental Community Services District and Town of Windsor points of diversion and re-diversion to the authorized points of diversion in these permits.
- The project does not propose to increase or otherwise change the quantities of water that the Water Agency diverts from the Russian River and Dry Creek and re-diverts from Lake Mendocino and Lake Sonoma under its water right permits, obtain authorizations for new rights, or construct new facilities

Russian River Hydrologic Index



Russian River Hydrologic Index



Minimum Instream Flow Schedules

Flow Schedule	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	100	100	100	100	100	100	100	100	100	100	100	100
2	100	100	100	100	100	100	100	100	100	100	100	100
3	100	100	100	100	100	100	100	100	100	100	100	100
4	100	100	100	100	100	100	100	100	100	100	100	100
5	100	100	100	100	100	100	100	100	100	100	100	100

Flow Schedule	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	100	100	100	100	100	100	100	100	100	100	100	100
2	100	100	100	100	100	100	100	100	100	100	100	100
3	100	100	100	100	100	100	100	100	100	100	100	100
4	100	100	100	100	100	100	100	100	100	100	100	100
5	100	100	100	100	100	100	100	100	100	100	100	100

Flow Schedule	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	100	100	100	100	100	100	100	100	100	100	100	100
2	100	100	100	100	100	100	100	100	100	100	100	100
3	100	100	100	100	100	100	100	100	100	100	100	100
4	100	100	100	100	100	100	100	100	100	100	100	100
5	100	100	100	100	100	100	100	100	100	100	100	100

Time Extension

- Water Agency's water right permits include timeframe to apply total authorized diversions of re-diversions of 75,000 acre-feet per year of water to beneficial use
- Propose to extend deadline to 2040
- Not requesting additional water rights

Points of Diversion

- Petitioned State Water Board to authorize the addition of the Occidental CSD and Town of Windsor points of diversion in October 2002 and May 2004, respectively. Both petitions are still pending before the SWRCB
- Propose to add Occidental CSD's existing point of diversion as one new point of diversion and re-diversion to the Water Agency's water right permits
- Propose to add two of Town of Windsor existing points of diversion and re-diversion at Well No. 10 and Well No. 11 to the authorized points of diversion in the Water Agency's water right permits
- Agreements with Occidental CSD and Town of Windsor would require them to use any water right they have before using the Water Agency's water rights
- These are existing points of diversion analyzed in separate environmental documents and do not require new construction

California Environmental Quality Act

- Disclose environmental impacts
- Reduce/minimize environmental impacts
- Disclose public agency decision making
- Foster interagency coordination
- Include public participation

EIR Public Review Process

- Notice of Preparation
 - Circulated from September 29 to November 15, 2010
 - Public comments on scope of analysis
 - Comments reviewed during preparation of Draft EIR
 - Scoping report included as appendix to Draft EIR
- Draft EIR
 - 60-day public review period from August 19 to October 17, 2016
 - Notified in local papers, direct mailings, Water Agency website
 - Two informational public workshops held on August 22 in Cloverdale and August 24 in Monte Rio
- Final EIR
 - Anticipated late 2016

EIR Analysis Sections

- Hydrology
- Water Quality
- Fisheries Resources
- Vegetation and Wildlife
- Recreation
- Energy
- Greenhouse Gas Emissions and Climate Change
- Cultural Resources
- Aesthetics
- Public Services and Utilities
- Cumulative
- Other Statutory Requirements
- Alternatives

CEQA Analysis

- Baseline Conditions
 - Decision 1610 hydrologic index and minimum instream flow requirements
 - Assumes diversions from the Eel River into the Russian River by PG&E's PVP consistent with 2004 FERC order and will be consistent with PVP operations from water years 2006 to 2014
- Proposed Project
 - Incorporates Russian River Hydrologic Index, the accompanying proposed new minimum instream flow requirements, diversions under the Water Agency's water right permits of 75,000 acre-feet/year with time extension
 - Adds Occidental CSD and Town of Windsor points of diversion
 - All other assumptions remain the same as Baseline Conditions

CEQA Analysis

- No Project 1 Alternative
 - Operations of Lake Mendocino and Lake Sonoma and diversions in accordance with the Water Agency's existing water right permits
- No Project 2 Alternative
 - Operations of Lake Mendocino and Lake Sonoma with diversions in accordance with the Water Agency's existing water right permits, but with the Russian River Biological Opinion temporary minimum instream flow requirements during the summer months for the mainstem Russian River as follows:
 - under *Normal* conditions from May 1 to October 15: 125 cfs in the Upper Russian River and 70 cfs in the Lower Russian River
 - All other assumptions remain the same as for the Baseline Condition

Summary of Key Resource Analyses

- Fisheries
- Hydrology
- Water Quality
- Recreation
- Public Services and Utilities

Fisheries

- Beneficial effect to:
 - Quantity of rearing habitat for steelhead and Chinook salmon fry, rearing juvenile Chinook salmon in the Upper Russian River
 - Quality of rearing habitat for juvenile steelhead through water temperatures in the months April through November
 - movement of salmonids in the Upper Russian River and Dry Creek
 - Quantity of spawning habitat for salmonids in the Russian River
 - Habitat for spawning sunfish at Lake Mendocino and Lake Sonoma
- Potential impacts to:
 - Quality of habitat for rearing juvenile Chinook salmon (water temperatures) from April through June in Upper Russian River and Dry Creek. Conclusion: **Less than Significant**
 - Emigration of coho salmon (water temperatures) from March through May in the Russian River and Dry Creek. Conclusion: **Less than Significant**
 - Spawning and egg incubation of steelhead (water temperatures) from December through May in Russian River (above Cloverdale) and Dry Creek. Conclusion: **Less than Significant**
 - Habitat for spawning American shad in the Russian River. Conclusion: **Less than Significant**

Hydrology

- Potential impacts to:
 - Groundwater supplies or groundwater recharge. Minimum instream flows maintain perennial surface flows and groundwater recharge throughout the year. Conclusion: **Less than Significant**
 - Existing drainage patterns that would result in substantial erosion or sedimentation. Overall stage changes are small and likely have minor effect on water surface slope. Conclusion: **Less than Significant**
 - Alter areas of exposed shoreline in Lake Mendocino or Lake Sonoma that would result in substantial erosion or sedimentation. Water surface elevation in Lake Mendocino would generally increase, exposing less shoreline to potential surface erosion, and would be similar to baseline in Lake Sonoma. Conclusion: **Less than Significant**
 - Contribute to inundation by tsunami. Russian River estuary is in mapped tsunami hazard zone. Existing risk of flooding under baseline conditions. Conclusion: **Significant and Unavoidable**

Water Quality

- Potential impacts that could result in violations of water quality standards or waste discharge requirements or otherwise substantially degrade water quality relating to:
 - Lake Mendocino and Lake Sonoma included in 303(d) list for mercury in fish tissue. Primary sources would continue to be erosional sources from adjacent soils and tributaries to the lakes, as well as atmospheric deposition. Changes in water surface elevations in reservoirs would not change erosion potential of nearshoreline and increase contributions. Conclusion: **Less than Significant**
 - Portions of Russian River on 303(d) list for aluminum and specific conductance. Overall stage changes are small and likely have minor effect on water surface slope. Conclusion: **Less than Significant**

Water Quality

- Potential impacts that could result in violations of water quality standards or waste discharge requirements or otherwise substantially degrade water quality relating to biostimulatory substances (nitrogen, phosphorus, chlorophyll-a)
 - High concentrations of nutrients can contribute to excessive algal growth in rivers and streams, resulting in nuisance conditions that can affect dissolved oxygen, pH, temperature, and overall aquatic habitat, including blue-green algae
 - SWRCB has begun developing criteria for algae biomass concentrations that can cause nuisance conditions, but none specific to the Russian River
 - Water quality monitoring data under range of flow conditions demonstrate elevated concentrations of biostimulatory substances under Baseline
 - Conclusion: **Significant and Unavoidable**

Recreation

- Potential impacts that could:
 - Affect access to Lake Mendocino Bushay and Kyen campgrounds. Conclusion: **Less than significant**
 - Substantially alter or inhibit access to activities such as swimming and sunbathing in the Russian River. Conclusion: **Less than significant**
 - Substantially alter or inhibit access to boating in Russian River from Rio Lindo academy to confluence of Dry Creek. Conclusion: **Less than significant**
 - Substantially alter or inhibit access to recreational facilities or activities such as boating in the Russian River from Wohler to the Pacific Ocean. Conclusion: **Less than Significant**
 - Changes related to the No Project 1 Alternative could substantially alter or inhibit access to fishing in the Russian River. Conclusion: **Less than Significant**

Public Services and Utilities

- Potential impact that could adversely affect when holders of water right permits with minimum bypass flow requirements could divert from Russian River
- Diversions made by water right permit holders with bypass flow terms were accounted for in project modeling and are the same as Baseline Conditions
- Proposed Project, No Project 1 and No Project 2 alternatives assume same water demands for municipal and industrial water uses, agricultural diversions, and other water balance losses as Baseline Conditions
- Water Agency makes releases from Lake Mendocino and Lake Sonoma to meet downstream demands and maintain minimum instream flow requirements and would continue to operate in this manner under the Proposed Project, just as under Baseline Conditions
- Water right permits are issued and enforced by the State Water Board. Water Agency has no legal authority to amend the terms of water right permits
- Conclusion: **Significant and Unavoidable**

Cumulative

- Project effects considered with the effects of other projects
- Identifies Proposed Project contribution to cumulative effects
- Evaluated related projects and scenarios
 - No Potter Valley Project
 - Ukiah Amendment of Water Right Permit 12952
 - Urban Water Management Plan Future Water Rights Application with State Water Board
 - Combined Proposed Project with all above

Cumulative

- Cumulatively Significant Effects identified for:
 - Hydrology
 - Groundwater impacts
 - Sedimentation and erosion
 - Tsunami
 - Water quality
 - Aluminum, specific conductance, biostimulatory substances
 - Fisheries
 - Recreation
 - Aesthetics
 - Public Utilities and Services

Alternatives

- Screened 21 minimum instream flow alternatives and 5 hydrologic index alternatives
- Range of alternatives
 - No Project 1, No Project 2, Russian River Biological Opinion alternatives against Proposed Project
 - Reviewed relative to ability to reduce impacts and meet project objectives

Alternatives

- No Project 1
 - would not meet project objectives or achieve Proposed Project benefits
 - would avoid significant and unavoidable impact to ability of some water right permit holders to divert under minimum bypass flow requirements
 - would not avoid significant and unavoidable impacts related to tsunami or water quality biostimulatory substances
- No Project 2
 - would meet some of project objectives and some Proposed Project benefits
 - would not avoid significant and unavoidable impact to the ability of some water right permit holders to divert under minimum bypass flow requirements
 - would not avoid significant and unavoidable impacts related to tsunami or water quality biostimulatory substances
- Russian River Biological Opinion
 - Same as No Project 2 for project objectives, benefits, significant and unavoidable impacts to tsunami and water quality
 - Russian River Biological Opinion alternative would minimize impact to water right permit holders to divert under minimum bypass flow requirements
- Proposed Project best meets project objectives and regulatory requirements

Draft EIR Available

- Online at www.sonomacountywater.org
- Hard copies available during regular business hours at the following locations:
 - Sonoma County Water Agency, 404 Aviation Blvd., Santa Rosa
 - Mendocino County Library, 105 N. Main St., Ukiah
 - Cloverdale Regional Library, 401 N. Cloverdale Blvd., Cloverdale
 - Healdsburg Regional Library, 139 Piper St., Healdsburg
 - Windsor Regional Library, 9291 Old Redwood Hwy., Bldg. 100, Windsor
 - Central Santa Rosa Library, 211 E St., Santa Rosa
 - Guerneville Regional Library, 14107 Armstrong Woods Rd., Guerneville
- Purchase hard copy (\$75) or flash drive (\$10) at Water Agency's administrative office

How to Comment on Draft EIR

- Provide oral comments at today's public hearing
- Submit written comments before 5 p.m. on Monday, October 17, 2016, to:
 - fishflow-eir@scwa.ca.gov
- Mail written comments to:
 - Sonoma County Water Agency
 - 404 Aviation Blvd.
 - Santa Rosa, CA 95403
 - Jessica Martini-Lamb, Environmental Resources Manager

Public Hearing Process

- Please fill out a speaker card
- Board chair will indicate time allotted to speakers
- Transcript will be prepared by court reporter
- All comments received during comment period will be addressed in response to comments in Final EIR

Public Hearing

14

MEMORANDUM

To: Board of Directors

September 16, 2016

From: Chris DeGabriele, General Manager



Subj: Comments on Stafford Lake Master Plan Draft Initial Study

t:\gm\2016 misc\memo to bod re stafford lake initial study.doc.docx

RECOMMENDED ACTION: Board Authorize Submittal of Comments on the Draft Initial Study and Mitigated Negative Declaration for Marin County Stafford Lake Park Master Plan

FINANCIAL IMPACT: None at this time

Attached is a notice dated August 16th from Marin County Parks on the subject Draft Initial Study and Mitigated Negative Declaration (IS/MND) for Marin County Stafford Lake Park Master Plan. County Parks is providing the District, other public agencies, and the general public an opportunity to comment on the subject Environmental Review. Please note that the District did not receive our notification until September 6th, so we have contacted the County, received a grace period and somewhat hurriedly prepared the proposed comments (Attachment 1).

The initial study is included as Attachment 2 and addresses new features to be included in the Parks Master Plan as shown on Figure 6 of Attachment 2. Some of the Major changes proposed include a new vehicular entry and exit with a new gate house, an event meadow with pavilion stage and garden areas, enhancement of the existing picnic playground, and a new back meadow including a swimming lagoon and picnic areas. District staff took the opportunity to comment on the Stafford Lake Master Plan workshop presentation approximately one year ago. Those comments are attached to the currently proposed comments on the initial study.

RECOMMENDED ACTION:

Board authorize submittal of the comments on the Draft Initial Study and Mitigated Negative Declaration for Marin County Stafford Lake Park Master Plan.

DRAFT

Via email: crrichardson@marincounty.org

September 20, 2016

Greg Richardson, Sr. Open Space Planner
Marin County Parks
3501 Civic Center Dr. Suite 260
San Rafael, CA 94903

Re: NMWD comments on the Marin County Parks Initial Study/Mitigated Negative Declaration for Marin County Stafford Lake Park Master Plan

Dear Mr. Richardson:

Thank you for the opportunity to comment on the subject Marin County Parks Initial Study for Marin County Stafford Lake Park Master Plan (IS/MND). Please note that North Marin Water District (NMWD) has previously commented on the consultant presentation prepared for workshops occurring in July 2015 regarding the master plan. Those comments are attached for your ready reference.

District comments on the IS/MND follow:

1. II. PROJECT DESCRIPTION, Environmental Setting – **d. Drainage and Flood Control** (page 3)

Paragraph 2 is incorrect and should be restated "the Stafford Dam spillway crest is measured at an elevation of +198.5 (NAVD-888). Thus setting the normal high water line (maximum peak flood elevation is 13ft. above the normal high water line)." Applicable exhibit maps included in the Master Plan and IS/MND should show normal and maximum high water levels and all permanent structures should be set back at least five feet behind the peak flood elevation.

2. II. PROJECT DESCRIPTION, Proposed Project – **b. the Back Meadow, Swimming Lagoon** (page 8)

Please respond to NMWD comments #1, #3, #9 and #12 provided in our letter dated August 3, 2015 (Attached). More information is needed in regard to the bio remediation of the swimming lagoon. Ensuring of no cross-contamination between Stafford Lake and the proposed swimming lagoon, restrooms and locker rooms and waste disposal is of upmost importance. Flood protection to prevent discharge of swimming lagoon water to Stafford Lake is necessary.

3. II. PROJECT DESCRIPTION, Proposed Project – **e. Miscellaneous Amenities, Fishing Boardwalk** (page 8)

We note that the Boardwalk ostensibly would provide access to deeper waters within the lake and more spaces for fishing overall. However, this is a shallow area of the lake and may not be sited appropriately. Additionally, it is distant from restroom facilities and we are concerned about the potential for potential contamination of the Stafford Lake water supply.

4. III. CIRCULATION AND REVIEW – **b. Responsible Agencies** – North Marin Municipal Water District (page 21).

Please correct the North Marin Water District name (not North Marin Municipal Water District). We also note that emergency response agencies have not been included on the distribution.

5. IV. EVALUATION OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES – **d. Water** (page 39)

The project is required to comply with section E.12 of the small MS4 Phase 2 General Permit, which requires implementation of low impact development (LID) standards. NMWD notes that LID design typically uses more water to keep plants alive during summer months (non-stormwater season) and this should be considered in the IS/MND.

6. IV. EVALUATION OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES – **d. Water Mitigation Measure 4A** (page 39).

Note that NMWD comment #12 in our August 3, 2015 letter requested to incorporate sediment collection with the proposed vehicular bridge and boardwalk and we request this function be addressed in the IS/MND.

7. IV. EVALUATION OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES – **d. Water** (page 42)

Monitoring Measure 4B states: "implementation of the Master Plan would result in a slight increase in water demand over existing levels." NMWD requests calculations showing the projected water demand increases be included in the IS/MND.

8. IV. EVALUATION OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES – **J. Hazards (page 70) b. Possible Interference with an Emergency Response Plan or Emergency Evacuation Plan.**

This section states that "Implementation of the Master Plan would improve an existing recreational facility, it would not interfere with Emergency response plans or Emergency evacuations Plans. Please note that NMWD has a Risk Management Plan for Stafford Treatment Plant and needs to know the frequency and size of populations attending events as result of the Master Plan facilities to appropriately update the STP Risk Management Plan.

9. IV. EVALUATION OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES – **M. Utilities and Service Systems (page 78) c. Local or regional water treatment or distribution facilities? and d. Sewer or septic tanks.**

The NMWD letter dated August 3, 2015 comment #13 requested a new potable water line be extended to Stafford Lake Park. Said facilities should be addressed in the IS/MND. Additionally, NMWD's letter dated August 3, 2015 requested a new sewer connection be included in the Master Plan and should also be addressed. See also comment #7 (page 42). There is no discussion here of water/waste water needs of the proposed swimming lagoon and this should be addressed.

10. IV. EVALUATION OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES – **M. Utilities and Service Systems – E. Storm Water Drainage.** (page 79)

The NMWD Stafford Lake Taste and Odor Control Strategy report identifies methods for reduction of nutrients entering tributaries to Stafford Lake including wetlands, plants and harvesting. Stormwater retention areas could support this type of operation if designed appropriately. However, there is little information included in the Master Plan or IS/MND to substantiate such provisions.

Thank you for the opportunity to comment on the subject IS/MND. Please contact me should you have any questions.

Sincerely,

Chris DeGabriele
General Manager

CD/kly

t:\gm\2016 misc\ltr to com re stafford lake master plan.doc



**NORTH MARIN
WATER DISTRICT**

August 3, 2015

999 Rush Creek Place
P.O. Box 146
Novato, CA 94948

PHONE
415.897.4133

FAX
415.892.8043

EMAIL
info@nmwd.com

WEB
www.nmwd.com

Nancy Peake
Marin County Parks
3501 Civic Center Drive, Suite 260
San Rafael, CA 94903

Re: Stafford Lake Park Master Plan

Dear Ms. Peake:

I had the opportunity to attend the Stafford Lake Park Master Plan Public Workshop on July 8, 2015 and provide my initial comments to the Marin County Parks staff and consultants at that meeting. I also obtained a copy of the consultant presentation and shared it with North Marin Water District staff for their comments which follow.

1. Slide Title: PREFERENCING EXERCISE SUMMARY
It's noted that POOL/SWIMMING is listed under Unpopular preferences. We are interested to know the Marin County Parks perspective on including a swimming lagoon in the proposed Master Plan when its identified as an Unpopular preference.
2. Slide Title: FOCUS GROUP SUMMARY
Please correct North Marin Water District name (not Novato Municipal Water District).
3. Slide Title: PREFERRED PROGRAM DIAGRAM
See Comment #1 NMWD is interested on why a swimming lagoon became a component of the preferred program.
4. Slide Title: PRELIMINARY OVERALL MASTER PLAN, Parking
Additional parking near the proposed events center is not highlighted on this graphic.
5. Slide Title: PRELIMINARY OVERALL MASTER PLAN Staff offices and facilities
We understand the proposal will be to reuse the existing gate house as staff offices and recommend that the facility be fully utilized. NMWD funded construction of the existing gate house which was built through NMWD and community volunteer efforts.
6. Slide Title: PRELIMINARY OVERALL MASTER PLAN, Destination playground
NMWD questions the location of the proposed playground in close vicinity to the working Grossi Dairy. A better location, away from odors and flies, may be where there the currently proposed swimming lagoon is sited.
7. Slide Title: PRELIMINARY OVERALL MASTER PLAN, Event area with barn/ranch house and stage
No restrooms are shown to support this additional event area.

8. Slide Title: PRELIMINARY OVERALL MASTER PLAN, Lake Pavilion
No restrooms are shown to support this additional event area.
9. Slide Title: PRELIMINARY OVERALL MASTER PLAN, Swimming lagoon
NMWD assumes that the lagoon would be a natural style swimming pool and not a pond, that there would be no connection to the lake, including drainage, and management provisions will be included to prevent overflow during wet weather. Additionally, the water demand, water and waste water discharge, and proximity to the lake as an "attractive nuisance" alternative to the swimming lagoon must be addressed.
10. Slide Title: PRELIMINARY OVERALL MASTER PLAN, Tree Camping
NMWD requests information on how waste water and solid waste would be handled with such a camping operation.
11. Slide Title: PRELIMINARY MASTER PLAN – THE EVENT MEADOW
NMWD understands that special event camping as shown on this slide would be intended for local community groups such as Girl Scouts, which are chaperoned and supervised 24 hours per day. Additionally, see Comment #7, no restroom facilities are located in the vicinity.
12. Slide Title: PRELIMINARY MASTER PLAN – THE BACK MEADOW
NMWD has concerns about handling waste water in the proposed restroom and changing facility.
We are pleased to see the proposed vehicular bridge and would like to work with Marin County Parks on the potential to incorporate a sediment collection and removal operation at this location.
13. Other Comments
NMWD request that the Master Plan include a new domestic waterline extended to the park. The existing line is currently 40 years old.
Furthermore, NMWD requests a sewer line connection to Novato Sanitary District be installed to preclude the haul out of sanitary waste.
Finally, NMWD requests that landscape plans including bioswales and features to prevent runoff and sedimentation into Stafford Lake.

Thank you for the opportunity to comment on the Proposed Master Plan.
Should you have questions please contact me at your convenience.

Sincerely,


Chris DeGabriele
General Manager

Cc:
Steve Petterle
CD/klj

**MARIN COUNTY
PARKS**

PRESERVATION • RECREATION

www.marincountyparks.org

MEMORANDUM

Marin County Parks, 3501 Civic Center Dr, Suite 260, San Rafael, CA 94903

DATE: August 16, 2016

TO:	State Clearing House	Novato Fire District
	ABAG Clearinghouse	North Marin Water District
	SF Bay RWQCB	BAAQMD
	State Water Resources Board, Water Quality	Marin County DPW
	California Department of Fish and Wildlife	Marin County Fire Department
	U. S. Army Corps of Engineers, San Francisco District	U.S. Fish and Wildlife Service
	Marin County Community Development Agency	MCSTOPPP

FROM: Craig Richardson, Senior Open Space Planner**RE:** Notice of Availability of Draft Initial Study and Mitigated Negative Declaration, for Marin County Stafford Lake Park Master Plan, Marin County

Pursuant to state and local guidelines implementing the California Environmental Quality Act, Marin County Parks has prepared a Draft Initial Study and Mitigated Negative Declaration (IS/MND) for the above-referenced project. Based upon the IS/MND, Marin County Parks has determined that the proposed Stafford Lake Park Master Plan does not result in significant effects on the environment. Enclosed with this memorandum is a compact disc or USB flash drive containing copies of the Draft IS/MND and Stafford Lake Park Master Plan. Please provide your agency's comments on the scope and content of the IS/MND. Your agency may need to use this IS/MND when considering your permit, funding, or other approvals for the project.

As required by state law, please send Marin County Parks your comments before **September 19, 2016 at 4:30 pm**. All comments should be addressed to Craig Richardson, Senior Open Space Planner, Marin County Parks at the address shown above or crRichardson@marincounty.org.

PROJECT TITLE: Stafford Lake Park Master Plan**COMMENT PERIOD:** August 19, 2016 through September 19, 2016**PREPARED BY:** Craig Richardson
TITLE: Senior Open Space Planner**TELEPHONE:** (415) 473-7057**Attachments:** Stafford Lake Park Master Plan
IS/MND
Notice of Availability

MARIN COUNTY PARKS INITIAL STUDY

STAFFORD LAKE PARK MASTER PLAN

I. BACKGROUND

- | | |
|------------------------------------|---|
| A. Lead Agency Name and Address | County of Marin
Marin County Parks
3501 Civic Center Drive, Suite 260
San Rafael, California 94903 |
| B. Contact Person and Phone Number | Craig Richardson
(415) 473- 7057 |

II. PROJECT DESCRIPTION

- | | |
|------------------------------|---|
| A. Project Title: | Stafford Lake Park Master Plan |
| B. Type of Application(s): | None |
| C. Project Location: | 3549 Novato Boulevard, Novato
Assessor's Parcels 125-09-019 and 22, 125-100-14,
portion of 125-090-07 |
| D. General Plan Designation: | PF-OS (Public Facility – Open Space) |
| E. Zoning: | A2-B4 (Limited Agriculture) |
| F. Project Description: | |

Marin County Parks (Parks) is proposing to adopt a Master Plan which is to be a comprehensive long-term planning document that will guide the future development of park facilities, improvements and programs at Stafford Lake Park. The Master Plan provides recommendations for general infrastructure and circulation improvements to singular design elements. Overall, the Master Plan aims to protect the natural, cultural, and recreational amenities that currently exist within the park while proposing new, complementary features and programs. Specific improvements would be constructed incrementally over the life span of the Plan. This Initial Study evaluates the potential environmental effects of implementing the proposed Master Plan. Given that detailed design and construction methodology for individual projects within the Master Plan are not known at this time, this Initial Study provides overall guidance for development of these individual facilities/improvements when funding becomes available. In order to provide for a comprehensive analysis of the Master Plan, potential environmental impacts associated with implementation of the Plan are analyzed at a "program" level within this Initial Study. Prior to implementation of specific improvements, Parks staff will review recommended projects within the Plan on a case-by-case basis to determine if any supplemental review under CEQA would be required to address potentially adverse project-specific impacts that are not mitigated through the recommended project revisions and mitigation identified in this Initial Study.

Environmental Setting

a. Location

Stafford Lake Park is located in northern Marin County approximately 3 miles west of downtown Novato and U.S. 101 at 3549 Novato Blvd (see Figures 1 and 2). The park is owned by Marin County with the exception of approximately 10 acres in the northeastern corner of the park owned by the North Marin Water District (NMWD). Marin County holds an easement over this portion of the park which allows for management activities and public recreation. Development of proposed improvements identified in the Master Plan that would occur outside of Marin County Parks jurisdiction would require permission from adjacent property owners.

The park is managed by Marin County Parks and is comprised of approximately 139 acres of land along the western edge of Stafford Lake. It is the northernmost park managed by Marin County Parks and contains the largest upland acreage. The park is located between the urbanized core of Novato to the east and rural lands to the west.

b. Existing Facilities and Park Operation

The 139-acre regional park provides recreation opportunities to the community, including opportunities for hiking, fishing and group picnicking for up to 500 people (Figure 3). The park also has a children's play structure, ball fields, volleyball and horseshoe courts, and a disc golf course. Phase 1 of the Stafford Lake Bike Park opened in August 2015 and provides off-road bicycle riding areas designed for riders of all ages and skill levels. The park is used for a variety of large-scale events, music concerts and festivals, drawing as many as 8,000 people and 1,200 cars. Currently, there is no master plan to guide facility development at Stafford Lake County Park.

The park hosts an array of programs, ranging from family picnics and day hikers to large-scale music events and other festivals. Its six picnic areas are heavily used during the summer months. Picnic Areas 1 and 2 are particularly popular with large picnic groups and special events. The park is a very popular wedding venue, consistently booked on weekends during the warmer months. The park also has a diverse set of ranger-led and community group-organized park programs including outdoor movie screenings, educational, and stargazing events.

Road access to the park is from Novato Blvd. Parking fees are \$5.00 per vehicle seven days a week during winter months and Monday through Thursday during summer months, and \$10.00 per vehicle on summer weekends (Friday, Saturday and Sunday). No on-street parking is available on Novato Blvd. Separated bike paths or bike lanes are present along the route to the park from downtown Novato. In addition to the vehicle entrance, pedestrian/bicycle access is available via the bike path at the east end of the park.

Park hours are 7:00 a.m. to 8:00 p.m. in summer, 7:00 a.m. to 7:00 p.m. in fall and spring and 8:00 a.m. to 5:00 p.m. in winter. The park is closed at night and the vehicle entrance is locked.

c. Circulation

The only road to Stafford Lake Park is Novato Boulevard. Currently, Stafford Lake Park has only one vehicular entry and exit point. This access point is located toward the middle of the park off of Novato Boulevard. Upon entering the park and passing a small guard house, the road comes to a T, forcing

drivers to turn either left or right. Internal vehicular circulation is linearly oriented, causing congestion for patrons trying to enter or exit the park at peak use periods.

Parking capacity at Stafford Lake Park is greatly dependent on whether event(s) are taking place at the park. During weekdays the park has ample parking in its designated lots; however on busy weekends and during large events or festivals, parking and vehicular circulation is congested. Even with adequate overflow parking, and the provision of additional gated entry points, poor internal vehicular circulation inside the park forces traffic congestion on Novato Boulevard.

The main bicycle route to Stafford Lake Park is a multi-use path along Novato Boulevard that begins at Sutro Avenue. Avid road cyclists also ride directly on Novato Boulevard, often using Stafford Lake Park as a rest stop or meet up spot for longer rides. No official bike paths are located within Stafford Lake Park. Other than special permitted events, bikes are prohibited from trails in the park. The recent opening of Phase 1 of the Stafford Lake Bike Park has provided an off-road amenity for bikers.

Currently, Stafford Lake offers one interior trail – the Terwilliger Nature Trail, which begins near Picnic Area 6 and climbs about 400 feet to eventually loop back down to the original trailhead. A number of County Open Space Preserves and Novato City parks are located within a 3-mile radius of the park. Park patrons have expressed the desire to connect Stafford Lake Park with these neighboring spaces, especially the redwood groves at nearby Indian Tree Open Space Preserve. Currently, there is little direct connection between various open spaces and preserves. The Novato Boulevard multi-use path directly connects between Stafford Lake Park and O'Hair Park/ Dogbone Meadow, but regional trail connection is spotty and not well marked. There is potential to connect Stafford Lake Park with neighboring trails and open spaces but would require easement agreements with North Marin Water District and adjacent private property owners.

Public transportation to Stafford Lake Park is not available. The closest bus stop is located at Novato Boulevard and San Marin Drive via Marin Transit Route 251 or Golden Gate Transit Route 54. This stop is approximately 2 miles from the park entry.

d. Drainage and Flood Control

The park is located within the Novato Creek watershed, the largest in Marin County, draining to San Pablo Bay. The water from Stafford Lake reservoir is treated at nearby Stafford Lake Water Treatment Plant and supplies approximately 20 percent of Novato's water. As a protected water source, swimming and boating are prohibited at the lake. Fishing is allowed outside of the 1,500-foot buffer from the dam and intake tower. In addition to Novato Creek, various drainages flow into the lake.

The Stafford Dam outlet is measured at an elevation of +197.87 (NAVD-88), thus setting the maximum high water line. The park experiences occasional flooding during large storm events, especially near riparian areas and drainage corridors. North Marin Water District typically begins drawing reservoir water from Stafford Lake around April to supplement drinking water, though lake water levels fluctuate throughout the year due to a number of factors.

e. Biological Resources

The plant communities that occur within Stafford Lake Park include Non-native Grassland, Brome/Fescue Native Grassland, Purple Needlegrass Native Grassland, Seasonal Wetland, Watercourse, Riparian, and Oak Woodland (Figure 4a/b and 5a/b). A portion of the Stafford Lake Park

is covered with turf that has not been watered in the last couple of years and supports non-native species at 10 percent or less cover.

Non-native Grassland. The Non-native Grassland is dominated by a variety of non-native species including ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), hare barley (*Hordeum murinum* ssp. *leporinum*), and Italian ryegrass (*Festuca perenne*). Non-native Grassland includes the Annual Brome Grasslands as described in the *Manual of California Vegetation (Manual)*.¹ The cover of these species typically approaches 100 percent in this grassland.

Brome/Fescue Native Grassland. The Brome/Fescue Native Grassland is an unusual type of native grassland because it is dominated by a number of different native plant species including fescue (*Festuca* spp.), California brome (*Bromus carinatus*), and purple needlegrass (*Stipa pulchra*). This grassland roughly corresponds to the description of Idaho Fescue alliance as described in the *Manual*.

The Brome/Fescue Native Grassland is considered vulnerable and at moderate risk.² This grassland is considered locally sensitive because of the high cover and diversity of native species, low cover of non-native species, and restricted occurrence. The cover of this grassland approaches 100 percent and the non-native component of this grassland is low to non-existent in some areas. This grassland only occurs on a slope near the southwestern boundary of the park. The wildflower component of the grassland is likely to be diverse as well but was not observed during the October field work as the survey occurred outside of the blooming period for most plants.

Purple Needlegrass Native Grassland. The Purple Needlegrass Native Grassland is dominated by purple needlegrass (cover 10 to 50 percent) and is relatively widely distributed in the undisturbed portions of Stafford Lake Park. It corresponds to the *Nassella pulchra* alliance as described in the *Manual*. Purple Needlegrass Native Grassland is considered a special-status vegetation type because of the conversion of land to agricultural and urban uses and displacement by invasions of non-native vegetation. The Purple Needlegrass Native Grasslands at Stafford Lake Park would fall into the valley needlegrass grassland category of the Marin Countywide Plan and would therefore be considered sensitive.

Seasonal Wetland. The seasonal wetland that occurs at Stafford Lake Park is an aggregation of a number of different alliances (plant communities) that occur in a mosaic or in single species stands, including native and non-native species. Cattails (*Typha latifolia*), a native species, grow at the edge of Terwilliger Pond. Other commonly observed alliances dominated by native wetland plant species include spike rush (*Eleocharis* sp.), willowherb (*Epilobium* sp.), and spreading rush (*Juncus patens*). Common non-native wetland alliances include curly dock (*Rumex crispus*) and pennyroyal (*Mentha pulegium*). Seasonal wetland is considered a sensitive community because it indicates a potential jurisdictional wetland that would be regulated by the U.S. Army Corps of Engineers (Corps) and the Regional Water Quality Control Board (RWQCB). Wetlands are also biologically valuable because of their ecosystem functions that include wildlife habitat, protection of water quality, and high productivity.

Watercourses. The watercourses within Stafford Lake Park are generally small with the exception of Novato Creek and range from completely vegetated swales to incised streams with scour. All of the Park's watercourses are seasonal and flow only during the winter rainy season although Novato Creek may continue to flow later in the year than the smaller watercourses. Non-jurisdictional watercourses

¹ Sawyer, J.O., T. Keeler-Wolf, J.M. Evans. 2009. A Manual of California Vegetation. California Native Plant Society Press, Sacramento, CA. 1300 pp.

² NatureServe. 2015. NatureServe Conservation Status. <http://www.natureserve.org/explorer/ranking.htm>

include swales dominated by non-native upland species. Jurisdictional watercourses exhibit scour and/or are dominated by wetland plant species. The channel of Novato Creek is bare due to scour and is surrounded by willow riparian vegetation. Watercourses are also regulated by the Corps, RWQCB, and the California Department of Fish and Wildlife (CDFW) and provide valuable habitat for fish and wildlife.

Riparian Vegetation. The riparian vegetation within the Park is dominated by yellow willow (*Salix lasiandra*), red willow (*Salix laevigata*), and arroyo willow (*Salix lasiolepis*) trees, which grow in a dense canopy along Novato Creek. The diameter of many of these trees exceeds 1 foot DBH (diameter at breast height³). The trees can exceed 40 feet in height. The CDFW ranks Yellow Willow plant communities as threatened using the NatureServe classification system. Arroyo Willow and Red Willow alliances are ranked as more common. Although the riparian vegetation within the park is a mixture of these three types, it is still considered sensitive because of its value to wildlife. As articulated in the Marin Countywide Plan⁴, Marin County policy protects this vegetation type.

Oak Woodland. Oak woodland occurs in the southern portion of Stafford Lake Park, with non-native and native grassland occurring beside the Oak Woodland stands. This vegetation corresponds to the *Quercus agrifolia* alliance as described in the *Manual*. Coast live oak (*Quercus agrifolia*) is the dominant species within this community. Other tree species include valley oak (*Quercus lobata*), California buckeye (*Aesculus californica*), and California bay (*Umbellularia californica*). Canopy cover of the Oak Woodland varies from 80 to 100 percent. The diameter of the trees often exceeds 1 foot.

Three small stands of coast redwood trees (*Sequoia sempervirens*) occur within the Oak Woodland. Stands range from less than 800 square feet up to 1,800 square feet. Tree diameters range from 1-3 feet with some of the redwood trees exceeding 50 feet in height. The understory consists mostly of thick duff from the redwood needles but also includes wood fern (*Dryopteris arguta*).

Patches of scrub dominated by coyote brush (*Baccharis pilularis*) and poison oak (*Toxicodendron diversilobum*) are also located within the Oak Woodland. Ocean spray (*Holodiscus discolor*) and coffee berry (*Frangula californica*) also occur in the scrub.

A number of notable trees are located within Stafford Lake Park, including the weeping willows (*Salix babylonica*) between Group Picnic Areas 1 and 2, the large California bay tree just west of Terwilliger pond, a blue oak (*Quercus douglasii*), near the Park entrance, as well as the large coast live oaks and California bay trees on site. Trees native to Marin County are protected by the Marin County tree ordinance.⁵ The tree ordinance contains an exemption for public agencies to provide routine management and maintenance of public lands.

Proposed Project

From the onset of the master planning process, Marin County Parks and the design team have considered Stafford Lake Park as a unique but underutilized amenity. The master plan focuses on alternative, nature-based recreation, as well as traditional picnic and play to activate the park's

³ Diameter of tree measured at a point 4.5 feet from the ground surface.

⁴ County of Marin, Community Development Agency, 2007. *Marin Countywide Plan*. 6 November.

⁵ Ordinance No. 3342; Ordinance of the Marin County Board of Supervisors Amending Title 22 to Reenact Provisions for Native Tree Preservation and Protection. http://ucanr.edu/sites/oak_range/files/60606.pdf

underutilized areas and to protect its existing resources. The overall Master Plan improvements have been broken down into five general categories as shown in Figure 6:

- General Park Improvements
- The Event Meadow
- The Picnic Playground
- The Back Meadow
- Miscellaneous Amenities

While interconnected, these features can stand as singular projects. A summary of these proposed improvements is provided below.

a. General Park Improvements

A major first step in the master plan effort is to reconfigure the current vehicular circulation for improved movement and increased accessibility to park features. The main access point would be moved to the northwestern corner of the park along Novato Boulevard and an exit-only access would be provided at its eastern edge. The existing gatehouse structure would be preserved and repurposed and a new gatehouse would be constructed near the Event Meadow.

New pedestrian and bicycle paths would supplement the existing pathways to create internal walking loops that are wheelchair and stroller-accessible. Additionally, improved trail connections within the existing Terwilliger Trail and disc golf course trails are proposed. These trail extensions would extend existing trails that dead-end to make a continuous trail loop. New trails would avoid disturbing upland vegetation and other environmentally sensitive areas. New interpretive signage is proposed at sensitive environmental and cultural spaces within the park.

Individual and group picnic areas would be added throughout the park.

b. The Event Meadow

The following elements are proposed in the northwest portion of the park along Novato Boulevard:

- **New Gatehouse.** A new gatehouse would be situated between the park road parallel with Novato Boulevard and the road leading to the existing group picnic areas 1 and 2 (see Figure 7). This new gatehouse configuration would allow the Park to be split into two sections - one without a fee and the other fee-based - to encourage more frequent use by nearby residents who are turned away from visiting the park due to fees. A fee would be required to access the Event Meadow area and areas south of the new gatehouse.
- **Events Center.** The existing staff maintenance yard and trailer residence would be replaced with an event center structure. The structure would provide a flexible indoor space for special events, community meetings, exhibitions, and other gatherings. It would also include exterior restrooms. The structure design would reference to the neighboring barn/ranch style architecture.
- **New Parking Lot.** A new parking lot with approximately 60 spaces would provide formal parking spaces for future events. The remaining open meadow would have capacity for overflow parking during large special events in the park and could accommodate approximately 150 vehicles.

- **Informal Stage and Open Meadow.** An informal stage with electrical power would be located in the northwestern portion of the Event Meadow. The surrounding open meadow area would remain as an open, flexible space for picnicking or informal recreation. The stage would be a simple platform that could accommodate a removable shade structure.
- **Special Event Camping.** To accommodate special groups (e.g., Girl Scouts), a space along the southern edge of the meadow would allow special event camping parties of approximately 50 people.
- **Event Gardens.** The existing drainage swale adjacent to the proposed events center could become a garden space to supplement the events center. Areas near the drainage swale would be planted with California native plantings while areas outside of the swale would become a naturalistic garden with low water-use plantings.

c. The Picnic Playground

The following elements are proposed in the northeast portion of the park along Novato Boulevard:

- **Destination Playground.** The destination playground will be the centerpiece of the Picnic Playground area (see Figure 8). Play equipment would include custom-designed and standard climbing structures built around the existing mature trees on site. The playground would have various subareas including a tot lot, water play zone, willow hut village, play stage, and elevated play areas. The playground would be designed with accessibility in mind, providing ADA-accessible play equipment, multi-sensory engaging elements, and imaginative spaces. The playground would be located within the no fee zone of the park.
- **Individual and Group Picnic Areas.** This area would include increased individual and group picnic areas scattered around the area. Adjacent to the new destination playground, an improved group picnic area would have a newly constructed BBQ counter along with several picnic tables. An additional group picnic area would be added just west of the existing stand of redwoods. New paths would connect to this proposed group picnic area and additional picnic tables, BBQ counter, and serving area would be provided. Four additional individual picnic areas would supplement the existing two areas, allowing more intimate picnic venues. These spaces would be outfitted with freestanding BBQs. These picnic areas would be in addition to the picnic and play area associated with the Stafford Lake Bike Park. Proposed amenities would serve both general park and bike park users.
- **Extended Walking Paths.** A new ADA-accessible pathway would go around the Picnic Playground area. The path would provide individual picnic areas and a bird viewing vista point. The path itself would be a mini-loop within the larger park-wide pedestrian loop. Parts of the pathway would be a multi-use path that shares pedestrian and bicycle traffic.
- **New Maintenance Yard and Staff Offices.** The existing gatehouse building would remain to serve as the relocated park staff offices and maintenance facilities, although it will no longer function as a gatehouse. Additional permanent structures would be designed to function as a maintenance yard.

d. The Back Meadow

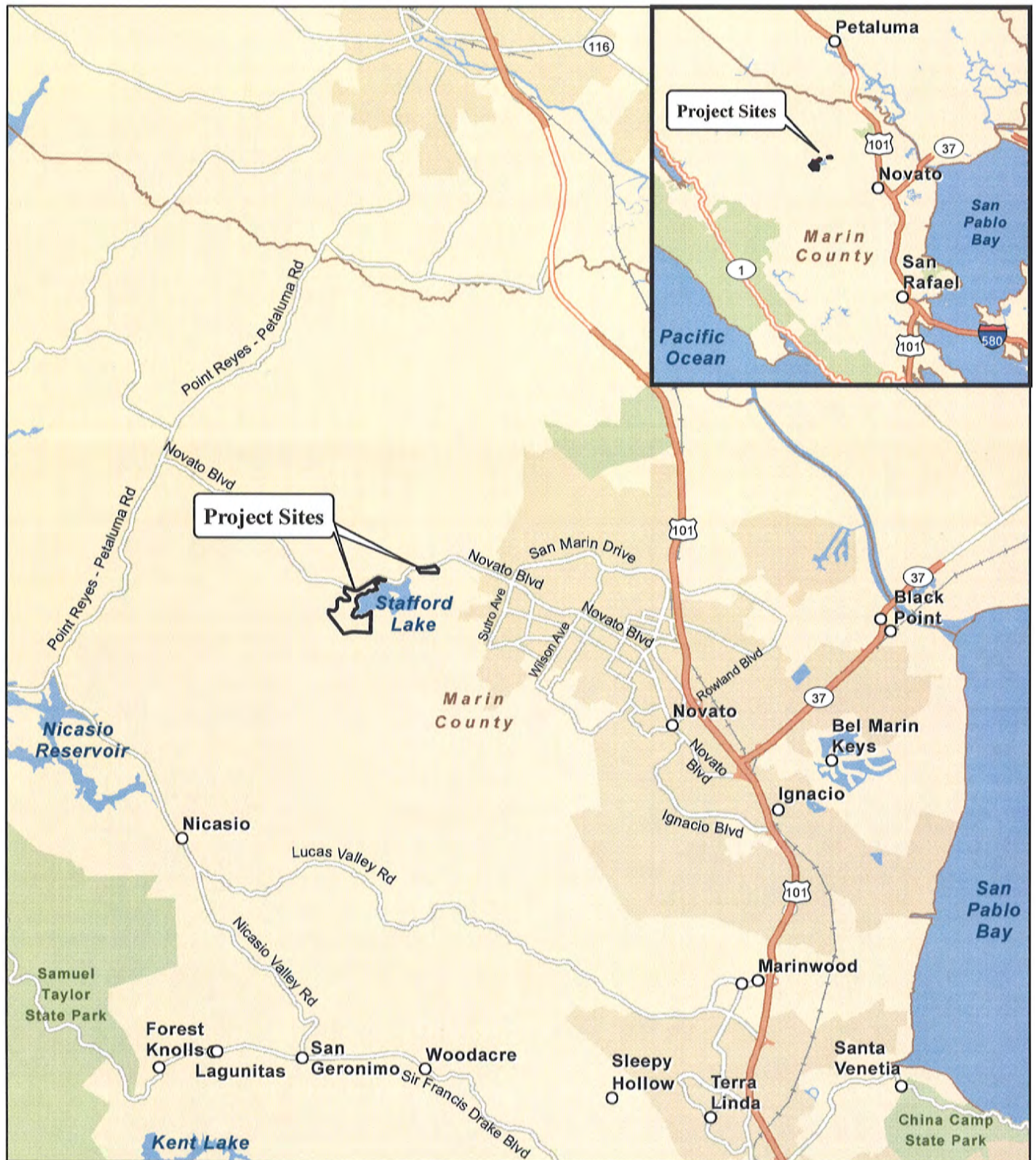
The following elements are proposed in the central portion of the park south of the Stafford Lake Bike Park (see Figure 9):

- **Roadway Extension and Back Meadow Parking Lot.** Currently, the Back Meadow area consists of an open field inaccessible to vehicles. To provide greater access to this area, a permanent vehicular bridge and roadway connection would be constructed. A parking lot with approximately 64-spaces would be added to the Back Meadow.
- **Swimming Lagoon.** The proposed swimming lagoon would be a one-of-a-kind feature at the park. It would be naturally cleaned via planting specifically installed for bioremediation. The lagoon could have a lap swimming area along with a free swim zone. It would be designed to ensure no cross-contamination with the protected Stafford Lake. A kiddie lagoon is also proposed adjacent to the main lagoon. Wooden decks would surround portions of the lagoon providing a flexible breakout space. A changing facility would be constructed just west of the swimming lagoon. The building would house restrooms and locker rooms with potential office space for management staff of the lagoon.
- **Bouldering Course.** The bouldering course is located along the foot of the hillside just south of the swimming lagoon. It would consist of 12 climbable rock features built into the landscape. All boulders would be designed with the appropriate fall zone requirements.
- **Nature Play Pods.** Three nature play pod areas would be scattered along the path that circles the swimming lagoon. These play areas would have informal play elements adjacent to proposed picnic areas.
- **Individual and Group Picnic Areas.** Three new individual picnic areas and one group picnic area would be provided for in the Back Meadow. Individual picnic areas would have picnic tables and freestanding BBQ while the group picnic area would have a shade structure and BBQ counter and serving area.

e. Miscellaneous Amenities

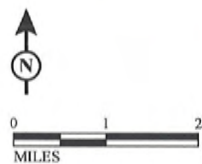
Other amenities are proposed in the southernmost portion of the park near the disk golf course. The amenities include:

- **Lake Pavilion.** The Lake Pavilion would be located near the existing group picnic areas near the mouth of Novato Creek. The Lake Pavilion would provide close access to the lake edge without disturbing the surrounding habitat and would offer a venue for small events and mediation sessions.
- **Fishing Boardwalk.** The Fishing Boardwalk would improve and expand the existing fishing spot near the northeast portion of the park. The boardwalk would provide access to deeper waters within the lake and more spaces for fishing overall. The pathway leading to the fishing boardwalk would also be improved.
- **South Lake Edge Improvements and Star Deck.** The South Lake Edge would have minimal improvements, including three hike-in picnic spaces and a Star Deck. The Star Deck would have built-in telescopes, an informal classroom space, and a radiant heating floor. It could also be outfitted with a solar-powered heater.
- **Bird Blind.** A Bird Blind structure would be located near the existing group picnic area adjacent to the seasonal wetland pond south of the Bike Park. The simple structure would allow visitors to observe birds in an unobtrusive manner. It could also include interpretive signage.



LSA

FIGURE 1



SOURCE: ESRI StreetMap North America (2012).
 ERHA140\GIS\Maps\Cultural\Figure 1_Regional Location.mxd (10/24/2014)

Stafford Lake Master Plan
 Novato, Marin County, California
 Regional Location

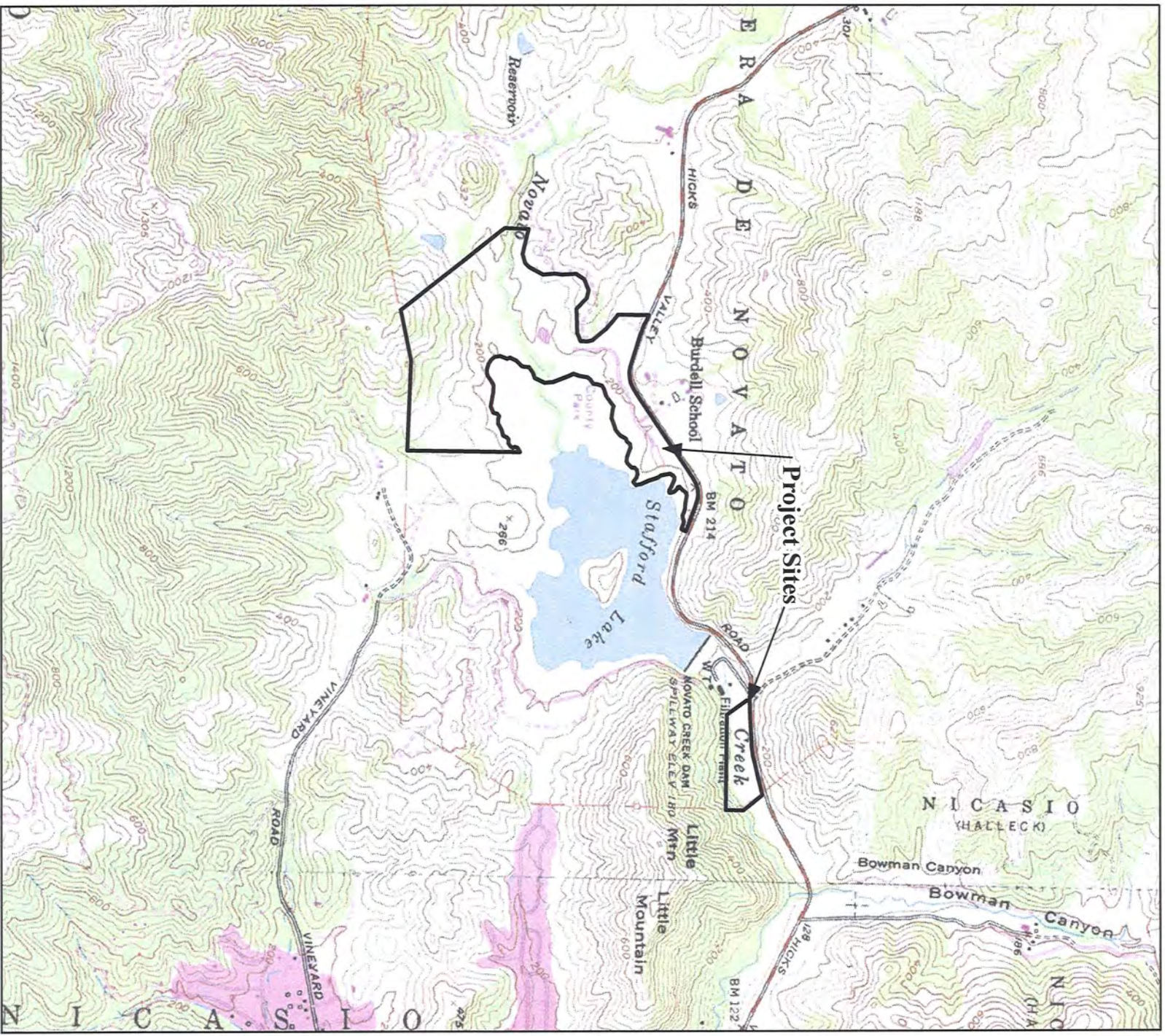


FIGURE 2

LSA

0 1000 2000
FEET

SOURCE: USGS 7.5-minute Topographic Quads: San Geronimo (1971), Novato (1980), Petaluma (1981), and Petaluma River (1980), California. L:\RHA\1401\GIS\Maps\Cultural\Figure 2_Project Area.mxd (10/24/2014)

Stafford Lake Master Plan
Novato, Marin County, California
Project Area

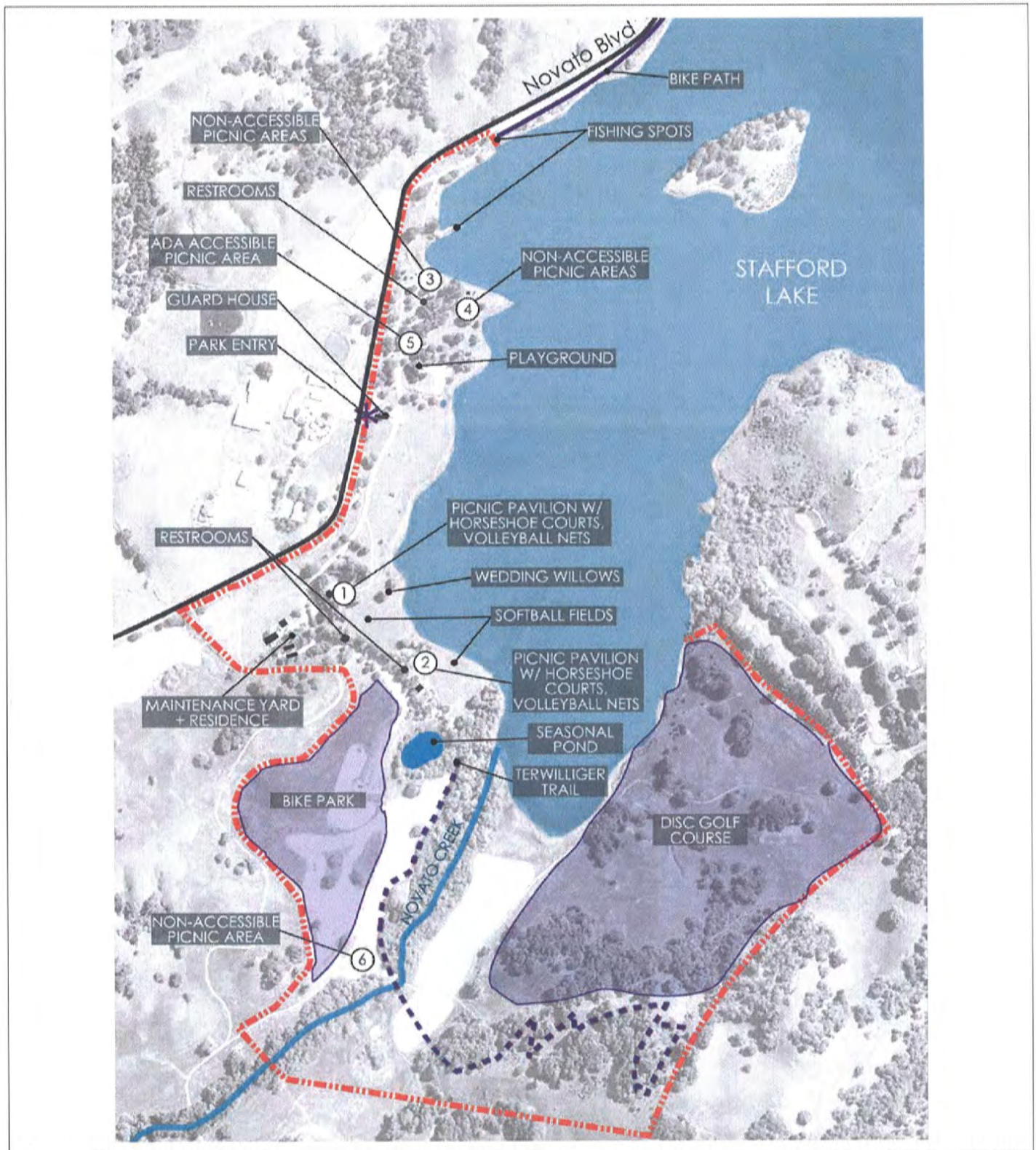
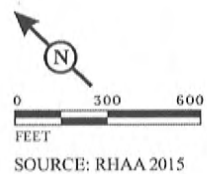


FIGURE 3

LSA



Stafford Lake Park Master Plan
Marin County, California
Existing Park Amenities



LSA



LEGEND

- Study Area
- Fragrant Fritillary (*Fritillaria liliacea*)
- Fragrant Fritillary 50-foot Setback
- Blue Oak Tree
- Rock Outcrop
- Brome/Fescue Native Grassland
- Purple Needlegrass Native Grassland
- Novato Creek Riparian Woodland

SOURCE: Esri World Imagery Service (11/2014)

I:\RHA\1401\GIS\Map\IS Figure 4_Fritillary, Blue Oak, Outcrops, Native Grasslands, and Woodlands.mxd (12/1/2015)

FIGURE 4a

Stafford Lake Park Master Plan
Marin County, California
Fragrant Fritillary, Blue Oak, Rock Outcrops,
Native Grasslands and Woodlands

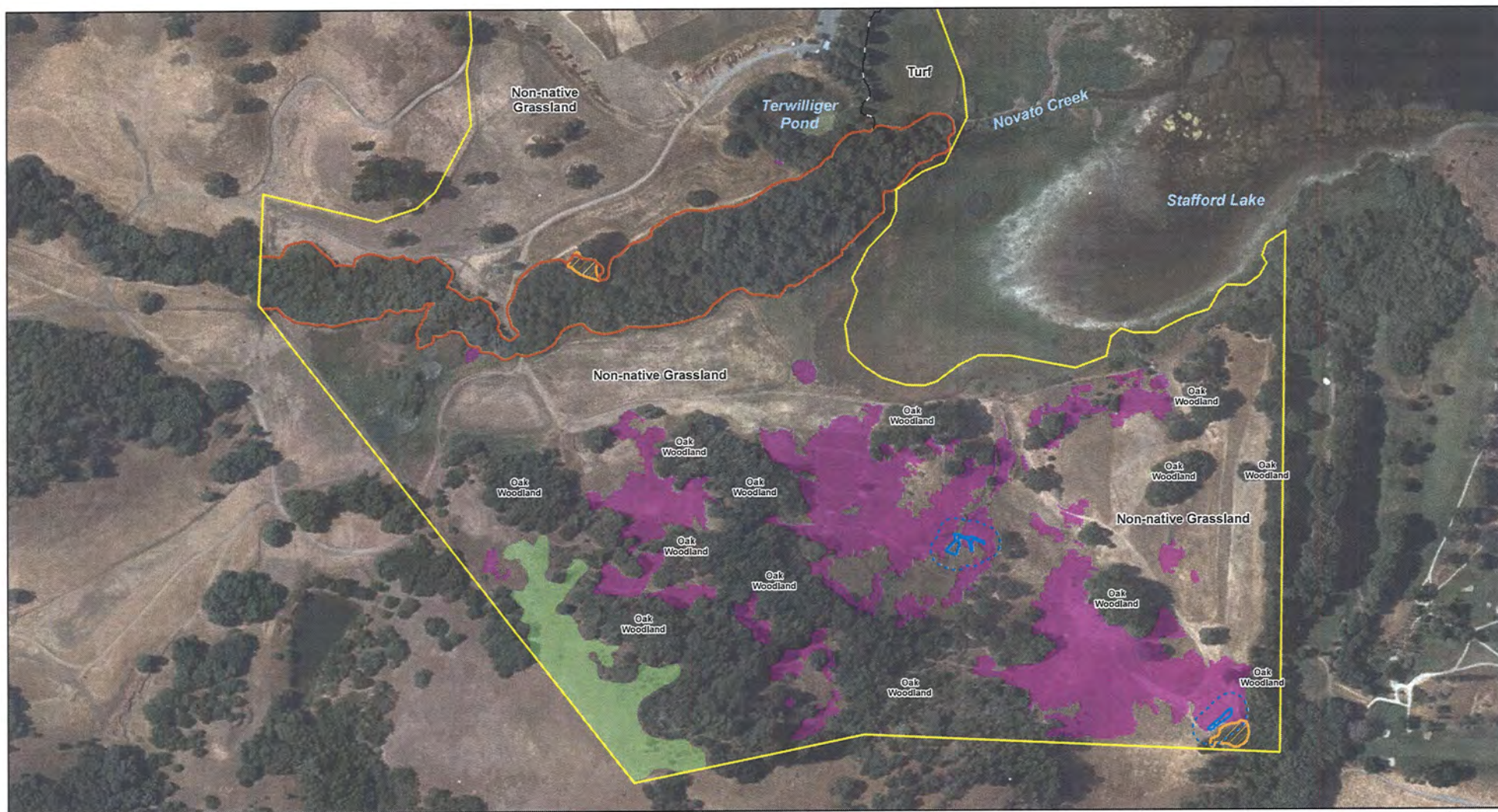
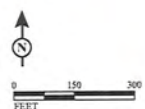


FIGURE 4b

LSA

LEGEND

- Study Area
- Fragrant Fritillary (*Fritillaria liliacea*)
- Fragrant Fritillary 50-foot Setback
- Blue Oak Tree
- Rock Outcrop
- Brome/Fescue Native Grassland
- Purple Needlegrass Native Grassland
- Novato Creek Riparian Woodland



SOURCE: Esri World Imagery Service (11/2014).

1:\RHA\401\GIS\Maps\IS\Figure 4_Fritillary, Blue Oak, Outcrops, Native Grasslands, and Woodlands.mxd (12/1/2015)

Stafford Lake Park Master Plan
Marin County, California
Fragrant Fritillary, Blue Oak, Rock Outcrops,
Native Grasslands and Woodlands



FIGURE 5a

LSA

LEGEND

- | | | |
|---|--|--|
| Study Area | Seasonal Wetland | Mitigation Wetland |
| Combined Wetland, Watercourse and Riparian Setbacks | Stafford Lake Wetland Edge | |
| Novato Creek Riparian Woodland | Jurisdictional Ephemeral Watercourse or Culvert | |
| | Non-jurisdictional Swale, Gully or Culvert | |



0 150 300
FEET

SOURCE: Esri World Imagery Service (11/2010).

I:\RHA\1401 GIS Maps\15 Figure 5_Wetlands, Watercourses, Riparian and Setbacks.mxd (12/1/2015)

Stafford Lake Park Master Plan
Marin County, California
Wetlands, Watercourses,
Riparian Woodland and Setbacks



FIGURE 5b

LSA



LEGEND

- | | | |
|---|---|--------------------|
| Study Area | Seasonal Wetland | Mitigation Wetland |
| Combined Wetland, Watercourse and Riparian Setbacks | Stafford Lake Wetland Edge | |
| Novato Creek Riparian Woodland | Jurisdictional Ephemeral Watercourse or Culvert | |
| | Non-jurisdictional Swale, Gully or Culvert | |

SOURCE: Eri World Imagery Service (11/2010).

I:\RHA\1401\GIS\Map\IS\Figure 5_Wetlands, Watercourses, Riparian and Setbacks.mxd (12/1/2015)

*Stafford Lake Park Master Plan
Marin County, California
Wetlands, Watercourses,
Riparian Woodland and Setbacks*



LSA

FIGURE 6

Stafford Lake Park Master Plan
Marin County, California
Overall Master Plan

SOURCE: RHAA 2015

P:\RJIA\1401\GIS\Figure 6_Overall Master Plan.cdr (12/1/2015)



LSA

FIGURE 7

SOURCE: RHAA 2015

P:\RJHA\1491\GIS\Figure 7_Detail Plan - Event Meadow.cdr (12/1/2015)

Stafford Lake Park Master Plan
Marin County, California
Detail Plan - Event Meadow

- | | | |
|---|------------------------------|-----------------------------|
| 1 New Maintenance Facility Utilizing Existing Entry Station | 5 New Restroom | 10 New Park Exit |
| 2 New Path | 6 Individual Picnic Area | 11 Bird Viewing Vista Point |
| 3 Open Meadow/Overflow Parking | 7 New Group Picnic Area | 12 Fishing Deck |
| 4 Restoration Planting Along Existing Swale | 8 New Destination Playground | 13 Enhanced Bike Entry |
| | 9 Enhanced Parking | |



LSA

FIGURE 8

SOURCE: RHAA 2015

P:\RHA\1491\g15\Figure 8_Detail Plan - Picnic Playground.cdr (12/1/2015)

Stafford Lake Park Master Plan
Marin County, California
Detail Plan - Picnic Playground



LSA

FIGURE 9

SOURCE: RHAA 2015

P:\RJIA1491\gIS\Figure 9_Detail Plan - The Back Meadow.cdr (12/1/2015)

Stafford Lake Park Master Plan
Marin County, California
Detail Plan - The Back Meadow

III. CIRCULATION AND REVIEW

This Initial Study and the Notice of Intent to Adopt a Negative Declaration is being circulated to all agencies that have jurisdiction over the subject property or natural resources affected by the project and to community groups and interested parties to attest to the completeness and adequacy of the information contained in the Initial Study as it relates to the concerns that are germane to the agency's jurisdictional authority or to the interested parties' issues. The State Clearinghouse review period is 30 days as required by CEQA.

A. Marin County Agencies:

Marin County Parks
Marin County Flood Control and Water Conservation District
Marin County Department of Public Works (DPW), Land Use & Water Resources Division
Marin County Community Development Agency
Marin County Fire Department

B. Responsible Agencies:

North Marin Municipal Water District

C. Trustee Agencies (via State Clearinghouse):

California Department of Fish and Wildlife
United States Fish and Wildlife Service
NOAA National Marine Fisheries Service
San Francisco Bay Regional Water Quality Control Board

IV. EVALUATION OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Pursuant to Section 15063 of the State CEQA Guidelines, and the County EIR Guidelines, Marin County will prepare an Initial Study for all projects not categorically exempt from the requirements of CEQA. The Initial Study evaluation is a preliminary analysis of a project, which provides the County with information to use as the basis for deciding whether to prepare an Environmental Impact Report (EIR) or Negative Declaration. The points enumerated below describe the primary procedural steps undertaken by the County in completing an Initial Study checklist evaluation and, in particular, the manner in which significant environmental effects of the project are made and recorded.

- A. The determination of significant environmental effect is to be based on substantial evidence contained in the administrative record and the County's environmental database consisting of factual information regarding environmental resources and environmental goals and policies relevant to Marin County. As a procedural device for reducing the size of the Initial Study document, relevant information sources cited and discussed in topical sections of the checklist evaluation are incorporated by reference into the checklist (e.g. general plans, zoning ordinances). Each of these information sources has been assigned a number which is shown in parenthesis following each topical question and which corresponds to a number on the data base source list provided herein as Appendix C. Other sources used or individuals contacted may also be cited in the discussion of topical issues where appropriate.
- B. In general, a Negative Declaration shall be prepared for a project subject to CEQA when either the Initial Study demonstrates that there is no substantial evidence that the project may have one or more significant effects on the environment. A Negative Declaration shall also be prepared if the

Initial Study identifies potentially significant effects, but revisions to the project made by or agreed to by the applicant prior to release of the Negative Declaration for public review would avoid or reduce such effects to a level of less than significance, and there is no substantial evidence before the Lead County Department that the project as revised will have a significant effect on the environment. A signature block is provided in Section VII of this Initial Study to verify that the project sponsor has agreed to incorporate mitigation measures into the project in conformance with this requirement.

- C. All answers to the topical questions must take into account the whole of the action involved, including off-site as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts. Significant unavoidable cumulative impacts shall be identified in Section VI of this Initial Study (Mandatory Findings of Significance).
- D. A brief explanation shall be given for all answers except "Not Applicable" answers that are adequately supported by the information sources the Lead County Department cites in the parenthesis following each question. A "Not Applicable" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g. the project falls outside a fault rupture zone). A "Not Applicable" answer shall be discussed where it is based on project-specific factors as well as general standards (e.g. the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- E. "Less Than Significant Impact" is appropriate if an effect is found to be less than significant based on the project as proposed and without the incorporation of mitigation measures recommended in the Initial Study.
- F. "Potentially Significant Unless Mitigated" applies where the incorporation of recommended mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The Lead County Department must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section V, may be cross-referenced).
- G. "Significant Impact" is appropriate if an effect is significant or potentially significant, or if the Lead County Department lacks information to make a finding that the effect is less than significant. If there are one or more effects, which have been determined to be significant and unavoidable, an EIR shall be required for the project.
- H. The answers in this checklist have also considered the current California Environmental Quality Act Guidelines and the Initial Study Checklist contained in those Guidelines.

V. ISSUES (and Supporting Information Sources):

A. LAND USE AND PLANNING

Would the proposal:

a) Conflict with applicable Countywide Plan designation or zoning standards?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
--	--------------------	--	------------------------------	----------------

(source #(s): 1, 3, 4, 5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
---------------------------	--------------------------	--------------------------	-------------------------------------	--------------------------

The Master Plan proposes improvements within the boundaries of the existing Stafford Lake Park. The County Park is located within unincorporated Marin County and subject to the land use and zoning designations of the Marin Countywide Plan (CWP).

For policy purposes, Marin County is divided into three environmental corridors with Stafford Lake Park located within the Inland Rural Corridor. The CWP establishes seven planning areas in the county that further define policies applicable to specific areas and parcels. Stafford Lake Park is located in the Novato Planning Area and has a land use designation of Public Facility (PF) - Open Space (OS) (Map 1.2 West Novato Land Use Policy Map). The Marin County Code specifies that the parcel is zoned Agriculture and Conservation and Limited Agriculture (A60, A2-B4) which allows for public parks as a permitted use.

The proposed project would not require a change to the County land use or zoning designations, thus the proposed project would not conflict with applicable CWP land use designations or County zoning standards.

b) Conflict with applicable environmental plans or policies adopted by Marin County?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental Policies in the Marin Countywide Plan

The environmental protection policies contained in the CWP that pertain to the proposed project include the following: (1) species and habitat preservation; (2) invasive species control; (3) appropriate streamside development and erosion control; (4) prevention of air, water, and noise pollution; (5) protection of visual resources and amenities; (6) protection of historic resources; and (7) prevention of traffic impacts and promotion of alternative modes of transportation. The relevant policies are listed below, followed by the policy analyses.

The discussion of policy consistency in this Initial Study represents Marin County Parks staff interpretation of policies, but does not determine policy consistency. The formal policy consistency determinations are made by County decision-makers. Policy inconsistencies may not necessarily indicate significant environmental effects. Section 15358(b) of the CEQA Guidelines states that "effects analyzed under CEQA must be related to a physical change in the environment." Therefore, only those policy inconsistencies that would lead to a significant effect on the physical environment are considered significant impacts pursuant to CEQA. Where potentially significant environmental impacts are raised in the discussion below, they have been mitigated to a less than significant impact and, therefore, project activities are determined to be consistent with the relevant policies cited. Mitigations are addressed further in the topical impact sections following plan policy analyses.

a. Special-Status Species and Sensitive Habitat Areas

BIO-1.1 *Protect Wetlands, Habitat for Special-Status Species, Sensitive Natural Communities, and Important Wildlife Nursery Areas and Movement Corridors.*

Protect sensitive biological resources, wetlands, migratory species of the Pacific flyway, and wildlife movement corridors through careful environmental review of proposed development applications, including consideration of cumulative impacts, participation in comprehensive habitat management programs with other local and resource agencies, and continued acquisition and management of open space lands that provide for permanent protection of important natural habitats.

- BIO-1.3** **Protect Woodlands, Forests and Tree Resources.** *Protect large native trees, trees with historical importance; oak woodlands; healthy and safe eucalyptus groves that support colonies of monarch butterflies, colonial nesting birds, or known raptor sites; and forest habitats. Prevent the untimely removal of trees through implementation of standards in the Development Code and the Native Tree Preservation and Protection Ordinance. Encourage other local agencies to adopt tree preservation ordinances to protect native trees and woodlands, regardless of whether they are located in urban or undeveloped areas.*
- BIO-2.1** **Include Resource Preservation in Environmental Review.** *Require environmental review pursuant to CEQA of development applications to assess the impact of proposed development on native species and habitat diversity, particularly special-status species, sensitive natural communities, wetlands, and important wildlife nursery areas and movement corridors. Require adequate mitigation measures for ensuring the protection of any sensitive resources and achieving “no net loss” of sensitive habitat acreage, values, and function.*
- BIO-2.2** **Limit Development Impacts.** *Restrict or modify proposed development in areas that contain essential habitat for special-status species, sensitive natural communities, wetlands, baylands and coastal habitat, and riparian habitats, as necessary to ensure the continued health and survival of these species and sensitive areas. Development projects should preferably be modified to avoid impacts on sensitive resources, or to adequately mitigate impacts by providing on-site or (as a lowest priority) off-site replacement at a higher ratio.*
- BIO-2.3** **Preserve Ecotones.** *Condition or modify development permits to ensure that ecotones, or natural transitions between habitat types, are preserved and enhanced because of their importance to wildlife. Ecotones of particular concern include those along the margins of riparian corridors, baylands and marshlands, vernal pools, and woodlands and forests where they transition to grasslands and other habitat types.*
- BIO-2.4** **Protect Wildlife Nursery Areas and Movement Corridors.** *Ensure that important corridors for wildlife movement and dispersal are protected as a condition of discretionary permits, including consideration of cumulative impacts. Features of particular importance to wildlife for movement may include riparian corridors, shorelines of the coast and bay, and ridgelines. Linkages and corridors shall be provided that connect sensitive habitat areas such as woodlands, forests, wetlands, and essential habitat for special-status species, including an assessment of cumulative impacts.*
- TRL-2.1** **Preserve the Environment.** *In locating and designing trails, protect sensitive habitat and natural resources by avoiding those areas, forests, wetlands, and essential habitat for special-status species, including an assessment of cumulative impacts.*

Consistent. As documented in Section IV.7, Biological Resources, special-status plant and animal species, trees, and other natural vegetation could be adversely affected by development of proposed

park improvements under the Master Plan. However, Section IV.7, Biological Resources and Section IV.4, Water, include Mitigation Measures 8.A.1 through 8.A.3, 8.B.1 through 8.B.4 and Mitigation Measure 4.A, which would reduce potential impacts to biological resources to a less than significant level. Therefore, with recommended mitigation measures in place, the Master Plan would be consistent with CWP policies BIO-1.1, 1.3, BIO-2.1, through 2.4, and TRL-2.1.

b. Non-Native Invasive Plants

BIO-1.5 ***Promote Use of Native Plant Species.** Encourage use of a variety of native or compatible nonnative, non-invasive plant species indigenous to the site vicinity as part of project landscaping to improve wildlife habitat values.*

BIO-1.6 ***Control Spread of Invasive Exotic Plants.** Prohibit use of invasive species in required landscaping as part of the discretionary review of proposed development. Work with landowners, landscapers, the Marin County Open Space District, nurseries, and the multi-agency Weed Management Area to remove and prevent the spread of highly invasive and noxious weeds. Invasive plants are those plants listed in the State's Noxious Weed List, the California Invasive Plant Council's list of "Exotic Pest Plants of Greatest Ecological Concern in California," and other priority species identified by the agricultural commissioner and California Department of Agriculture.*

BIO-1.7 ***Remove Invasive Exotic Plants.** Require the removal of invasive exotic species, to the extent feasible, when considering applicable measures in discretionary permit approvals for development projects unrelated to agriculture, and include monitoring to prevent re-establishment in managed areas.*

Consistent. As documented in Section IV.7 Biological Resources, implementation of Mitigation Measures 8.C.1 through 8.C.3 would prevent the spread of invasive species throughout the site and onto adjacent lands. Therefore, the proposed project would be consistent with CWP policies BIO-1.5 through 1.7.

c. Bird Nesting

BIO-2.5 ***Restrict Disturbance in Sensitive Habitat During Nesting Season.** Limit construction and other sources of potential disturbance in sensitive riparian corridors, wetlands, and baylands to protect bird nesting activities. Disturbance should generally be set back from sensitive habitat during the nesting season from March 1 through August 1 to protect bird nesting, rearing, and fledging activities. Preconstruction surveys should be conducted by a qualified professional where development is proposed in sensitive habitat areas during the nesting season, and appropriate restrictions should be defined to protect nests in active use and ensure that any young have fledged before construction proceeds.*

Consistent. As documented in Section IV.7, Biological Resources, implementation of Mitigation Measure 8.A.3 would reduce potential impacts to nesting birds protected by the Migratory Bird Treaty Act and California Fish and Game Code to a less than significant level. Therefore, the proposed project would be consistent with CWP policy BIO-2.5.

d. Wildlife Movement

BIO-2.6 ***Identify Opportunities for Safe Wildlife Movement.** Ensure that existing stream channels and riparian corridors continue to provide for wildlife movement at roadway crossings, preferably through the use of bridges, or through over-sized culverts, while*

maintaining or restoring a natural channel bottom. Consider the need for wildlife movement in designing and expanding major roadways and other barriers in the county. Of particular concern is the possible widening of Highway 101 north of Novato to the county line, where maintenance of movement opportunities for terrestrial wildlife between the undeveloped habitat on Mount Burdell and the marshlands along the Petaluma River is critical.

Consistent. The proposed project would construct park and recreation improvements within an existing 139-acre county park and would not substantially interfere with wildlife movement. Fencing already defines the boundary between the Park and the adjacent property. Therefore, the proposed project would be consistent with CWP policy BIO-2-6.

e. Wetlands

BIO-3.1 **Protect Wetlands.** *Require development to avoid wetland areas so that the existing wetlands and upland buffers are preserved and opportunities for enhancement are retained (areas within setbacks may contain significant resource values similar to those within wetlands and also provide a transitional protection zone). Establish a Wetland Conservation Area (WCA) for jurisdictional wetlands to be retained, which includes the protected wetland and associated buffer area. Development shall be set back a minimum distance to protect the wetland and provide an upland buffer. Larger setback standards may apply to wetlands supporting special-status species or associated with riparian systems and baylands under tidal influence, given the importance of protecting the larger ecosystems for these habitat types as called for under Stream Conservation and Baylands Conservation policies defined in Policy BIO-4.1 and BIO-5.1, respectively. Regardless of parcel size, a site assessment is required either where incursion into a WCA is proposed or where full compliance with all WCA criteria would not be met. Employ the following criteria when evaluating development projects that may impact wetland areas: Coastal, Inland Rural, and Baylands Corridors.*

- *For all parcels, provide a minimum 100-foot development setback from wetlands (areas within setbacks may contain significant resource values similar to those within wetlands and also provide a transitional protection zone). An additional buffer may be required, based on the results of a site assessment, if such an assessment is determined to be necessary. Site assessments will be required and conducted pursuant to Program BIO-3.c, Require Site Assessment. Exceptions to full compliance with the WCA setback standards may apply only in the following cases:*
 1. *Parcel is already developed with an existing use, provided no unauthorized fill or other modifications to wetlands have occurred as part of ongoing use of the property.*
 2. *Parcel is undeveloped and falls entirely within the WCA.*
 3. *Parcel is undeveloped and potential impacts on water quality, wildlife habitat, or other sensitive resources would be greater as a result of development outside the WCA than development within the WCA, as determined by a site assessment.*
 4. *Wetlands are avoided and a site assessment demonstrates that minimal incursion within the minimum WCA setback distance would not result in any significant adverse direct or indirect impacts on wetlands*

BIO-3.2 **Require Thorough Mitigation.** *Where avoidance of wetlands is not possible, require provision of replacement habitat on-site through restoration and/or habitat creation at a minimum ratio of 2 acres for each acre lost (2:1 replacement ratio) for on-site mitigation and a minimum 3:1 replacement ratio for off-site mitigation. Mitigation wetlands should be of the same type as those lost and provide habitat for the species that use the existing wetland. Mitigation should also be required for incursion within the minimum WCA setback/transition zone.*

Consistent. As documented in Section IV.7 Biological Resources, implementation of Mitigation Measures 8.B.1 and 8.B.2 would ensure that potential impacts to wetlands and other jurisdictional waters would be reduced to a less than significant level. Therefore, the proposed project would be consistent with CWP policies BIO-3.1 and BIO-3.2.

f. Erosion Control

WR-1.1 **Protect Watersheds and Aquifer Recharge.** *Give high priority to the protection of watersheds, aquifer-recharge areas, and natural drainage systems in any consideration of land use.*

WR-1.3 **Improve Infiltration.** *Enhance water infiltration throughout watersheds to decrease accelerated runoff rates and enhance groundwater recharge. Whenever possible, maintain or increase a site's predevelopment infiltration to reduce downstream erosion and flooding.*

WR-1.4 **Protect Upland Vegetation.** *Limit development and grazing on steep slopes and ridgelines in order to protect downslope areas from erosion and to ensure that runoff is dispersed adequately to allow for effective infiltration.*

WR-2.3 **Avoid Erosion and Sedimentation.** *Minimize soil erosion and discharge of sediments into surface runoff, drainage systems, and water bodies. Continue to require grading plans that address avoidance of soil erosion and on-site sediment retention. Require developments to include on-site facilities for the retention of sediments, and, if necessary, require continued monitoring and maintenance of these facilities upon project completion.*

WR-2.4 **Design County Facilities to Minimize Pollutant Input.** *Design, construct, and maintain County buildings, landscaped areas, roads, bridges, drainages, and other facilities to minimize the volume of toxics, nutrients, sediment, and other pollutants in stormwater flows, and continue to improve road maintenance methods to reduce erosion and sedimentation potential.*

Consistent. Construction of improvements proposed as part of the Master Plan would include grading and earthwork, which could result in erosion and loss of topsoil. Exposed soils could be entrained in stormwater runoff and transported off the project site. As described in Section IV.3 Geophysical and IV.4, Water, of this Initial Study, a Stormwater Pollution Prevention Plan (SWPPP) will be required for construction at the project site that disturbs one acre or more of topsoil. Although designed primarily to protect stormwater quality, the SWPPP would incorporate Best Management Practices (BMPs) to minimize erosion. With preparation and implementation of a SWPPP, which is required under existing regulations, potential soil erosion impacts would be less than significant. Therefore, the Master Plan would be consistent with CWP policies WR-1.1, 1.3, 1.4, 2.3, or 2.4.

g. Hydrology

EH-3.2 ***Retain Natural Conditions.*** *Ensure that flow capacity is maintained in stream channels and floodplains, and achieve flood control using biotechnical techniques instead of storm drains, culverts, riprap, and other forms of structural stabilization.*

Consistent. As described in Section IV.4, Water, of this Initial Study, the project would be required to comply with Section E.12 of the Phase II General Permit that requires implementation of Low Impact Development (LID) standards. Under the Phase II General Permit, regulated projects are required to incorporate BMPs designed into project features and operations to reduce potential impacts to surface water quality and to manage changes in the timing and quantity of runoff associated with development of the project site. The BMPs are typically detailed in a Stormwater Control Plan (SCP) for the project site and proposed development. The SCP may include, but is not be limited to, LID measures (such as minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source) and a funding mechanism for the maintenance of all BMPs for the life of the proposed project. Therefore, the project would be consistent with CWP policy EH-3.2.

h. Air Quality

AIR-1.2 ***Meet Air Quality Standards.*** *Seek to attain or exceed the more stringent of federal or State Ambient Air Quality Standards for each measured pollutant.*

AIR-4.1 ***Reduce Greenhouse Gas Emissions.*** *Adopt practices that promote improved efficiency and energy management technologies; shift to low-carbon and renewable fuels and zero emission technologies.*

Consistent. As discussed in Section IV.5, the proposed project's construction and operations emissions would not: 1) conflict with any applicable air quality plan; 2) generate levels of emissions that violate any air quality standard; or 3) contribute substantially to an existing or projected air quality violation. The project is not expected to result in a cumulative increase of any criteria pollutant for which the project area is in non-attainment under an applicable federal or state ambient air quality standard or adversely affect sensitive receptors. With respect to global climate change, the proposed project would not conflict with the County's Greenhouse Gas Reduction Plan or generate greenhouse gases that would contribute to the cumulative effects of global warming. The project would also comply with County greenhouse gas reduction strategies through the implementation of Best Management Practices for construction activities. Therefore, the Master Plan would be consistent with CWP policy AIR-1.2 and AIR-4.1.

i. Public Involvement

OS-1.1 ***Enhance Open Space Stewardship.*** *Promote collaborative resource management among land management agencies. Monitor resource quality. Engage the public in the stewardship of open space resources.*

Consistent. As outlined in the project description, one focus of the Master Plan is to provide alternative, nature-based recreation. The plan includes opportunities for interpretive signage and displays at sensitive environmental and cultural spaces within the park to promote education and stewardship of park resources. Therefore, the project would be consistent with CWP policy OS-1.1.

j. Countywide Trail System

- TRL-1.1** *Protect the Existing Countywide Trail System. Maintain the existing countywide trail system and protect the public's right to access it.*
- TRL-1.2** *Expand the Countywide Trail System. Acquire additional trails to complete the proposed countywide trail system, providing access to or between public lands and enhancing public trail use opportunities for all user groups, including multi-use trails, as appropriate.*

Consistent. The Master Plan proposes additional trails and trail connections within Stafford Lake Park, thereby protecting and enhancing the County's existing trail system and providing increased public access to Marin County trails. Therefore, the Master Plan would be consistent with CWP policies TRL-1.1 and 1.2.

k. Trespass

- TRL-2.2** *Respect the Rights of Private Landowners. Design and manage trails to avoid trespass and trail construction impacts on adjacent private land.*

Consistent. The Master Plan proposes additional trails and trail connections within Stafford Lake Park. These trails would be located largely on County-owned land, within the existing park boundary and separated from adjacent private property. Any trails proposed on adjacent private property (e.g., NMWD property) would require permission from the adjacent landowners. Therefore, the Master Plan would be consistent with CWP policy TRL-2.2.

l. User Safety

- TRL-2.3** *Ensure User Safety. Plan and maintain trails to protect the safety of trail users.*

Consistent. All trails proposed as part of the Master Plan would be designed and constructed consistent with County Design Standards to protect the safety of trail users. Signs would be installed at trailheads outlining Park rules, directing users to stay on designated trails and to respect private property rights. Therefore, the Master Plan would be consistent with CWP policy TRL-2.3.

m. Accessibility

- TRL-2.5** *Provide Access for Persons with Disabilities. Design and develop trails and trail programs to enhance accessibility by persons with disabilities.*

Consistent. The Master Plan would incorporate access for persons with disabilities. Parking, picnic areas, playground, and other facilities would comply with state and federal accessibility requirements. Therefore, the Master Plan would be consistent with CWP policy TRL-2.5.

n. Maintenance

- TRL-2.7** *Ensure Sustainable Maintenance. Continue to ensure that trails are responsibly maintained.*

Consistent. Proposed improvements included in the Master Plan would be maintained as part of Marin County Parks' routine operations and maintenance activities. Therefore, the Master Plan would be consistent with CWP policy TRL-2.7.

o. Visual

DES-4.1 ***Preserve Visual Quality.** Protect scenic quality and views of the natural environment – including ridgelines and upland greenbelts, hillsides, water, and trees — from adverse impacts related to development.*

Consistent. As described in Section IV.13, Aesthetics/Visual Resources, the Master Plan would not block or otherwise affect views from other areas. Proposed improvements would be designed to blend into and/or aesthetically refer to the natural and/or built surroundings. Prominent features are not proposed on ridgelines or hillsides and trail alignments would generally follow natural contours. Construction of proposed improvements would require the removal of some existing vegetation, but would retain the larger more visible trees and the vegetation associated with existing drainage areas. Therefore, the Master Plan would be consistent with CWP policy DES-4.1.

p. Noise

NO-1.3 ***Regulate Noise Generating Activities.** Require measures to minimize noise exposure to neighboring properties, open space, and wildlife habitat from construction-related activities, yard maintenance equipment, and other noise sources, such as amplified music.*

Consistent. As described in Section IV.10, Noise, the proposed project would not expose people to significant noise levels. Stafford Lake Park is an existing open space use and implementation of the Master Plan would not significantly increase ambient long-term noise levels in the plan area. Construction activities could result in a substantial temporary increase in ambient noise levels in Stafford Lake Park and adjacent land uses above levels without the Master Plan. However, the construction activities would occur approximately 1 mile from the nearest residential property line and therefore noise levels during construction would not substantially affect land uses adjacent to the park. Compliance with the hours specified in the Marin County Code regarding construction activities would reduce construction noise impacts on adjacent noise sensitive land uses. Therefore, the Master Plan would be consistent with CWP policy NO-1.3.

q. Health

PH-1.2 ***Promote Physical Activity.** Increase opportunities for and interest in safe and pleasant physical activity.*

PH-1.3 ***Promote Healthy Environments.** Provide school and community environments and policies that foster healthy lifestyles and behavior.*

Consistent. The Master Plan includes a variety of improvements (e.g., playground, climbing area, swimming lagoon, trails) that would provide recreational opportunities for all ages and interests. Therefore, the Master Plan would promote physical activities and healthy behavior and would be a beneficial effect consistent with CWP policies PH 1.2 and PH 1.3.

r. Bicycle Access

TR-2.1 ***Improve the Bicycle and Pedestrian Network.** Promote adequate bicycle and pedestrian links, to the extent feasible, throughout the county, including streetscape improvements and standards that are safe and pedestrian and bicycle friendly.*

TR-2.2 **Provide New Bicycle and Pedestrian Facilities.** *Where appropriate, require new development to provide trails or roadways and paths for use by bicycles and/or on- street bicycle and pedestrian facilities. In-lieu fees may be accepted if warranted in certain cases.*

TR-2.4 **Seek Funding Opportunities for Bicycle and Pedestrian Infrastructure.** *Seek grants and other funding opportunities available to construct new bicycle and pedestrian infrastructure and to connect existing segments.*

Consistent. The proposed Master Plan would include new pedestrian and bicycle paths to supplement existing pathways. Additionally, improved trail connections within the existing Terwilliger Trail and disc golf course trails are proposed. Therefore the Master Plan would be consistent with CWP policies TR-2.1, TR-2.2 and TR-2.4.

s. Transportation

TR-1.2 **Maintain Service Standards.** *Establish level of service standards for vehicles on streets and highways and performance standards for transit (see Map 3-8, Roadway Network of Marin County), bicycles, pedestrians, and other modes of transportation.*

Consistent. Implementation of the Master Plan is anticipated to generate an average of an additional 38 vehicle trips per weekday of which fewer than 2 trips would occur in the AM peak hour or PM peak hour. These trips would be added to Novato Boulevard, which provides access to the park. The intersection of Novato Boulevard/San Marin Drive-Sutro Avenue currently operates at satisfactory level of service (LOS) C. With completion of the Bike Park, the intersection is expected to operate at LOS D. However, LOS D is still considered satisfactory LOS. The increased traffic volume associated with implementation of the Master Plan represents less than 1 percent of the capacity of a travel lane and would therefore be less than significant. Therefore, the project would not cause the LOS at the intersection to deteriorate below acceptable standards and would be consistent CWP TR-1.2.

t. Historic Resources

HAR-1.3 **Avoid Impacts to Historical Resources.** *Ensure that human activity avoids damaging cultural resources.*

Consistent. As discussed in Section IV.14, Cultural Resources, due to the presence of previously recorded archaeological sites and the project's proximity to the creek, the area is considered sensitive for archaeological deposits. Ground disturbance associated with the project could affect subsurface deposits associated with CA-MRN-528, as well as previously unidentified prehistoric and historical resources and human remains in the project area. With implementation of Mitigation Measures 15.A.1 through 15.A.5, the impact on cultural resources from the proposed project would be less than significant. Therefore, the project is consistent with CWP policy HAR-1.3.

u. Hazards

EH-2.1 **Avoid Hazard Areas.** *Require development to avoid or minimize potential hazards from earthquakes and unstable ground conditions.*

EH-2.2 **Comply with the Alquist-Priolo Act.** *Continue to implement and enforce the Alquist-Priolo Earthquake Fault Zoning Act.*

Consistent. As described in Section IV.3, Geophysical, the project site is located in the San Francisco Bay Area, which is one of the more seismically active regions in the United States. As such, the potential for strong seismic shaking at the project site is high. Strong seismic shaking could result in potential damage to structures and improvements. The project site also contains colluvial soils that appear to be slightly to moderately expansive. Implementation of Mitigation Measure 3.A would reduce potential impacts associated with ground shaking and unstable ground to a less than significant level. With implementation of Mitigation Measure 3.A, the Master Plan would be consistent with CWP policies EH-2.1 or EH-2.2.

v. Parks and Recreation

PK-1.1 ***Conduct and Coordinate Park Planning.** Develop park and recreation facilities and programs to provide for active recreation, passive enjoyment, and protection of natural resources as a complement to local, state, and national parks and open space in Marin.*

PK-1.2 ***Consider User Needs, Impacts, and Costs.** Plan and develop any needed new park and recreation facilities and programs to meet the desires of the community and protect environmental resources.*

Consistent. The proposed Master Plan results from a public outreach process, which included public workshops, focus group meetings, and other opportunities for community input. As a result, the Master Plan includes a variety of park and recreation improvements, including new trails, paths, and picnic areas, playground, swimming lagoon, events area, a road, and parking areas, that respond to the needs/desires of the community. Therefore, the Master Plan is consistent with CWP policy PK-1.1 and PK-1.2.

c) Affect agricultural resources, operations, or contracts (e.g. impacts to soils or farmlands, impacts from incompatible land uses, or conflicts with Williamson Act contracts)?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 3, 6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Proposed Master Plan improvements would be located within the existing Stafford Lake Park, which is intended for recreational use. Adjacent properties are used for agricultural production, including pasture and growing hay. The Department of Conservation's Farmland Mapping and Monitoring Program designates the site and surrounding lands as "Grazing Land"; however, with the exception of APN 125-100-14 which has a short-term grazing lease associated with it, the Park is not currently used for grazing. In the past, portions of the Park have been leased for hay production. The loss of the hay production in the Park would not have a significant affect on adjacent agriculture uses. In addition, the site is not under a Williamson Act contract. Therefore, the Master Plan would not adversely affect agricultural resources, operations, or contracts.

d) Disrupt or divide the physical arrangement of an established community (including a low income or minority community)?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable

(source #(s): 1, 3, 5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
------------------------	--------------------------	--------------------------	-------------------------------------	--------------------------

The physical division of an established community typically refers to the construction of a physical feature (such as an interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community, or between a community and outlying area. Proposed Master Plan improvements are located entirely within the existing Stafford Lake Park, west of the City of Novato. The park is located near agricultural uses, a water storage facility, and other recreational and open space facilities, and is not located within or near an established community. Therefore, the Master Plan's impact to an established community would be less than significant.

e) Result in substantial alteration of the character or functioning of the community, or present or planned use of an area?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 3, 5, 7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Implementation of the Master Plan would provide new park and recreation facilities within the existing Stafford Lake Park. Proposed improvements are consistent with existing management practices and would comply with goals and policies established by Marin County Parks (e.g., Strategic Plan, Parks Master Plan).

Marin County Parks published a Strategic Plan in June 2008 to evaluate existing parks and open space and to describe improvements or facilities that respond to community needs. Stafford Lake Park is one of four regional county parks with substantial visitation and a variety of facilities not available elsewhere in the County. The Needs Assessment Report (Appendix A of the Strategic Plan) outlines community needs that include providing diverse recreation experiences and accommodating recreation preferences of Marin's youth. In addition to a shortage of park facilities in Novato, the Needs Assessment found that existing regional parks have substantial capacity to accommodate new recreation facilities. The Parks Master Plan (Appendix B of the Strategic Plan) assesses existing facilities and provides specific direction for renovating existing facilities. The Parks Master Plan recommends preparation of a master plan and details recommended improvements for Stafford Lake Park.

The Master Plan proposes new and improved recreation facilities within an existing regional county park that provides opportunities for active recreation use. The Master Plan would not create a new land use or increase traffic in the area (refer to Section V.6, *Transportation/Circulation*). Proposed improvements would be compatible with adjacent agricultural and open space uses. Therefore, the Master Plan would not alter the character or functioning of the surrounding community or present or planned use of the area. Implementation of the proposed Master Plan would enhance the character of the existing park and improve its function and utility for the community. This impact would be less than significant.

f) Substantially increase the demand for neighborhood or regional parks or other recreational facilities, or affect existing recreational opportunities?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable

(source #(s): 1, 3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
---------------------	--------------------------	--------------------------	-------------------------------------	--------------------------

Implementation of the Master Plan would create new park and recreation facilities within the existing Stafford Lake Park. The addition of these new facilities would likely increase use of Stafford Lake Park. However, as described above, the Needs Assessment prepared as part of the Strategic Plan, found that existing regional parks have substantial capacity to accommodate new recreation facilities. Therefore, implementation of the Master Plan would not increase the demand for neighborhood or regional parks or other recreational facilities, but instead would satisfy the need for diverse recreational opportunities within the area.

B. POPULATION AND HOUSING

Would the proposal:

a) Increase density that would exceed official population projections for the planning area within which the project site is located as set forth in the Countywide Plan and/or community plan?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Implementation of the Master Plan would entail construction of park and recreation improvements within the existing Stafford Lake Park and would not include development of residential housing. Therefore, the Master Plan would not affect population densities within Novato or the unincorporated communities of Marin County.

b) Induce substantial growth in an area either directly or indirectly (e.g. through projects in an undeveloped area or extension of major infrastructure)?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Implementation of the Master Plan would entail construction of park and recreation improvements within the existing Stafford Lake Park. It would not include development of residential housing or infrastructure or otherwise extend or establish uses that would induce population growth. Therefore, the Master Plan would not directly or indirectly induce population growth within Novato or the unincorporated communities of Marin County.

c) Displace existing housing, especially affordable housing?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Stafford Lake Park currently supports a trailer residence at the site of the staff maintenance yard. Under the proposed Master Plan, this site would be replaced with an event center structure. The trailer residence would not be replaced if the event center structure is constructed. However, the new maintenance yard would include a more permanent office building for Park rangers. No other residences are located within the park or would be affected by implementation of the Master Plan. Therefore, the Master Plan would not result in a significant impact related to this issue.

C. GEOPHYSICAL

Would the proposal result in or expose people to potential impacts involving:

a) Location in an area of geologic hazards, including but not necessarily limited to: 1) active or potentially active fault zones; 2) landslides or mudslides; 3) slope instability or ground failure; 4) subsidence; 5) expansive soils; 6) liquefaction; 7) tsunami; or 8) similar hazards?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 3, 5, 8)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Unless otherwise noted, this section is based on information obtained from the *Countywide Master Plan* and the County of Marin's Map Viewer.⁶

Faults: No mapped active faults cross the project site. The San Andreas Fault, located approximately 9 miles west of the site, is the only active fault in Marin County subject to the Alquist-Priolo Earthquake Fault Zoning Act. Fault rupture of the surface typically occurs along existing faults that have ruptured the surface in the past. Since faults with known surface rupture have been mapped in California, and none are known to occur at the project site, the potential for impacts to the proposed project due to fault rupture are less than significant.

Earthquakes on regional active faults, including the San Andreas, Rodgers Creek, Hayward, and West Napa, could cause seismic shaking at the site. Seismic shaking (or ground shaking) is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake, and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. Magnitude is a measure of the energy released by an earthquake; it is assessed by seismographs that measure the amplitude of seismic waves. Intensity is a subjective measure of the perceptible effects of seismic energy at a given point and varies with distance from the epicenter and local geologic conditions. The median peak ground acceleration at the project site during that seismic event has been estimated at 0.29g.^{7,8} This level of seismic shaking could cause substantial damage to structures and, therefore, seismic shaking is a significant impact requiring mitigation.

⁶ County of Marin, Countywide Plan Map Viewer, [Marin Countywide Plan Map Viewer:](http://www.marinmap.org/Geocortex/Essentials/Marinmap/Web/Viewer.aspx?Site=MMDataViewer)
<http://www.marinmap.org/Geocortex/Essentials/Marinmap/Web/Viewer.aspx?Site=MMDataViewer>

⁷ Miller Pacific Engineering Group, 2011. Geologic and Geotechnical Feasibility Study. Prepared for the Marin County Parks Department. June 23.

Subsidence: No documented regional subsidence has occurred in the vicinity of the project site and the proposed project does not propose any activities (e.g., groundwater pumping) that would contribute to subsidence. Therefore, this impact is less than significant.

Expansive Soils: Expansion and contraction of volume can occur when expansive soils undergo alternating cycles of wetting (swelling) and drying (shrinking). During these cycles, the volume of the soil changes markedly. Expansive soils are common throughout California and can cause damage to foundations and slabs unless properly treated during construction. The dominant soil types within the project site, the Los Osos-Bonny Dune complex and the Blucher-Cole complex, have low to moderate shrink-swell potential (based on regional mapping). A site-specific geotechnical feasibility study conducted for the Bike Park (within Stafford Lake Park) indicated that the “colluvial soils observed during our site reconnaissance appear to be slightly to moderately expansive.”⁹ Therefore, this impact is significant requiring mitigation.

Liquefaction: Liquefaction is the transformation of saturated, loose, fine-grained sediment to a fluid-like state because of earthquake shaking or other rapid loading. Soils most susceptible to liquefaction are loose to medium dense, saturated sands, silty sands, sandy silts, non-plastic silts and gravels with poor drainage, or those capped by or containing seams of impermeable sediment. The low-lying areas at the project site have a moderate susceptibility to liquefaction, while the liquefaction potential in the upland areas is low. Due to the moderate liquefaction potential in the low-lying areas, potential impacts associated with liquefaction would be significant.

Tsunamis and Dam Failure: The project site is located in the hilly uplands of Marin County and would not be subject to coastal hazards (including tsunamis). The only dam inundation zone in the vicinity is that associated with Stafford Lake, however, the proposed Master Plan elements are not located within the mapped inundation area.

Slope Instability/Landslides: Slope failure can occur as either rapid movement of large masses of soil (“landslide”) or slow, continuous movement (“creep”). Slope instability (which can result in landslides) is a concern because it can cause damage to infrastructure and buildings, and in some cases can even result in injuries or deaths. Landslides can also generate large quantities of easily-erodible material and therefore can impact runoff water quality and degrade downgradient habitats. The main factors that affect slope instability are slope steepness, soil type, underlying geologic material type and structure, vegetation, subsurface water content, and human activity (e.g., loading a slope with weight or excavating and undercutting the slope toe). In addition, seismic shaking can trigger a landslide.

Regional mapping indicates that areas of “mostly landslides” occur in the off-site uplands west of the Bike Park and in the southern area near the Disc Golf Course. In addition, the geotechnical feasibility study for the Bike Park identified areas of debris flows west of the Bike Park. Specifically, the geotechnical feasibility study indicated that the “potential for landslides and debris flows originating from this off-site area is moderate.”¹⁰ Landslides could cause substantial property damage and injuries to people. Due to the moderate landslide potential in the upland areas, potential impacts associated with slope instability would be significant.

⁸ Earthquake intensity can be quantitatively measured using accelerometers (strong motion seismographs) that record ground acceleration at a specific location, a measure of force applied to a structure under seismic shaking. Acceleration is measured as a fraction or percentage of the acceleration under gravity (g).

⁹ Miller Pacific Engineering Group, 2011. Op.cit.

¹⁰ Ibid., page 6.

IMPACT 3.A: The proposed development under the Master Plan would include construction of improvements in areas with potentially adverse geological conditions, including expansive soils, slope instability, liquefaction, and areas subject to seismic shaking. These improvements include utility lines, paved areas, a new gatehouse, bike paths, parking areas, a maintenance yard, and a lake pavilion. The potential for severe damage to improvements related to soil movement (resulting from expansive soils, seismic shaking, and or landslide), and the potential for injury of facility users (mostly related to trips and falls from uneven surfaces) would be a significant impact.

Mitigation Measure 3.A: Prior to grading, excavation, and construction of any improvements under the Master Plan that coincide with areas with potentially adverse geological conditions, a design-level geotechnical report shall be prepared by a licensed professional and submitted to Marin County Parks staff for review and approval. The geotechnical review shall specifically address potential adverse geological conditions at the site, including but not limited to expansive soils, slope instability, liquefaction, and seismic shaking and verify that the project plans incorporate the current California Building Code requirements, and other applicable design standards. All design measures, recommendations, design criteria, and specifications set forth in the design-level geotechnical review shall be implemented as a condition of project approval, which would reduce the impact to less than significant.

Monitoring Measure 3.A: Marin County Parks staff shall verify that Mitigation Measure GEO-1 has been fully implemented

b) Substantial erosion of soils due to wind or water forces and attendant siltation from excavation, grading, or fill?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 3, 5, 8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Grading and earthmoving during construction of the Master Plan elements has the potential to result in erosion and loss of topsoil. Exposed soils could be entrained in stormwater runoff and transported off the project site.

As specified in Section 4c below, a Stormwater Pollution Prevention Plan (SWPPP) will be required for construction that includes disturbance of 1 acre or more of soil at the project site. Although designed primarily to protect storm water quality, the SWPPP would incorporate Best Management Practices (BMPs) to minimize erosion. Additional details regarding the SWPPP are provided in Section 4, Water, of this Initial Study.

Preparation and implementation of a SWPPP, which is required by existing regulations, would reduce any potential soil erosion impacts to a less-than-significant level.

c) Substantial changes in topography from grading or fill, including, but not necessarily limited to: 1) ground surface relief features; geologic substructures or unstable soil conditions; and 3) unique geologic or physical features?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable

(source #(s): 1, 3, 5, 8)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---------------------------	--------------------------	-------------------------------------	--------------------------	--------------------------

Implementation of the Master Plan would require some excavation and grading, primarily for road, trail, and parking lot construction. In addition, some excavation would be required for new building foundations and installation of utilities. However, these activities would result in only a modest change in elevation and the existing topography of the project site would be maintained. The potential for the project to impact (or be impacted by) unstable soil conditions would be addressed through implementation of Mitigation Measure 3.A. No identified unique geologic features would be modified. Therefore, the proposed project would not result in significant impacts to topography or geologic features on the site.

IMPACT 3.B: The proposed project could impact (or be impacted by) unstable soil conditions.

Mitigation Measure 3.B: Implement Mitigation Measure 3.A.

Monitoring Measure 3.B: Implement Monitoring Measure 3.A.

D. WATER

Would the proposal result in:

a) Substantial changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 3, 5, 9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Construction of some of the elements of the Master Plan, including new paved roads, the new gatehouse, parking areas, and a maintenance yard would include the placement of new impervious surfaces at the project site. While most of the underlying soils are hydrologic class C and D,¹¹ which indicates they have low to very low ability to infiltrate water, a modest decrease in absorption of precipitation and a slight increase in runoff could occur under the project.

Since the project would create and/or replace 5,000 square feet or more of impervious surface, it would be required to comply with Section E.12 of the Small MS4 Phase II General Permit (Phase II General Permit)¹² that requires implementation of measures for site design, source control, runoff reduction, storm water treatment and baseline hydromodification¹³ management. The Phase II General Permit

¹¹ Natural Resources Conservation District (NRCS), 2015. Web Soil Survey, website: [National Conservation Service's web soil survey: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm](http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm) (accessed 11/17/15)

¹² NPDES General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems (Small MS4 Permit), Order No. 2013-0001-DWQ

¹³ Hydromodification is the alteration of the natural flow of water through a landscape, and often takes the form of creek channel erosion. Hydromodification is one of the leading sources of impairment in streams, lakes, and estuaries.

also requires implementation of Low Impact Development (LID) standards. LID uses design techniques such as harvest and reuse, infiltration, evapotranspiration to mimic a site's pre-development hydrology.

The Phase II General Permit requires regulated projects (which includes implementation of the Master Plan) to include facilities designed to evapotranspire, infiltrate, harvest/use, and biotreat storm water to meet at least one of the hydraulic sizing design criteria included in the Phase II General Permit. To comply with the Phase II General Permit, a Stormwater Control Plan that describes the project specific measures must be prepared and implemented. Since LID measures would be required under existing NPDES regulations and these measures encourage reuse, infiltration, and bioretention so that site hydrology is not substantially altered, this potential impact is less than significant.

b) Exposure of people or property to water related hazards, including, but not necessarily limited to: 1) flooding; 2) debris deposition; or 3) similar hazards?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 3, 5, 10, 11)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Most of the Master Plan area is not located within a 100-year flood hazard zone as designated by the Federal Emergency Management Agency (FEMA),¹⁴ and therefore these areas outside the 100-year flood hazard zone would not be subject to storm-related flooding. Only the lake itself and the corridor along Novato Creek (approximately 200 feet wide) are located within the FEMA 100-year flood hazard zone. Elements of the Master Plan that would encroach into the flood zone include the vehicular bridge and boardwalk over Novato Creek, and the fishing deck (which extends into the lake). It is possible that the vehicular bridge and boardwalk could be constructed in a way that blocks flood flows or displaces floodplain storage, potentially modifying the extent of the flood hazard zone (no detailed specifications for these structures was available for this analysis). If built in this manner, this would be a significant impact requiring mitigation. No impacts related to flooding would be expected from construction of the fishing deck.

The Master Plan area is not located within any mapped dam failure inundation area,¹⁵ and therefore potential impacts related to dam failure inundation are less than significant.

IMPACT 4.A: The proposed vehicular bridge and boardwalk could be constructed in a way that blocks flood flows or displaces floodplain storage, potentially modifying the extent of the flood hazard zone and exposing people and or property to flood hazards.

Mitigation Measure 4.A: The proposed vehicular bridge and boardwalk shall be designed by a qualified professional engineer to minimize changes to stormwater flow and flood waters. The design shall ensure that the road and boardwalk decks are above the base flood elevation and that encroachment into the flood hazard zone does not exacerbate flooding or restrict the movement of floodwater and the design ensures that people and/or property are not subject to flood-related hazards, thereby reducing this impact to less than significant.

¹⁴ Federal Emergency Management Agency (FEMA), 2009. Flood Insurance Rate Map, Map No. 06041C0257D, May 4.

¹⁵ County of Marin, Countywide Plan Map Viewer, <http://gis.marinpublic.com/Html5Viewer/Index.html?viewer=cwp>

Monitoring Measure 4.A: Marin County Parks staff shall verify that Mitigation Measure 4.A has been fully implemented.

c) Discharge of pollutants into surface or ground waters or other alteration of surface or ground water quality (e.g. temperature, dissolved oxygen or turbidity?)	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 3, 5, 12)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Most of the land uses and improvements proposed under the Master Plan are relatively low-intensity and would not have the potential to substantially increase the discharge of pollutants to surface water or groundwater. However, the project would include construction and operation of some new paved roads, parking areas, and a maintenance yard.

Construction: During the construction period, excavation and grading activities would result in exposure of soil to runoff, potentially causing erosion and entrainment of sediment in the runoff. Soil stockpiles and excavations on the project site would be exposed to runoff and, if not managed properly, the runoff could cause erosion and increased sedimentation in water courses outside of the project site.

Consistent with the requirements of the statewide Construction General Permit,¹⁶ the project applicant shall prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) designed to reduce potential adverse impacts to surface water quality through the project construction period. Under the existing regulations, the SWPPP must be designed to address the following objectives: (1) all pollutants and their sources, including sources of sediment associated with construction, construction site erosion and all other activities associated with construction activity are controlled; (2) where not otherwise required to be under a Water Board permit, all non-storm water discharges are identified and either eliminated, controlled, or treated; (3) site Best Management Practices (BMPs) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity to the Best Available Technology and Best Conventional Technology (BAT/BCT) standard; (4) calculations and design details as well as BMP controls for site run-on are complete and correct, and (5) stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.

The SWPPP must be prepared by a Qualified SWPPP Developer and include the minimum BMPs required for the identified Risk Level. The SWPPP must include a construction site monitoring program that identifies requirements for dry weather visual observations of pollutants at all discharge locations, and as appropriate, depending on the project Risk Level, sampling of the site effluent and receiving waters (receiving water monitoring is only required for some Risk Level 3 dischargers). A Qualified SWPPP Practitioner (QSP) shall be responsible for implementing the BMPs at the site. The QSP shall also be responsible for performing all required monitoring, and BMP inspection, maintenance and repair activities. If the project is Risk Level 2 or 3, the project applicant shall also prepare a Rain Event Action Plan as part of the SWPPP.

¹⁶ NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ, NPDES No. CAS000002 (Construction General Permit)

Compliance with the existing regulations that require preparation and implementation of a SWPPP would ensure that potential impacts to water quality during construction are less than significant.

Operation: During the operation period, proposed elements under the Master Plan could result in an increase in pollutant discharges associated with automobile use at the project site. As described in Section 4a) above, the project would be required to comply with Section E.12 of the Phase II General Permit that requires implementation of LID standards. One of the main goals of LID design measures is to treat post-construction stormwater runoff so that receiving water quality is protected.

Under the Phase II General Permit, regulated projects are required to incorporate BMPs designed into project features and operations to reduce potential impacts to surface water quality and to manage changes in the timing and quantity of runoff associated with development of the project site. The BMPs are typically detailed in a Stormwater Control Plan (SCP) for the project site and proposed development. The SCP may include, but is not be limited to, LID measures (such as minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source) and a funding mechanism for the maintenance of all BMPs for the life of the proposed project.

Compliance with the existing regulations that require compliance with Phase II General Permit post-construction stormwater management requirements would ensure that potential impacts to water quality during the operation period are less than significant.

d) Substantial change in the amount of surface water in any water body or ground water either through direct additions or withdrawals, or through intersection of an aquifer by cuts or excavations?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 3, 5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The improvements proposed under the Master Plan do not include any facilities that would change the surface water in any water body or ground water through direct additions or withdrawals. In addition, the project would not interfere with any aquifer. Therefore, the potential for the project to result in substantial changes in the amount of surface water in any water body or ground water would be less than significant.

e) Substantial changes in the flow of surface or ground waters, including, but not necessarily limited to: 1) currents; 2) rate of flow; or 3) the course or direction of water movements?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 3, 5, 10)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The improvements proposed under the Master Plan, in general, do not include substantial changes to the flow of surface and groundwater. The new impervious surfaces are not continuous, but are surrounded by unimproved lands where runoff from the new impervious surface can be infiltrated, in

accordance with requirements of the Phase II MS4 General Permit (as described in a) above). The project would not result in a significant impact related to this issue.

No streams or creek channels would be rerouted or substantially altered. However, the proposed vehicular bridge and boardwalk over Novato Creek would include foundation supports adjacent to (and potentially within) the creek channel, and these structures could change the flow of surface water.

IMPACT 4.B: The proposed vehicular bridge and boardwalk over Novato Creek would include foundation supports that could change the flow of surface water within the creek channel. This impact would be significant.

Mitigation Measure 4.B: Implement Mitigation Measure 4.A. Implementation of this mitigation measure would reduce this impact to insignificance.

Monitoring Measure 4.B: Implement Monitoring Measure 4.A..

f) Substantial reduction in the amount of water otherwise available for public water supplies?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s):)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The Master Plan would include the use of water for construction, operation and maintenance of proposed improvements. Water would be supplied by the existing (and expanded) public water infrastructure within Stafford Lake Park. Implementation of the Master Plan would result in a slight increase in water demand over existing levels. However, the increase in demand would not significantly reduce the quantity of public water supplies. Therefore, this impact is considered less than significant.

E. AIR QUALITY

Would the proposal:

a) Generate substantial air emissions that could violate official air quality standards or contribute substantially to an existing or projected air quality violation?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 13)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Stafford Lake Park is located in unincorporated Marin County within the San Francisco Bay Area Air Basin and is governed by the Bay Area Air Quality Management District (BAAQMD). Within the BAAQMD, ambient air quality standards for ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM₁₀, PM_{2.5}), and lead (Pb) have been set by both the State of California and the federal government. The State has also set standards for sulfate and visibility. The BAAQMD is under State non-attainment status for ozone and particulate matter standards. The

BAAQMD is classified as non-attainment for the federal ozone 8-hour standard and non-attainment for the federal PM_{2.5} 24-hour standard.

Pollutant monitoring results for the years 2012 to 2014 at the San Rafael ambient air quality monitoring station (the closest monitoring station to Stafford Lake Park) indicate that air quality in the County of Marin has generally been good. The monitoring results indicated only one violation of the State PM₁₀ standard occurred during the 3-year period and no violations of the federal PM₁₀ standard were recorded. PM_{2.5} levels exceeded the federal standard once in 2014, twice in 2013, and none were recorded in 2012. Both State and federal 1-hour ozone standards were not exceeded in the 3-year period, and the federal 8-hour ozone standards were not exceeded in the 3-year period at this monitoring station. The CO, SO₂, and NO₂ standards were also not exceeded in this area during the 3-year period.

According to the BAAQMD CEQA Guidelines, to meet air quality standards for operational-related criteria air pollutant and air precursor impacts, the project must not:

- Contribute to CO concentrations exceeding the State ambient air quality standards;
- Generate average daily construction emissions of ROG, NO_x or PM_{2.5} (exhaust) greater than 54 pounds per day or PM₁₀ exhaust emissions greater than 82 pounds per day; or
- Generate operational emissions of ROG, NO_x or PM_{2.5} of greater than 10 tons per year or 54 pounds per day or PM₁₀ emissions greater than 15 tons per year or 82 pounds per day.

The following sections describe the project's CO impacts and construction- and operation-related air quality impacts and CO impacts associated with implementation of the Master Plan. The discussion for localized CO impacts and operational emissions analyzes the impact of the Master Plan. The conclusions are summarized at the end of each subsection. As discussed, impacts would be less than significant for localized CO emissions and operational emissions. Impacts associated with construction-period emissions would be less than significant with implementation of recommended mitigation measures.

Localized CO Impacts: Emissions and ambient concentrations of CO have decreased dramatically in the Bay Area with the introduction of the catalytic converter in 1975. No exceedances of the State or federal CO standards have been recorded at Bay Area monitoring stations since 1991. The BAAQMD's 2010 CEQA Guidelines include recommended methodologies for quantifying concentrations of localized CO levels for proposed transportation projects. A screening level analysis using guidance from the BAAQMD CEQA Guidelines was performed to determine impacts of CO concentrations associated with implementation of the proposed Master Plan. The screening methodology provides a conservative indication of whether implementing a project would result in significant CO emissions. According to the BAAQMD's CEQA Guidelines, implementation of a project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria are met:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, and the regional transportation plan and local congestion management program established by the county congestion management agency for designated roads or highways, and the regional transportation plan and local congestion management agency plans.
- Traffic generated by the project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.

- The project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, or below-grade roadway).

Implementation of the Master Plan would not conflict with the Transportation Authority of Marin's Congestion Management Program for designated roads or highways, a regional transportation plan, or other agency plans. Stafford Lake Park is not located in an area where vertical or horizontal mixing of air is substantially limited. In addition, the Master Plan would increase daily trips by 38 trips per week day and 47 trips per weekend day and would not increase traffic volumes to more than 44,000 vehicles per hour. Intersection level of service associated with the Master Plan would not decline. Therefore, this impact would be less than significant.

Construction Period Impacts: Air pollutant emissions associated with construction of the projects proposed in the Master Plan would primarily occur over the short-term in association with construction activities, including demolition, excavation and vehicle/equipment use.

Construction activities associated with implementation of the proposed Master Plan could generate exhaust emissions and fugitive dust that would affect local air quality.

During construction, short-term degradation of air quality may occur due to the release of particulate matter emissions (i.e., fugitive dust) generated by excavation, grading, hauling, and other activities. Emissions from construction equipment are also anticipated and would include CO, NO_x, ROG, directly-emitted particulate matter (PM_{2.5} and PM₁₀), and TACs such as diesel exhaust particulate matter.

Site preparation and construction would involve clearing, cut-and-fill activities, grading, and building activities. Construction-related effects on air quality would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling, and transport of soils on the site. If not properly controlled, these activities would temporarily generate PM₁₀, PM_{2.5}, and to a lesser extent CO, SO₂, NO_x, and volatile organic compounds. Sources of fugitive dust would include disturbed soils at the construction sites and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM₁₀ emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM₁₀ emissions would depend on soil moisture, the silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site. These emissions would be temporary and limited to the immediate area surrounding the construction sites.

Construction emissions for the activities described above were estimated for the projects proposed in the Master Plan using the California Emissions Estimator Model (CalEEMod). Construction-related emissions and applicable thresholds are presented in Table 5.A. Model output sheets are included in Appendix A. As shown in Table 5.A, average daily construction emissions would not exceed the BAAQMD's numeric threshold for ROG, NO_x or particulate matter exhaust emissions.

Table 5.A: Construction Emissions Estimates

Construction Emissions	ROG	NO _x	CO	Exhaust PM _{2.5}	Exhaust PM ₁₀
Average Daily Emissions (pounds/day)	16.62	28.34	22.22	1.63	1.75

BAAQMD Thresholds	54.0	54.0	NA	54.0	82.0
Exceed Threshold?	No	No	NA	No	No

Source: LSA Associates, Inc. (November 2015).

As shown in Table 5..A, construction emission estimates would not exceed the thresholds established by the BAAQMD for exhaust particulate emissions; however, in order to reduce fugitive dust emissions to a less than significant level, Best Management Practices must be implemented. Mitigation Measure 5.A would require implementation of the BAAQMD's Basic Construction Mitigation Measures and would reduce impacts to less than significant.

IMPACT 5.A: Fugitive dust emissions generated during construction of proposed improvements could contribute to a violation of air quality standards or contribute substantially to an existing or projected air quality violation.¹⁷

Mitigation Measure 5.A: Marin County and the project contractor shall follow Basic Construction Mitigation Measures as recommended by the BAAQMD, including:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes. Clear signage on this measure shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- Post a publicly visible sign with the telephone number and person to contact at Marin County Parks regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

According to the BAAQMD, implementation of this measure would reduce fugitive particulate matter emissions to a less than significant level.

Monitoring Measure 5.A: During routine field inspections, County staff shall verify that the applicant and contractors are implementing the applicable BAAQMD basic control measures throughout all phases of construction.

Operational Emissions – Regional Emissions Analysis: Long-term air emission impacts are associated with stationary sources and mobile sources. Stationary source emissions result from the

¹⁷ Table A provides the results for *exhaust* particulate emissions. BAAQMD states that basic control measures must be implemented to reduce *fugitive* emissions to a less than significant level.

consumption of natural gas and electricity. Mobile source emissions result from vehicle trips and result in air pollutant emissions affecting the entire air basin. Implementation of the Master Plan would generate 38 vehicle trips per week day and 47 vehicle trips per weekend day. Air emissions associated with these trips was calculated using CalEEMod as shown in Table 5.B. As shown in Table 5.B emissions associated with implementation of the Master Plan would be minimal and would not exceed the pollutant thresholds established by the BAAQMD. Therefore, the Master Plan would not be a source of stationary source emissions and operation of the projects proposed in the Master Plan would not be expected to result in a violation of air quality standards. No mitigation is required.

Table 5.B: Operational Emissions Estimates

Operational Emissions	ROG	NO _x	CO	Exhaust PM _{2.5}	Exhaust PM ₁₀
Average Daily Emissions (pounds/day)	0.62	0.78	3.96	0.01	0.01
BAAQMD Thresholds (pounds/day)	54.0	54.0	NA	54.0	82.0
Exceed Threshold?	No	No	NA	No	No
Annual Emissions (tons/year)	0.10	0.13	0.59	2.0400e-003	2.1600e-003
BAAQMD Thresholds (tons/year)	10	10	NA	10	10
Exceed Threshold?	No	No	NA	No	No

Source: LSA Associates, Inc. (November 2015).

b) Expose sensitive receptors to pollutants, such as noxious fumes or fugitive dust?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 13)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sensitive receptors located near the park include single-family and multi-family residences. As described above, implementation of the projects proposed in the Master Plan is not expected to result in a substantial increase in vehicle trips to Stafford Lake Park. Total vehicle emissions associated with the Master Plan would be similar to existing conditions; and implementation of the Master Plan would not result in exposure of sensitive receptors to substantial pollutant concentrations.

Construction of the projects associated with implementation of the Master Plan may expose surrounding sensitive receptors to airborne particulates and fugitive dust as well as a small quantity of construction equipment pollutants (i.e., diesel-fueled vehicles and equipment). As shown in Table A, exhaust emissions are expected to be below pollutant threshold criteria given the limited extent and nature of these activities and would be of short duration. In addition, construction contractors would be required to implement measures for dust control and emission control as required by the BAAQMD (Mitigation Measure 5.A) to reduce *fugitive* emissions to a less than significant level. Therefore, sensitive receptors are not expected to be exposed to substantial pollutant concentrations during construction. With implementation of Mitigation Measure 5.A, this impact would be less than significant.

IMPACT 5.B: Project construction could expose surrounding sensitive receptors to fugitive emissions.

Mitigation Measure 5.B: Implement Mitigation Measure 5.A. Implementation of this mitigation measure would reduce this impact to insignificance.

Monitoring Measure 5.B: Implement Monitoring Measure 5.A.

c) Alter air movement, moisture, or temperature, or cause any change in climate?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

General scientific consensus is that global climate change is occurring, caused in whole or in part by increased emissions of greenhouse gases (GHGs) that keep the Earth's surface warm by trapping heat in the Earth's atmosphere. While many studies show evidence of warming over the last century and predict future global warming, the causes of such warming and its potential effects are far less certain. In its "natural" condition, the greenhouse effect is responsible for maintaining a habitable climate on Earth, but human activity has caused increased concentrations of these gases in the atmosphere, thereby contributing to an increase in global temperatures.

GHGs are present in the atmosphere naturally, are released by natural sources, or formed from secondary reactions taking place in the atmosphere. The six gases that are widely seen as the principal contributors to global climate change are: Carbon dioxide (CO₂), Methane (CH₄), Nitrous oxide (N₂O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur Hexafluoride (SF₆).

According to the Countywide Plan, nearly 3 million tons of carbon dioxide is emitted in Marin County every year. Vehicle traffic accounts for 50 percent of the total emissions, and energy use by buildings (residential, commercial, and industrial combined) accounts for 41 percent.

Project Impacts. As discussed above in Sections 5.a and 5.b, implementation of the Master Plan is expected to result in a minimal increase in visitation and associated vehicle trips to the plan area. Construction of the projects proposed in the Master Plan may result in an increase in airborne particulates and fugitive dust; however these impacts would not be significant with implementation of Mitigation Measure 5.A. Additionally, exhaust emissions associated with the Master Plan are anticipated to be only a small fraction of the total statewide greenhouse gas emissions released annually.

Implementation of the projects proposed in the Master Plan would not generate significant GHG emissions. Therefore, implementation of the Master Plan would not result in alterations to local temperatures and would not result in a significant contribution to changes in the global climate. Additionally, implementation of the Master Plan would not have an effect on air movement or moisture. This impact would be considered less than significant.

IMPACT 5.C: Project construction could expose surrounding sensitive receptors to fugitive dust emissions.

Mitigation Measure 5.C: Implement Mitigation Measure 5.A. Implementation of this mitigation measure would reduce this impact to insignificance.

Monitoring Measure 5.C: Implement Monitoring Measure 5.A.

d) Create objectionable odors?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

During construction, the various diesel powered vehicles and equipment in use could create localized odors. Construction-period odors would be temporary and would not result in permanent impacts to surrounding land uses, including sensitive receptors in the vicinity of Stafford Lake Park. Air pollutant emissions are anticipated to be similar to current conditions and long-term exposure of sensitive receptors to objectionable odors would be considered less than significant. Therefore, no significant impacts related to objectionable odors would result from implementation of the Master Plan. This impact would be less than significant.

F. GREENHOUSE GAS EMISSIONS

Would the proposal:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 13)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Greenhouse gases (GHGs) are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are:

- Carbon Dioxide (CO₂)
- Methane (CH₄)
- Nitrous Oxide (N₂O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur Hexafluoride (SF₆)

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO₂, the most abundant GHG; the definition of GWP for a

particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO₂ over a specified time period. GHG emissions are typically measured in terms of pounds or tons of “CO₂ equivalents” (CO₂e).

The BAAQMD CEQA Guidelines recommend that all GHG emissions from a project be estimated, including a project’s direct and indirect GHG emissions from operations. The BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, BAAQMD recommends that the Lead Agency quantify and disclose GHG emissions that would occur during construction, and make a determination on the significance of these construction generated GHG emission impacts in relation to meeting AB 32 GHG reduction goals.

GHG emissions associated with implementation of the proposed project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust.

Construction Emissions: Construction activities, such as site preparation, excavation and site grading, would require the use of on-site heavy-duty construction vehicles and the use of equipment for hauling materials to and from the construction site. Motor vehicles would also be used to transport the construction crew, all of which would produce combustion emissions from these various sources.

During construction of the projects proposed in the Master Plan, greenhouse gasses would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates greenhouse gases such as CO₂, CH₄, and N₂O. Furthermore, CH₄ is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change. The only greenhouse gas with well-studied emissions characteristics and published emissions factors for construction equipment is CO₂.

As discussed above, the BAAQMD does not have a quantitative threshold of significance for construction-related greenhouse gas emissions. Using CalEEMod, it is estimated that the project would generate approximately 227 metric tons of CO₂e during construction of the project. Implementation of Mitigation Measure 5.A would reduce greenhouse gas emissions by reducing the amount of construction vehicle idling and by requiring the use of properly maintained equipment. Therefore, impacts associated with the release of greenhouse gas emissions would be considered less than significant.

Operational Emissions: Long-term operation of the implemented Master Plan would generate greenhouse gas emissions from mobile sources and indirect emissions from sources associated with energy consumption. Mobile-source emissions of greenhouse gases would include vehicle trips generated by the Master Plan. CalEEMod was used to determine the potential GHG emissions that implementation of the proposed Master Plan would generate. Model output sheets are included in Appendix A.

Table 6.A: Operational Greenhouse Gas Emissions

Emissions Category	CO ₂	CH ₄	N ₂ O	CO ₂ e
Project Emissions ¹	109.49	0.30	1.6800e-003	116.33
BAAQMD Thresholds	NA	NA	NA	1,100
Exceed Threshold?	NA	NA	NA	No

Source: LSA Associates, Inc. (November 2015).

¹Pollutant emissions measured in metric tons/year.

Implementation of the Master Plan would not generate significant GHG emissions. Therefore, implementation of the Master Plan would not result in alterations to local temperatures and would not result in a significant contribution to changes in the global climate. Additionally, the Master Plan would not have an effect on air movement or moisture. This impact would be considered less than significant.

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

As previously discussed, implementation of the Master Plan would not exceed the BAAQMD threshold of significance for greenhouse gas emissions. The BAAQMD approach to developing a threshold of significance for greenhouse gas emissions has been to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide greenhouse gas emissions. The greenhouse gas emissions associated with implementation of the Master Plan are below this threshold, and, therefore, would not conflict with any applicable plan, policy or regulation for the purpose of reducing greenhouse gas emissions.

G. TRANSPORTATION/CIRCULATION

Would the proposal result in:

a) Substantial increase in vehicle trips or traffic congestion such that existing levels of service on affected roadways will deteriorate below acceptable County standards?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 15, 16)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Level of service (LOS) is a qualitative measure that communicates the ability of roadways and intersections to accommodate traffic volume on or through those facilities. LOS grades range from A to F. LOS A represents little or no delay while LOS F indicates that traffic volumes exceed the ability of a facility to process it. The Marin County Congestion Management Program establishes LOS D as the minimum level of service standard for urban and suburban roadways. The City of Novato General Plan states that intersections with traffic signals or all-way stop control should operate at LOS D or better and two-way stop controlled intersections should operate at LOS E or better.

Information presented in the Initial Study/Mitigated Negative Declaration for the Stafford Lake Bike Park (2011) found that the all-way stop controlled intersection of San Marin Drive-Sutro Avenue/Novato Boulevard operated at LOS C before the addition of the Bike Park and that the intersection was anticipated to operate at LOS D after the addition of the Bike Park. This result would be a satisfactory LOS according to the City's criteria.

Additional traffic volume generated by the proposed expansion of Stafford Lake Park was calculated using nationally surveyed rates found in the Institute of Transportation Engineers (ITE) *Trip Generation*, Ninth Edition. Planned improvements related to the Event Meadow, Picnic Playground, Swimming

Lagoon, and miscellaneous amenities would create 8.27 acres of new development within the park. Based on trip generation rates for regional parks, this new development is forecast to result in an average of additional 38 vehicle trips per weekday of which fewer than 2 trips would occur in the AM peak hour or PM peak hour.

Table 7.A: Weekday Project Trip Generation Summary

Land Use (Land Use Code)	Size	Units	Average Daily Traffic	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Trip Rates for Regional Park (417)		Acre	4.57	0.09	0.06	0.15	0.09	0.11	0.20
Trip Generation for Proposed Project	8.27	Acre	38	0.7	0.5	1.2	0.7	0.9	1.6

The increased traffic volume represents less than 1 percent of the capacity of a travel lane and would therefore be less than significant.

b) Traffic hazards related to: 1) safety from design features (e.g. sharp curves or dangerous intersections); 2) barriers to pedestrians or bicyclists; or 3) incompatible uses (e.g. farm equipment)?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 18, 19)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In addition to physical improvements within the park, the Master Plan proposes to establish a new park entrance at the northwest end of the property. This proposed location is near, but to the west of, an existing gated entrance for maintenance equipment. In the vicinity of the proposed entrance, Novato Boulevard is a two lane roadway with a narrow shoulder and no center median.

Speeds along Novato Boulevard could be as high as 55 miles per hour (mph) in the vicinity of the proposed driveway. According to AASHTO *Geometric Design of Highways and Streets* (2011), Stopping Sight Distance for a roadway with a design speed of 55 mph is 495 feet. Caltrans Highway Design Manual, Fifth Edition (2001) (HDM) recommends a stopping sight distance on a 90 kilometer per hour (kph) road (approximately 55 mph) of 160 meters, which is approximately 525 feet. Using the more stringent Caltrans standard, 525 feet would be the minimum sight distance that should be provided at the driveway to ensure that vehicles have sufficient distance to stop for a vehicle passing through the travel lane. Caltrans also suggests corner sight distance at intersections that allows vehicles entering or exiting the roadway to choose an appropriate gap in traffic that would not cause a vehicle on the roadway to alter their travel speed. On a 90 kph road (approximately 55 mph), the suggested corner sight distance is 190 meters, which is approximately 625 feet.

A preliminary assessment of sight distance estimates that approximately 800 feet of sight distance is provided to the east and approximately 1,250 feet of sight distance is provided to the west. These

distances would be sufficient to provide adequate corner sight distance according to Caltrans standards. However, the current entrance is located opposite an existing private driveway on the north side of Novato Boulevard, creating a four-way intersection with left-turn pockets from Novato Boulevard onto the side streets. The westbound left-turn pocket provides 75 feet of storage space for vehicles waiting to enter Stafford Lake Park. Without provision of left-turn pockets, it is still possible for vehicles entering Stafford Lake Park to interfere with vehicles traveling along Novato Boulevard as they wait to turn left. Adoption of Mitigation Measure 7.A will reduce safety hazards from design features.

IMPACT 7.A: Without provision of left-turn pockets, vehicles entering Stafford Lake Park at the new, proposed entry, could interfere with vehicles traveling along Novato Boulevard.

Mitigation Measure 7.A: At the time of construction of the proposed Stafford Lake Park entrance driveway, Marin County shall improve Novato Boulevard to provide a westbound left-turn pocket with at least 75 feet of storage for vehicles waiting to enter Stafford Lake Park. Vegetation at the proposed entrance shall be maintained to preserve at least 625 feet of sight distance from the park exit. With implementation of this mitigation measure, this impact would be reduced to a level of insignificance.

Monitoring Measure 7.A: Prior to construction of the Stafford Lake Park entrance driveway, Marin County Parks staff shall verify that the westbound left-turn pocket has been incorporated into construction documents.

c) Inadequate emergency access or access to nearby uses?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Implementation of the proposed Master Plan would not result in inadequate emergency access or access to nearby uses. The Master Plan proposes to construct a second park entrance/exit at the northwest corner of Stafford Lake Park and an exit-only driveway at the northeastern corner of the park. These additional access locations would improve emergency access. During construction of the second park entrance/exit, the current entrance/exit would remain open for emergency vehicle access. The Master Plan would not result in a significant impact related to this issue.

d) Insufficient parking capacity on-site or off-site?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

According to the Master Plan, parking capacity within the existing park is sufficient to accommodate typical demand, as well as parking demand during special events held at the park. The Master Plan would provide additional parking spaces to serve the new amenities in the Event Meadow, Picnic Playground, and Swimming Lagoon areas. In addition, the Master Plan includes plans for providing overflow parking within the open meadow during periods of high parking demand coinciding with special events. Therefore, the Master Plan would include sufficient parking to accommodate typical demand and improved parking capacity to accommodate special event parking demand. This impact would be less than significant.

e) Substantial impacts upon existing transportation systems, including rail, waterborne or air traffic systems?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The Master Plan would not impact existing transportation systems. Implementation of the Master Plan is expected to generate additional vehicle travel demand of less than two trips in the AM peak hour and less than two trips in the PM peak hour. The park is not located near existing transportation systems, including rail, waterborne, or air traffic systems. Therefore, the Master Plan would not result in a significant impact related to this issue.

H. BIOLOGICAL RESOURCES

Would the proposal result in:

a) Reduction in the number of endangered, threatened or rare species, or substantial alteration of their habitats including, but not necessarily limited to: 1) plants; 2) fish; 3) insects; 4) animals; and 5) birds listed as special-status species by State or Federal Resource Agencies?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 20)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

As outlined in the Existing Setting section, seven plant communities occur within Stafford Lake Park: non-native grassland, brome/fescue native grassland, purple needlegrass native grassland, seasonal wetland, watercourse, riparian woodland, and Oak Woodland (Figure 4A/B and 5A/B). One special-status plant species, fragrant fritillary (*Fritillaria liliacea*) is known to occur at Stafford Lake Park and other special-status plant species could occur within the woodland and grassland areas. The special-status plant and animal species with the potential to occur in the Park are identified in Tables 8.A and 8.B.

Table 8.A: Special-status Plant Species Potentially Occurring at Stafford Lake Park

Scientific name English name	Status* (USFWS/ CDFG/RPR)	Habitat affinities and blooming period/life form	Potential for occurrence
<i>Allium peninsulare</i> var. franciscanum Franciscan onion	-/-/1B	Grassland, often serpentine May – June	Potentially present. Grassland habitat present.
<i>Alopecurus aequalis</i> var. sonomensis Sonoma alopecurus	FE/-/1B	Freshwater marshes, wet grassland.	Potentially present. Potentially occurs in seasonal wetland.
<i>Amorpha californica</i> var. <i>napensis</i> Napa false indigo	-/-/1B	Deciduous and broad-leaf woodland; woodland/grassland edge. April	Potentially present. Woodland habitat present.
<i>Amsinckia lunaris</i> Bent-flowered fiddleneck	-/-/1B	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. March-June	Potentially present. Habitat occurs in park.
<i>Arctostaphylos virgata</i> Marin manzanita	-/-/1B	Broadleaf and coniferous forest on sandstone, granite, or serpentine soils.	None to low. Occurs to the south and west of the park.
<i>Astragalus tener</i> var. tener Alkali milk-vetch	-/-/1B	Alkali playa, grassland, vernal pools. March - May	None to low. Not known from Marin County. Seasonal wetlands not alkaline.
<i>California macrophylla</i> Round-leaved filaree	-/-/1B	Heavy clay soils with sparse grassland March – June	None to Low. Known from Petaluma area from historic collection. Heavy clay habitat with sparse cover absent.
<i>Delphinium luteum</i> Yellow larkspur	-/-/1B	Cismontane woodland, coastal prairie, coastal scrub. March-May	Potentially present. Habitat occurs in grassland and coyote brush scrub.
<i>Dirca occidentalis</i> Western leatherwood	-/-/1B	Woodland and scrub	Potentially present. Habitat occurs in woodland and scrub in park.
<i>Fritillaria liliacea</i> Fragrant fritillary	-/-/1B	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland often on serpentine or clay soils. February-April	Present. Two of 3 stands mapped and other stands could occur in park.
<i>Helianthella castanea</i> Diablo helianthella	-/-/1B	Broad-leaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. March-June	Potentially present. Grassland/woodland and grassland/scrub- chaparral habitat occurs in park.
<i>Hemizonia congesta</i> ssp. <i>congesta</i> Seaside tarplant	-/-/1B	Valley and foothill grassland, sometimes along roadsides. April-November	Unlikely. Potential habitat occurs in grassland. Not observed during surveys.
<i>Holocarpha macradenia</i>	FT/CE/1B	Coastal prairie, coastal scrub,	None to Low. Potential

Scientific name English name	Status* (USFWS/ CDFG/RPR)	Habitat affinities and blooming period/life form	Potential for occurrence
Santa Cruz tarplant		valley and foothill grassland in light, sandy soil or sandy clay. June-October	habitat occurs in grassland; known Marin County occurrence is extirpated. Not observed during surveys.
Horkelia tenuiloba Thin-lobed horkelia	-/-1B	Broadleaved forest, chaparral, grassland	Unlikely. Known from central Marin and not near the park.
Kopsiopsis hookeri Small groundcone	-/-1B	Parasitic on ericaceous plants such as manzanita and madrone	Potentially present. Potentially occurs on madrone in the park.
Lasthenia congesta Contra Costa goldfields	FE/-1B	Vernal pools, swales, wet grassland.	Potentially present. Seasonal wetland habitat occurs in park.
Lilium pardalinum ssp. pitkinense Pitkin Marsh lily	FE/SE/1B	Freshwater marsh, seeps, long-duration seasonal wetland	Unlikely. Only known from Sonoma County.
Microseris paludosa Marsh microseris	-/-1B	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. April-June	Potentially present. Habitat occurs in grassland.
Navarretia leucocephala ssp. bakeri Baker's navarreti	-/-1B	Vernal pools, swales, wet grassland.	Potentially present. Seasonal wetland habitat occurs in park.
Navarretia rosulata Marin County navarretia	-/-1B	Closed-cone coniferous forest and chaparral on serpentinite. May-July	None. No serpentinite in study area.
Pentachaeta bellidiflora White-rayed pentachaeta	FT/CE/1B	Cismontane woodland, valley and foothill grassland on open, dry rocky slopes and grassy areas, often on serpentinite. March-May	Potentially present. Habitat occurs in grassland.
Plagiobothrys glaber Smooth popcorn flower	-/-1B	Vernal pools, swales, wet grassland.	Potentially present. Seasonal wetland habitat occurs in park.
Plagiobothrys mollis var. vestitus Petaluma popcorn flower	-/-1A	Grassland and possibly salt marsh edges. June-July	Potentially present. Habitat occurs in grassland areas.
Pleuropogon hooverianus Hoover's semaphore grass	-/ST/1B	Wet grassy, usually shady areas, freshwater marsh, often forested.	Unlikely. Wet areas are usually in full sun.
Quercus parvula var. tamalpaisensis Tamalpais oak	-/-1B	Coast live oak - madrone woodland, Douglas-fir woodland	Unlikely. Not known from this portion of Marin County.
Rhynchospora californica California beaked-rush	-/-1B	Bogs, fens, marshes, wet meadows	Potentially occurs. Potentially occurs in seasonal wetlands.
Sidalcea rhizomata ssp.	-/-1B	Freshwater marshes	Potentially occurs.

Scientific name English name	Status* (USFWS/ CDFG/RPR)	Habitat affinities and blooming period/life form	Potential for occurrence
rhizomata Pt. Reyes checkerbloom			Potentially occurs in seasonal wetlands.
Stebbinsoseris decipiens Santa Cruz microseris	-/-1B	Broad-leaved upland forest, closed- cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland in open areas, sometimes on serpentine. April-May	None to low. Usually occurs on immediate coast.
Trifolium amoenum Showy Ranunculus clover	FE/-1B	Coastal bluff scrub, valley and foothill grassland, sometimes on serpentine. April-June	Potentially present. Habitat within grassland areas.

*Status

U.S. Fish and Wildlife Service (USFWS)

FE = federally listed endangered

FT = federally listed threatened

California Department of Fish and Game (CDFG)

CE = California listed endangered

CR = California listed as rare

CT = California listed as threatened

California Rare Plant Rank (RPR)

List 1B: Plants rare and endangered in California and elsewhere

List 2: Plants rare and endangered in California but more common elsewhere

List 3: Plants about which additional data are needed

Table 8.B: Special-status Animal Species Potentially Occurring at Stafford Lake Park

Scientific name English name	Status* (USFWS/ CDFG)	Habitat affinities	Potential for occurrence
Invertebrates			
<i>Callophrys mossi marinensis</i> Marin elfin butterfly	SA	Stonecrop (<i>Sedum spathulifolium</i>) is larval host plant	None. Larval host plant absent.
<i>Pomatiopsis binneyi</i> Robust walker (snail)	SA	Amphibious habitats, seeps and springs.	Moderate. Potentially occurs in seasonally wet areas.
<i>Syncaris pacifica</i> California freshwater shrimp	FE/SE	Shallow pools, undercut banks, roots and branches.	None. Not known from Novato Creek.
<i>Trachusa gummifera</i> San Francisco Bay Area leaf-cutter bee	SA	Colonial nester in bare ground. Forages for pollen and nectar on native plants.	Not likely. Distribution very limited. Nesting habitat not observed.
<i>Vespericola marinensis</i> Marin hesperian snail	SA	Moist areas including leaf mold, beneath moist leaves, sward fern, cow parsnip	Moderate. Habitat occurs in moist areas of the north facing slope.
Fish			
<i>Lavinia symmetricus</i> ssp. 2 Tomales Roach	-/SSC	Clear streams that are tributary to Tomales Bay	None. Park is not in the Tomales Bay watershed
<i>Oncorhynchus kisutch</i> Coho salmon	FT/-	Cool shaded watercourses with large gravel substrates	None. Not known from Novato Creek
<i>Oncorhynchus mykiss irideus</i> steelhead	FE/SE	Cool shaded watercourses with large gravel substrates	Present. Known from Novato Creek downstream of the dam.
<i>Pogonichthys macrolepidotus</i> Sacramento splittail	-/SSC	Slow-moving reaches of watercourses; submerged vegetation for spawning	None. Permanent, relatively deep slow-flowing water absent.
<i>Spirinchus thaleichthys</i> Longfin smelt	FC/ST	Open water of estuaries in middle or bottom of water column. Can occur in completely freshwater of watercourses	None. Not known from Novato Creek.
Amphibians			
<i>Dicamptodon ensatus</i> Pacific giant salamander	SA	Cool shaded watercourses.	Moderate. Potentially occurs in Novato Creek downstream of the dam.
<i>Rana boylei</i> Foothill yellow-legged frog	-/SSC	Prefers permanent stream pools, and creeks with emergent and/or riparian vegetation and a gravelly bottom.	Unlikely. Although habitat occurs in Novato Creek, no known records in the vicinity.
<i>Rana draytonii</i> California red-legged frog	FT/SSC	Prefers semi-permanent and permanent stream pools, ponds, and creeks with emergent and/or riparian vegetation. Occupies upland habitat especially during the wet winter months.	Unlikely. Although habitat occurs, no known records in the vicinity of the park.
Reptiles			
<i>Emys marmorata</i> Western pond turtle	-/SSC	Ponds, lakes, streams, can use intermittent watercourses.	Likely. Habitat present in Novato Creek and Stafford Lake.

Birds			
<i>Ardea alba</i> Great egret <i>Ardea herodias</i> Great blue heron	-/ ¹⁸	Nest communally in grove of tall trees	Moderate. Great blue heron rookery known from island in Stafford Lake and could potentially occur within park.
<i>Athene cunicularia</i> Burrowing owl	-/SSC	Open, dry grasslands, deserts, prairies, farmland and scrublands with abundant active and abandoned mammal burrows. Prefers short grasses and moderate inclined hills.	Low. Suitable habitat present, but climate not favorable in nesting season.
<i>Circus cyaneus</i> Northern harrier	-/SSC	Nests and forages in grasslands and open marshland, both salt and fresh. Nests consist of a thin to thick layer of small sticks and reeds, lined with grasses.	Moderate. Suitable grassland habitat present for nests.
<i>Cypseloides niger</i> Black swift	-/SSC	Nests behind waterfalls.	None. Waterfall nesting habitat absent.
<i>Elanus leucurus</i> White-tailed kite	-/FP	Inhabits low rolling foothills and valley margins with scattered oaks and river bottom-lands or marshes adjacent to deciduous woodlands. Prefers open grasslands, meadows and marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Likely. Suitable habitat present for nesting; have been observed in the area.
<i>Geothlypis trichas sinuosa</i> Saltmarsh common yellowthroat	-/SSC	Nests in the lower portion of dense vegetation adjacent to waterbodies.	Moderate. Could potentially nest beside Terwilliger Pond.
<i>Pandion haliaetus</i> Osprey	SA	Nests in tall trees.	Low. Habitat present but not known from Stafford Lake.
<i>Riparia riparia</i> Bank swallow	-/ST	Steep, freshly eroding banks and cliff-faces with sandy soil	None. Steep bank habitat absent.
<i>Setohaga petechial</i> Yellow warbler	-/SC	Riparian habitats including willow and cottonwood thickets	Moderate. Habitat occurs in willows along Novato Creek
<i>Strix occidentalis caurina</i> Northern spotted owl	-/FT	Coniferous forest, dense bay forests with clear areas beneath canopy in protected canyon	Low. Coast redwood stands too small, bay forest not suitable.
Mammals			
<i>Antrozous pallidus</i> Pallid bat	-/SSC	Day roosts include rock outcrops, mines, caves, buildings, bridges, and hollows and cavities in a wide variety of tree species. High reliance on oak woodland habitat in many portions of its range in California. Forages on larger prey taken on the ground or in the air,	Moderate. Suitable habitat present in large trees.

¹⁸ Herons and egrets are common but their rookeries are the sensitive.

		usually within 5 miles of the day roost.	
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	-/SSC	Roosting sites include caves, mine tunnels, abandoned buildings, and large tree hollows. Forages in a variety of plant communities including coastal conifer and broad-leaf forests, oak and conifer woodlands, arid grasslands, and deserts.	Moderate. Suitable habitat present in large trees.
<i>Lasiurus blossevillii</i> Western red bat	SA	Roosts in trees that are protected from above and open below, prefers habitat edges	Moderate. Habitat occurs at the park.
<i>Lasiurus cinereus</i> Hoary bat	SA	Roosts in dense foliage of medium to large trees.	Moderate. Habitat occurs at the park.
<i>Taxidea taxus</i> American badger	-/SSC	Inhabits open grasslands, savannas and mountain meadows near timberline. Requires abundant burrowing mammals, their principal food source, and loose, friable soils.	Present. Observed in 2011.

*Status

U.S. Fish and Wildlife Service (USFWS)

FE = federally listed endangered

FT = federally listed threatened

FC = federally candidate for listing

California Department of Fish and Wildlife (CDFW)

CE = California listed endangered

CT = California listed as threatened

SSC = Species of special concern

FP = California fully protected

SA = Special Animal¹⁹

¹⁹ California Department of Fish and Wildlife, Natural Diversity Database. October 2015. Special Animals List. Periodic publication. 51 pp.

Three stands of fragrant fritillary occur at Stafford Lake Park, two of which are mapped²⁰ (Figure 4B). Special-status species surveys were conducted in the grassland areas in the fall of 2014 (October 10, 14, 15, 17, and 28). Spring surveys in the woodland and grassland areas would need to be conducted to determine whether other stands of fragrant fritillary and/or other special-status species occur at Stafford Lake Park.

Much of the grassland in the northern half of Stafford Lake Park has been previously disturbed by mowing and/or cultivation for hay. Special-status plant species are not likely to occur in the cultivated areas due to ground disturbance from plowing. However, the presence of such species cannot be ruled out for some of the mowed areas, such as the proposed Event Meadow. The swimming lagoon of the Back Meadow is proposed for the hay field and is not likely to affect special-status plant and animal species because of the continual disturbance associated with cultivating the hay and ground disturbance associated with plowing.

Several special-status species of bats may roost in the foliage of the canopy, beneath bark, and in the hollowed portion of large branches and the trunks of trees. Bats roosting in trees could be harmed during tree removal.

Killing of eggs, nestlings and/or adult birds is a violation of the Federal Migratory Bird Treaty Act and California State Fish and Game Codes §3503, §3503.5, and §3513. Implementation of the Master Plan could result in impacts to nesting birds due to direct and indirect effects of construction.

IMPACT 8.A.1: Implementation of the Master Plan could potentially affect special status plant and animal species if they are present in the area of proposed improvements.

Mitigation Measure 8.A.1: Prior to construction of specific improvements, special-status species surveys for those species identified in Tables A and C shall be conducted. If any special-status plant or animal species occurs within an area proposed for development, the improvements shall be designed to avoid those species and their habitat, to the extent feasible. A buffer of not less than 50 feet, measured from the edge of the area occupied by special-status plants, shall be established to avoid special-status plant species.

The avoidance for animal special-status species will be species-specific and adhere to the following guidelines:

- Invertebrate special-status species are more localized; therefore, a permanent buffer of 50 feet shall be established for invertebrate species.
- A temporary buffer shall be established for roosting bats during construction until they find a different roost location.
- Maternal badger dens, raptor nests, and heron rookeries may be very sensitive to the presence of people and larger buffers are appropriate for these species. The buffer for a badger maternity den shall be 100 feet or more depending on its location and the type of park activity. The buffers for raptor nests shall be 200 feet and the buffer for a heron rookery shall be 200 feet or greater depending on the sensitivity of the herons to human activity.

²⁰ A third occurrence of fragrant fritillary at Stafford Lake Park was mentioned in a discussion with park rangers, but there are no maps of its location.

No ground disturbance, material storage, staging, parking, or entrance by workers shall be allowed in buffer areas. If a qualified biologist can demonstrate that a buffer is unnecessary, then buffers will not be required. Such cases would include plant populations that are isolated from the development area or separated from development by a natural barrier. The species to be covered by the special-status species survey are listed in Tables 8.A and 8.B. With implementation of this mitigation measure, this impact would be reduced to a level of insignificance.

Monitoring Measure 8.A.1: Marin County Parks staff shall review the report showing the results of the surveys for special-status plant species and note any additional occurrences of special-status species that occur within the Park. The County shall ensure that plans for specific improvements avoid the special-status species with an appropriate buffer if they occur within an area of the park proposed for improvements. Buffers shall be shown on all construction plans.

IMPACT 8.A.2: Construction during the implementation of the proposed Master Plan could potentially affect special-status species of bats roosting in trees at Stafford Lake Park.

Mitigation Measure 8.A.2: Prior to any tree removal required for proposed improvements, a survey for special-status species of bats and maternity roosts shall be conducted by a qualified biologist.²¹ The bat survey shall address those trees proposed for removal and shall make recommendations regarding their removal (see below).

All trees that potentially provide roosting habitat for foliage roosting bats shall be pruned or removed in the following manner to avoid mortality to bats: tree or branches shall be pruned and left overnight in place on the ground before being transported away from the site or chipped the following day. Leaving the branches and trees overnight will allow foliage roosting bats to move from the cut branches or trees during the evening and therefore avoid being killed in a chipper or transported away from their habitat before having a chance to find a new roost tree. Hollowed portions of the trunk shall be examined for maternity colonies from March through September and for hibernating bats from November through February. Bat colonies in hollowed trees shall be monitored. Trees that support maternity roosts shall only be trimmed or removed only after the bat colony has dispersed (e.g., when the maternity roost disbands or after hibernation ends). . With implementation of this mitigation measure, this impact would be reduced to a level of insignificance

Monitoring Measure 8.A.2: Marin County Parks staff shall review the results of the bat surveys and ensure that the recommendations of the survey are implemented.

IMPACT 8.A.3: Implementation of the Master Plan could potentially impact nesting birds at Stafford Lake Park. If construction occurs within the nesting period of birds (February 15 through August 31), nests could be destroyed, if within the construction area, or abandoned, or if immediately adjacent to the construction area.

Mitigation Measure 8.A.3: Construction shall be conducted during the non-breeding season (i.e., before the beginning of March or after the end of July) to avoid direct impacts to breeding birds and eggs or nestlings. The following measures shall be implemented if construction activities take place during the breeding season, defined as the period from February 15 to August 1.

²¹ Qualified biologist is defined as a professional biologist with a degree in wildlife biology or biological sciences and who has at least 1 year of experience conducting surveys for bats and bat roosts in the region.

A qualified biologist²² shall conduct a preconstruction survey of the area proposed for improvements including a suitable buffer area to determine if active bird nests are present. The surveys shall be conducted no more than 14 days prior to the initiation of any project activities (including tree trimming, grading, and excavation). If there is a lapse of activity greater than 14 days at each construction site, then a survey for nesting birds shall be conducted again to ensure that birds have not nested during the break in construction.

If nesting birds are identified, a buffer of 50 feet, centered on the nest (100 feet diameter), shall be established around active nests of songbirds. A buffer of 200 feet centered on the nest or nest tree for raptors shall be established. No ground disturbance, material storage, staging, parking, or entrance by workers shall be allowed in the buffer areas. The buffer shall be maintained until the young have fledged and are foraging independently as determined by a qualified biologist through periodic monitoring of the nests. With implementation of this mitigation measure, this impact would be reduced to a level of insignificance.

Monitoring Measure 8.A.3: Marin County Parks staff shall verify that construction activities will not take place during the nesting season; or County staff shall review a report submitted by a qualified biologist verifying that nesting birds would not be adversely affected by the construction because no active nests are present in, or adjacent to, the development area; or that the appropriate buffers have been established around active nests and are being monitored by a qualified biologist.

b) Substantial change in the diversity, number, or habitat of any species of plants or animals currently present or likely to occur at any time throughout the year?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s):1, 3, 4)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Implementation of the Master Plan would include construction of various recreation and circulation improvements including new paved roads, gatehouse, parking areas, playground, swimming lagoon, and others. As a programmatic document, the Master Plan provides the general site for proposed improvements, but not the precise locations. These improvements will most likely be sited within the upland edge of riparian and/or wetland buffers, and therefore, would not impact riparian/wetland habitats. If improvements are located too close to these sensitive habitats, construction could result in potential impacts and mitigation would be required, as described below. Potential impacts to the diversity, number, and/or habitat of species that occur in the Park are described below.

Wetlands. The Fishing Deck and Riparian Boardwalk, depending on the design, could result in fill of waters of the United States. The Bird Blind, Lake Pavilion, and the Bird Viewing Vista Point could potentially result in the fill of jurisdictional wetland depending on the precise location of these features.

The Stafford Lake Master Plan document does not specify precise locations or construction techniques thereby limiting the analysis of potential impacts to a qualitative assessment. Nevertheless, Stafford Lake Park is of sufficient size to completely avoid some of the potential wetland impacts.

²² Qualified biologist is defined as a professional biologist with a degree in wildlife biology or biological sciences and who has at least 1 year of experience conducting bird and nest surveys in the region.

IMPACT 8.B.1: Implementation of the Master Plan could result in wetland fill.

Mitigation Measure 8.B.1: Prior to construction, a formal wetland delineation shall be prepared for all areas of the park where development is proposed. The jurisdictional determination shall be used to determine the extent of fill to waters of the United States including wetlands, waters of the State, and waters under CDFW 1602 jurisdiction. Marin County Parks shall ensure that all jurisdictional areas are avoided to the maximum extent feasible. Jurisdictional areas to be filled or avoided shall be clearly shown on construction plans for specific improvements.

An application for fill shall be completed and submitted to the Corps and RWQCB for issuance of the appropriate permits (Section 401 and 404, Clean Water Act) prior to construction of the Fishing Deck and Riparian Boardwalk. The application shall also include all other structures such as the Bird Blind, Lake Pavilion, and Bird Viewing Vista Area, if they are located within jurisdictional areas. If wetland areas cannot be avoided, mitigation shall consist of creating wetland acreage, at a 2:1 ratio, at the edge of existing wetlands on-site. A wetland mitigation plan shall be developed for any required mitigation. The plan shall include performance standards for the mitigation wetlands and shall detail the contents of the required as-built report. The site shall be monitored for 5 years. Additional monitoring may be required if performance standards are not met in the 5 year monitoring period. The results of the monitoring shall be reported in annual reports submitted to the responsible regulatory agencies.

A Streambed Alteration Agreement application shall be submitted to the CDFW for any modification of the bed and/or bank of Stafford Lake, Terwilliger Pond, and Novato Creek, including the Fishing Deck and Riparian Boardwalk and potentially the Bird Blind, Lake Pavilion, and Bird Viewing Vista Area. Any loss of riparian vegetation shall be replaced on-site at a 1:1 ratio. The success of the riparian plantings shall be defined in a riparian revegetation plan and monitored for 5 years. Results of the monitoring will be reported annually or as required to the permitting agency.

With implementation of this mitigation measure, this impact would be reduced to a level of insignificance

Monitoring Measure 8.B.1: Marin County Parks staff shall ensure that work on any improvements does not start until the receipt of the appropriate agency permits.

The wetland mitigation and riparian revegetation plans shall be reviewed by Marin County Parks staff. Marin County Parks staff shall review each of five annual reports for wetland mitigation and riparian revegetation describing the success of the mitigation effort as judged by the performance standards. Marin County Parks staff shall verify the attainment of the performance standards in the final annual report.

Riparian Areas. The Informal Camping area and the Secluded Garden Space of the Event Meadow; the Swimming Lagoon, associated parking, Group Picnic Area, and one of the Nature Play Pods of the Back Meadow; the improvements to the Group Picnic Area of the Rustic Meadow; and the Bike-in Camping potentially occur within the Stream Conservation Area. The Marin Countywide Plan²³ has established stream conservation areas beside watercourses that consist of development setback on each side of the top of bank that is the greater of either: (a) 50 feet landward from the outer edge of woody riparian vegetation associated with the stream; or (b) 100 feet landward from the top of bank for permanent and intermittent streams. For ephemeral streams that flow only after rainfall events, the

²³ Marin County Community Development Agency, 2007. Marin Countywide Plan. 6 November.

buffer would be 20 feet. The buffer increases to 100 feet if there is a special-status species or riparian vegetation for more than 100 feet along the ephemeral watercourse. Stream Conservation Areas are mapped on Figures 5a and 5b. Even if park improvements avoid the Stream Conservation Area, the wildlife of the riparian area may be impacted due to a large amount of adjacent human activity. These effects would be from noise, lighting at night, and the very presence of people that deters wildlife from an area. These effects may include altering wildlife behavior to the extent that common wildlife and some special-status wildlife, such as yellow warbler (*Setophaga petechia*) may leave the affected portion of the riparian vegetation.

IMPACT 8.B.2: Construction of the Creek Boardwalk would result in the removal of riparian vegetation.

Mitigation Measure 8.B.2: Native trees removed for the installation of the Creek Boardwalk shall be replaced at a 3:1 ratio in areas suitable for planting willow trees. These trees could be planted in the Stream Conservation Area as described above. A planting plan shall be prepared for these trees as described in Mitigation Measure 8.B.3. With implementation of this mitigation measure, this impact would be reduced to a level of insignificance

Monitoring Measure 8.B.2: Marin County Parks staff shall review planting plans that address replacing trees lost due to the installation of the Creek Boardwalk. Marin County Parks staff shall review the annual reports to ensure progress toward the success of the plantings. Marin County Parks staff shall verify the attainment of performance standards as reported in the final annual report.

IMPACT 8.B.3: Riparian buffer areas/Stream Conservation Areas may be affected by the Master Plan improvements.

Mitigation Measure 8.B.3: Park improvements shall avoid the Stream Conservation Area. If the Stream Conservation Area cannot be avoided, and the removal of riparian vegetation is required, then an area equal to the amount (square feet) of riparian vegetation removal shall be planted with willow (preferred) or other suitable trees (see below) along an unaffected edge of the Stream Conservation Area. If there is insufficient area within the stream conservation areas at Stafford Lake to complete the mitigation, then stream conservation areas on other suitable Marin County open space or park parcels can be planted in order to complete the mitigation requirement. In addition, unforested portions of the Stream Conservation Area shall be planted with native willow trees (if area suitable) or native tree species (i.e., coast live oak, valley oak, California bay, California buckeye, and/or big-leaf maple) between park improvements and the edge of the riparian canopy to increase the effectiveness of the Stream Conservation Area buffer.

A planting plan shall be developed for installing trees within the Stream Conservation Area between the existing riparian canopy and the proposed park improvements. The planting plan shall show the locations of the tree planting and shall provide techniques for tree planting. The plan shall indicate performance standards and the contents of an as-built report and 5 subsequent annual reports. Monitoring the success of the plantings shall occur for at least 5 years. With implementation of this mitigation measure, this impact would be reduced to a level of insignificance

Monitoring Measure 8.B.3: Marin County Parks staff shall verify that the improvements avoid the Stream Conservation Area prior to the initiation of construction activities. Marin County Parks staff shall review planting plans for adding trees to the Stream Conservation Area between the existing riparian canopy and proposed park improvements prior to construction. Marin County Parks staff shall review each of the five annual reports to ensure progress toward the final performance standards for the plantings.

Native Grassland. The Zipline would impact a very diverse and locally sensitive Brome/Fescue Native Grassland dominated by fescues, California brome, and purple needlegrass. Construction of this facility in the Brome/Fescue dominated native grassland could result in a loss of acreage and diversity of this grassland due to its unusual grouping of species and limited occurrence from only one slope above Stafford Lake. The native grassland in other areas of the park is dominated by purple needlegrass, a relatively common, albeit sensitive, dominant plant of the purple needlegrass native grassland plant community.

Trail improvements and construction of the Star Deck and Alpine Slide could potentially affect Purple Needlegrass Native Grassland. The precise location of the Zipline, trails, Alpine Slide, and Star Deck is not indicated on the Master Plan figures and neither are the methods of construction discussed. Nevertheless, the proximity to native grassland and the need for heavy equipment for construction purposes, as well as ground disturbance, indicates that impacts would likely occur.

IMPACT 8.B.4: The acreage of native grassland will be reduced substantially due to construction of the improvements proposed in the Master Plan.

Mitigation Measure 8.B.4: Recreational facilities such as the Zipline shall not be constructed where it would lead to the reduction in acreage or diversity of the Brome/Fescue Native Grassland. Rather, recreational facilities shall be constructed within less sensitive habitats such as the adjacent woodland and non-native grassland. Sensitive habitats such as the Brome/Fescue Native Grassland shall be clearly delimited during construction activities establishing an exclusion zone, which shall be avoided by construction equipment, personnel, material storage, and staging activities.

Impacts to other native grassland (by trails, Alpine Slide, Star Deck, or any other park improvements) dominated by brome/fescue native grassland or purple needlegrass grassland shall be mitigated by converting non-native grassland to the appropriate native grassland at a 1:1 ratio. A revegetation plan shall be developed that will identify areas for re-establishing the native grassland, techniques used to reestablish the grassland, performance standards, monitoring techniques, and annual reports indicating the cover of the mitigation grassland, and the success within a 5-year monitoring period. The performance standards shall include replacing the grassland lost with native grassland of the same species composition and cover of grassland lost to park improvements. Marin County Parks shall also develop and implement a management and monitoring plan for the preservation and protection of sensitive grasslands (i.e., Brome/Fescue and Purple Needlegrass Native Grasslands) in the Park.

With implementation of this mitigation measure, this impact would be reduced to a level of insignificance

Monitoring Measure 8.B.4: Marin County Parks staff shall verify that the Brome/Fescue Native Grassland is avoided to the maximum extent possible during Master Plan implementation and that the preserved area is not adversely impacted by implementation of the Master Plan. Marin County Parks staff shall review revegetation plans for Brome/Fescue and Purple Needlegrass Native Grasslands. Marin County Parks staff shall review annual reports to ensure the success of the revegetation efforts.

Oak Woodland. Operations within the Zipline and tree camping areas are expected to include maintenance activities around poles and cables, an increase in human activity around the Zipline and Alpine Slide, and increased pedestrian traffic on trails to and from the facilities. Along portions of the Zipline, numerous people would potentially be moving over the woodland canopy during days of operation, including those times of year when birds may be nesting in and around the zipline facility. Nesting in the area could decrease (especially among those species sensitive to human presence) due

to increased human activity, including human noise (such as screaming), from operation of the Zipline and Alpine Slide.

Although increased human activity could result in a reduction in wildlife use of the Oak Woodland during operation of the facilities, this type of habitat is relatively abundant in the surrounding area. Common wildlife species are most likely to occur on the project site and these species are often tolerant of human disturbance or can become habituated to the activity and would therefore continue to use the area. Therefore, the reduction of wildlife values within Oak Woodland habitat and the associated potential reduction in the numbers of common wildlife species that occur within the Oak Woodland are considered less than significant.

The Zipline is proposed for an area dominated by Oak Woodland. Construction and operation of the Zipline would affect Oak Woodland and its habitat values. Impacts are likely to occur from siting and building the towers supporting the Zipline. Presumably the Zipline would remain above the tree canopy although an unknown amount of trimming within the canopy may be required to access the proposed zipline.

IMPACT 8.B.5: Oak Woodland acreage and habitat values would be affected by proposed construction and operation of the Zipline.

Mitigation Measure 8.B.5: The Zipline shall be sited to minimize damage to the trees of the Oak Woodland. The Zipline shall be located above the tree canopy to reduce and minimize impacts to the trees of the Oak Woodland. Any tree in which at least 1/3 of its canopy or root system is damaged from the Zipline construction or operation shall be mitigated through replacement of the same species on a 3:1 basis. Trees shall be planted at the interface of Oak Woodland and non-native grassland at the park edge near the golf course. Any tree in the Oak Woodland removed by the Zipline or other recreational facility shall be replaced as described above.

A revegetation plan shall be developed for the trees that will replace those lost from the construction and operation of the facilities (e.g., Zipline). The revegetation plan shall map the tree replacement area along the eastern border of the Park at the golf course, describe techniques used to plant the replacement trees, performance standards, monitoring techniques, and the contents of reports produced during the 5 year monitoring period. The performance standards shall include survival criteria for the replacement trees. At least two trees should survive at the end of five years for every tree affected or removed by the proposed Master Plan improvements. With implementation of this mitigation measure, this impact would be reduced to a level of insignificance.

Monitoring Measure 8.B.5: Marin County Parks staff shall ensure that the management and monitoring plan has been completed for the Oak Woodland prior to initiating construction of proposed improvements under the Master Plan. Management plan recommendations shall be implemented during construction of proposed improvement that may affect Oak Woodland (e.g., Zipline). Marin County Parks staff shall review revegetation plans for the mitigation Oak Woodland plantings and the five annual reports that discuss the success of the planting.

Trees. Improvements to the Picnic Playground area are likely to result in the removal of protected trees, as defined by the Marin County Tree Ordinance, due to placement of proposed play structures and parking lots. If the Zipline and associated platforms are installed on the trees in the Oak Woodland such installation could damage protected trees.

Per the Marin County Tree Ordinance, trees on County property are not protected under the ordinance if they are removed during routine use or management of the property. Therefore, tree removal associated with implementation of the Master Plan would be a less than significant impact.

c) Introduction of new species of plants or animals into an area, or improvements or alterations that would result in a barrier to the migration, dispersal, or movement of animals?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 3, 4)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The proposed Master Plan would not result in a barrier to the migration, dispersal or movement of animals because there is space for animal movement through and around proposed improvements.

Construction of proposed improvements could result in the introduction of non-native ornamental plant species, and non-native pathogens, and an increase in invasive species that would colonize areas disturbed by construction. Ornamental landscaping often includes species that are invasive to wildland areas and if these invasive species are used, they could colonize the wildland areas.

Container plants can be contaminated by pathogens that have subsequently colonized wildland areas. At least 14 species of *Phytophthora* pathogens are known to occur in California. These species can infest container plants in nurseries that practice poor sanitation.

Areas disturbed by construction could become colonized by invasive species. One invasive species, stinkwort (*Didymopanax graveolens*) already occurs in the drawdown area of Stafford Lake and could colonize bare road cuts and other disturbed areas of exposed soil.

IMPACT 8.C.1: Implementation of the proposed Master Plan could result in the introduction of non-native ornamental plant species and non-native pathogens.

Mitigation Measure 8.C.1: Prohibited ornamental plant species listed in Table 8.C shall not be used in the landscaping of Stafford Lake Park in order to reduce the risk of these species becoming established in the park. With implementation of this mitigation measure, this impact would be reduced to a level of insignificance.

Table 8.C: Prohibited Ornamental Plant Species

Scientific Name	Common Name
<i>Acacia decurrens</i>	Green wattle
<i>Acacia melanoxylon</i>	Black acacia
<i>Ailanthus altissima</i>	Tree-of-heaven
<i>Eucalyptus globulus</i>	Blue-gum
<i>Robinia pseudoacacia</i>	Black locust
<i>Schinus terebinthifolius</i>	Brazilian pepper
<i>Tamarix</i> spp.	Tamarisk
<i>Cotoneaster franchetii</i>	Cotoneaster
<i>Cotoneaster pannosa</i>	Cotoneaster
<i>Crataegus monogyna</i>	Hawthorn
<i>Cytisus multiflorus</i>	Spanish broom
<i>Cytisus scoparius</i>	Scotch broom

Scientific Name	Common Name
<i>Genista monspessulana</i>	French broom
<i>Pyracantha</i> spp.	Pyracantha
<i>Rubus discolor</i>	Himalayan blackberry
<i>Ulex europaea</i>	Gorse
<i>Delairia odorata</i> (= <i>Senecio mikanioides</i>)	Cape ivy (German ivy)
<i>Hedera helix</i>	English ivy
<i>Arctotheca calendula</i>	Capeweed
<i>Cynara cardunculus</i>	Artichoke thistle
<i>Erigeron karvinskianus</i>	Mexican daisy
<i>Euphorbia esula</i>	Leafy spurge
<i>Euphorbia oblongata</i>	Spurge
<i>Cortaderia</i> spp.	Pampas grass
<i>Pennisetum clandestinum</i>	Kikuyu grass
<i>Pennisetum setaceum</i>	Fountain grass

Monitoring Measure 8.C.1: Marin County Parks staff shall review the plant palette proposed for the ornamental plantings at Stafford Lake Park to ensure that no species from Table 8.C are planted at the Park.

IMPACT 8.C.2: The proposed Master Plan could result in the introduction of non-native pathogens into the natural portions of Stafford Lake Park.

Mitigation Measure 8.C.2: Marin County Parks staff shall require the landscape contractor to use only contamination-free nursery material and that plants are purchased from nurseries that use commonly-accepted practices to maintain plants that are free of pathogens especially species of *Phytophthora* (pathogen responsible for sudden oak death). With implementation of this mitigation measure, this impact would be reduced to a level of insignificance.

Monitoring Measure 8.C.2: Marin County Parks staff shall verify that Mitigation Measure 8.C.2 is implemented during development of proposed improvements.

IMPACT 8.C.3: The proposed Master Plan could result in the increase of invasive species that would colonize areas disturbed by construction.

Mitigation Measure 8.C.3: Marin County Parks staff shall develop and implement a plan to monitor and control invasive species that become established due to implementation and operation of the Master Plan. Marin County Parks shall prepare reports indicating the dates of surveys and potential presence of invasive species within a month of completion of the survey. Invasive species shall be treated according to the integrated pest management policy of Marin County Parks. An annual report shall be prepared indicating the date, species name, approximate number of individuals or size of area treated, type of treatment, and success of treatment. If treatments do not occur, the annual report will indicate reasons for not treating in a particular year. With implementation of this mitigation measure, this impact would be reduced to a level of insignificance.

Monitoring Measure 8.C.3: Marin County Parks staff shall review survey reports, treatment reports, and monitoring reports documenting the success of the control efforts. If the control efforts are not successful, the Marin County Parks shall ensure that additional treatments are implemented..

I. ENERGY AND NATURAL RESOURCES

Would the proposal result in:

a) Substantial increase in demand for existing energy sources, or conflict with adopted policies or standards for energy use?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Implementation of the Master Plan would result in the construction of new recreation facilities within the existing park, which would generate new vehicle trips and a corresponding increase in the use of fossil fuels as users would likely drive to access the park. However, the number of trips generated by proposed improvements would be relatively small and would not be significant in relation to the number of existing users who drive to Stafford Lake Park. The nature of proposed improvements (e.g., playground, picnic areas, swimming lagoon) would not require substantial amounts of energy for either construction or maintenance purposes. Therefore, the Master Plan would not conflict with adopted policies or standards for energy use.

b) Use of non-renewable resources in a wasteful and inefficient manner?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 3, 4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Proposed improvements would be required to meet the requirements of the Marin County Green Building Submittal Checklist, California Title 24 and Ordinance 3492 to reduce the amount of energy consumed. As previously discussed, the nature of proposed improvements would not require substantial amounts of energy for either construction or maintenance purposes. Therefore, the Master Plan would not use non-renewable resources in a wasteful or inefficient manner.

c) Loss of significant mineral resource sites designated in the Countywide Plan from premature development or other land uses which are incompatible with mineral extraction?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 3, 5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The Marin Countywide Plan identifies mineral sites in the Pt. San Pedro area of San Rafael, Nicasio, Mill Valley, and Novato. None of these sites is located near Stafford Lake Park. Therefore, implementation of the Master Plan would not adversely affect designated mineral resource sites or result in development or other land uses that would be incompatible with mineral extraction.

J. HAZARDS

Would the proposal involve:

a) A risk of accidental explosion or release of hazardous substances including, but not necessarily limited to: 1) oil, pesticides; 2) chemicals; or 3) radiation?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Construction and operation of proposed improvements would not require the use of any explosive or hazardous materials. Although small quantities of commercially available hazardous materials could be used during construction activities (e.g., oil, gasoline), these materials would not be used in sufficient quantities to pose a threat to human or environmental health. Such materials would be kept at construction staging areas, and would be secured when not in use. The use and storage of such materials would comply with numerous federal, State, and local laws and regulations governing hazardous materials. The existing park is largely in its natural condition and is unlikely to have any hazardous substances on site. Therefore, implementation of the Master Plan would not create a risk of accidental explosion or release of hazardous substances.

b) Possible interference with an emergency response plan or emergency evacuation plan?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Implementation of the Master Plan would improve an existing recreational facility; it would not interfere with emergency response plans or emergency evacuation plans. Stafford Lake Park is not located along an identified evacuation route and construction of proposed improvements would not obstruct access for emergency vehicles. This impact would be less than significant.

c) The creation of any health hazard or potential health hazard?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

As described above, construction of proposed improvements could include construction activities that employ hazards or the use of hazardous chemicals, such as gasoline, diesel fuel, oils and lubricants, paints and thinners, solvents, and other chemicals. Numerous federal, State, and local laws and regulations ensure the safe transportation, use, storage, and disposal of hazardous materials. Contractors would be required to comply with all hazardous materials laws and regulations for the transport, use, and disposal of hazardous materials. Therefore, the Master Plan would not result in a significant impact related to this issue.

d) Exposure of people to existing sources of potential health hazards?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The park site is not included on any of the environmental databases maintained by the State Water Resources Control Board or the California Department of Toxic Substances Control. The Master Plan proposes improvements within an existing County park that is managed for recreation uses. It is unlikely that future users of the proposed improvements would be exposed to sources of existing or future health hazards as none are known to occur within or in the vicinity of the park. Therefore, the proposed project would not result in exposure to existing or potential sources of health hazards.

e) Increased fire hazard in areas with flammable brush, grass, or trees?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 3, 5, 22, 23)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The California Department of Forestry and Fire Protection (CAL FIRE) designates the project area as lying within a zone of moderate fire hazard (CAL FIRE 2007). In addition, the Marin Countywide Plan indicates that the project site is ranked as a High Fire Risk zone. This rank is based on vegetation, slope, and aspect.

Section 10.08 of the Marin County Municipal Code prohibits fires of any nature, except in permanent fixed barbecues, camp stoves, or fireplaces established by Marin County Parks. It also prohibits firecrackers, skyrockets, other fireworks or explosives, as well as smoking, except in designated areas specified for smoking. Stafford Lake Park includes barbecue facilities for groups of up to 500 people; however, use of these facilities would be restricted per Section 10.08 of the Municipal Code. Rangers patrol the park and are trained in fire-fighting techniques. Parks' radio and repeater system combined with ranger patrols and staff on-call 24 hours per day enable prompt and effective communication with emergency service providers in the event of a wildland fire or an emergency response call.

Construction of some of the proposed improvements would occur on slopes that include grassy areas, oak woodlands, and other potentially flammable vegetation, increasing the fire hazard risk. During construction of these improvements, the most likely source of ignition would be by mechanical activities such as operation of backhoes, mini excavators, dozers, skid steer, skid loaders, or roller compactors. However, the potential for ignition can be greatly reduced through equipment features, fuel treatment, and management of behavior. Therefore, implementation of the following mitigation measures would reduce the risk associated with fire hazards during the construction period to a less than significant level.

IMPACT 10.A: Construction on vegetated slopes could result in wildland fire due to ignition associated with mechanical activities.

Mitigation Measure 10.A: The following measures shall be implemented throughout the construction period to reduce the potential risk associated with fire hazards:

1. Parks staff shall comply with the County fire prevention practices.
2. Upon notification from the County Fire Department that a “Red Flag Warning - High Fire Danger Alert” exists for Marin County, Parks shall suspend any construction activities involving powered mechanical equipment and shall limit vehicle access to construction staging areas.
3. Parks staff shall hold fire prevention training session(s) for construction staff, contractors, and volunteers. The training shall describe the County’s Fire Prevention Procedures and regulations for smoking and open fires on Parks land, including:
 - o The prohibitions on smoking and open fire or flames while on Parks land;
 - o The use of fire suppression equipment; and
 - o The use of avoidance measures such as not allowing heated tools to contact ignitable fuels or not driving off road or in any area with tall grass.
4. Parks shall maintain fire suppression equipment, including water pumpers and fire extinguishers, on site and on trucks and tractors.
5. Parks shall maintain communication equipment, including cell phones and radios, on site during construction to allow for rapid contact of emergency responders.
6. Parks shall implement the following measures to reduce the risk of fire resulting from the use and storage of fuel:
 - o Refuel power equipment or tools in a cleared space;
 - o Store fuel in a cleared space and, where possible, in the shade;
 - o Turn off equipment while fueling;
 - o Use a gas spout/funnel to avoid spills; and
 - o Remove or dry any spilled fuel prior to starting equipment.
7. Parks shall implement the following measures if welding is necessary during construction:
 - o Suspend welding on hot dry days and when winds exceed five miles per hour;
 - o Perform welding in the morning prior to 10:00 a.m.;
 - o Remove grass within a 12-foot radius of the welding site;
 - o Wet the ground and surrounding vegetation prior to welding and every 15 minutes thereafter;
 - o Maintain a portable welding screen around the welder;
 - o Keep a truck-mounted pumper at the welding site, with the pump engaged during welding; and
 - o Staff an extra person on site with no other duty except to watch for fire and operate the pumper.

With implementation of this mitigation measure, this impact would be reduced to a level of insignificance.

Monitoring Measure 10.A: The following monitoring measures shall be implemented throughout the construction period to ensure compliance with Mitigation Measure 10.A:

- After receiving red-flag warnings, Parks staff shall verify that the park supervisor has suspended the use of heavy equipment.

- Prior to the start of construction, Parks staff shall verify that construction staff held fire prevention training session.
- Parks shall verify the implementation of the various fire safety mitigation measures.

K. NOISE

Would the proposal result in:

a) Substantial increases in existing ambient noise levels?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1 4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, or sleep. Several noise measurement scales exist that are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a ten-fold increase in acoustic energy, while 20 dB is 100 times more intense and 30 dB is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness. Sound intensity is normally measured through the A-weighted sound level (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. The A-weighted sound level is the basis for 24-hour sound measurements which better represent how humans are more sensitive to sound at night. These measurements include the day/night sound level (L_{dn}) and the Community Noise Equivalent Level (CNEL).

Primary noise sources within the plan area include traffic along neighboring roadways, airplanes flying overhead, construction, and minimal noise associated with recreational use of the trails in the plan area.

The County Noise Element includes guidelines for normally acceptable noise levels for types of land uses as established by the California Office of Planning and Research. These guidelines enforce a normally acceptable noise level of 70 dB L_{dn} in park/recreational uses. The County's Noise Ordinance establishes the maximum permissible noise level that may intrude into a neighbor's property and noise level standards for various land use categories affected by stationary noise sources. The County's Noise Ordinance also regulates the timing of construction activities and includes special provisions for sensitive land uses. According to the County's Noise Ordinance, construction activities shall occur only between the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday and from 9:00 a.m. and 5:00 p.m. on Saturdays. Construction is not permitted outside of these hours or on Sundays and federal holidays.

An analysis of potential noise impacts associated with construction and operation activities associated with implementation of the Master Plan is provided as follows.

Long-Term Noise Impacts: Implementation of the Master Plan would not result in a substantial increase in daily traffic trips in the plan area; subsequently, the Master Plan would not result in substantial traffic noise effects on adjacent land uses. Stafford Lake Park is an existing open space use

and implementation of the Master Plan would not significantly increase ambient, long-term noise levels in the plan area.

Short-Term Noise Impacts: Implementation of the Master Plan would include construction activities that could result in a substantial temporary increase in ambient noise levels in Stafford Lake Park and adjacent land uses above levels existing without the Master Plan, but would no longer occur once construction is completed.

The following two types of short-term noise impacts could occur during the construction of the projects associated with the Master Plan. First, construction crew commutes and the transport of construction equipment and materials to the construction site would incrementally increase noise levels on access roads leading to the construction site. Although there would be a relatively high single event noise exposure potential causing intermittent noise nuisance, the effect on longer term (hourly or daily) ambient noise levels would be small. Therefore, short-term construction-related impacts associated with worker commute and equipment transport to the construction site would be less than significant.

The second type of short-term noise impact is related to noise generated during construction. Construction is completed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction related noise ranges to be categorized by work phase. Table 11.A lists typical construction equipment noise levels recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor. Typical noise levels range up to 91 dBA L_{max} at 50 feet during the noisiest construction phases. Because the noisiest construction equipment is earthmoving equipment, the excavation phase is expected to generate the highest noise levels. Construction of the projects proposed in the Master Plan is expected to require the use of front-end loaders, compactors, hydraulic backhoes, and haul trucks. Typical operating cycles for these types of construction equipment may involve one or two minutes of full-power operation followed by three or four minutes at lower power settings.

Table 11.A: Typical Construction Equipment Maximum Noise Levels, L_{max}

Type of Equipment	Range of Maximum Sound Levels (dBA at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)
Pile Drivers	81 to 96	93
Rock Drills	83 to 99	96
Jackhammers	75 to 85	82
Pneumatic Tools	78 to 88	85
Pumps	74 to 84	80
Scrapers	83 to 91	87
Haul Trucks	83 to 94	88
Cranes	79 to 86	82
Portable Generators	71 to 87	80
Rollers	75 to 82	80
Dozers	77 to 90	85
Tractors	77 to 82	80
Front-End Loaders	77 to 90	86
Hydraulic Backhoe	81 to 90	86

Type of Equipment	Range of Maximum Sound Levels (dBA at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)
	81 to 90	86
Graders	79 to 89	86
Air Compressors	76 to 89	86
Trucks	81 to 87	86

Source: Bolt, Beranek & Newman, 1987. *Noise Control for Buildings and Manufacturing Plants*

As shown in Table 11.A, the typical maximum noise level generated by backhoes and front-end loaders is assumed to be 86 dBA L_{max} at 50 feet from the operating equipment. The maximum noise level generated by compactors or rollers is approximately 80 dBA L_{max} at 50 feet. The maximum noise level generated by haul trucks operating at full power is approximately 88 dBA L_{max} at 50 feet from these vehicles. Each doubling of the sound sources with equal strength would increase the noise level by 3 dBA. Assuming each piece of construction equipment operates at some distance apart from the other equipment, the worst-case combined noise level during this phase of construction would be 91 dBA L_{max} at a distance of 50 feet from an active construction area.

The nearest construction activities would occur approximately 1 mile from the nearest residential property line and therefore noise levels during construction would not substantially affect land uses adjacent to the park. Compliance with the hours specified in the Marin County Code regarding construction activities would reduce construction noise impacts on adjacent noise sensitive land uses when construction occurs near the project boundaries.

b) Exposure of people to significant noise levels, or conflicts with adopted noise policies or standards?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 14)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Construction of the projects associated with implementation of the Master Plan would not expose people to significant noise levels. As described above, Stafford Lake Park is an existing open space use and implementation of the Master Plan would not increase noise levels for visitors of the park or surrounding land uses. Therefore, noise impacts would be considered less than significant.

L. PUBLIC SERVICES

Would the proposal have an effect upon, or result in a need for new or altered governmental service in any of the following areas

a) Fire protection?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 24)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The project site and immediate vicinity are served by the Marin County Fire Department. The site is also located within the Novato Fire Protection District. The nearest fire station to the project is the Novato Fire District's Station 63, located at 65 San Ramon Way, approximately 2 1/2 miles east of the park. Implementation of the Master Plan would include construction of recreation improvements. It would not include housing units or other habitable structures. Therefore, the demand for fire protection services would not increase with implementation of the Master Plan. In addition, proposed improvements would be located within an existing County Park, which is clearly marked to aid in access and timely response for medical emergencies. Therefore, the Master Plan would not affect fire services in the area or result in the need for additional or altered fire protection facilities.

b) Police protection?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The project site is served by the Marin County Sheriff's Department, which provides police patrol services to unincorporated areas within the County. Parks Rangers are responsible for enforcing park rules and regulations. Public use of proposed improvements is not expected to significantly affect the Marin County Sheriff's ability to maintain service ratios, response times, other performance objectives, and new or physically altered facilities would not be required. Therefore, the Master Plan would not result in a significant impact related to this issue.

c) Schools?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The Master Plan does not include housing units or other development that would increase the number of students enrolled in schools within the area. Therefore, the Master Plan would not result in an increase in demand for school services or result in the need for additional or altered school facilities.

d) Maintenance of public facilities, including roads?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Implementation of the Master Plan would not include or require expansion of roads, flood control, or other public works facilities. Implementation of the Master Plan would require maintenance of proposed improvements, including the playground, swimming lagoon, parking lots, trails, and roadways within the park. Park staff would perform the daily trash pick-up and general park inspection. Proposed improvements would result in an increase in maintenance responsibilities for Marin County Parks; however, this increase would not result in any significant impacts to roads, flood control or other public

works facilities. Therefore, the Master Plan would not have a significant impact on the maintenance of existing public facilities, including roads.

e) Other governmental services?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The Master Plan would not impact other government services such as libraries since proposed improvements would be located within an existing park and would not increase the population that needs such services. Therefore, the Master Plan would not result in a significant impact related to this issue.

M. UTILITIES AND SERVICE SYSTEMS

Would the proposal result in a need for new systems, or substantial alterations to the following utilities:

a) Power or natural gas?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

As described in the Master Plan, minimal utilities exist within Stafford Lake Park. Electrical service is available at Group Picnic Areas 1 and 2 and the maintenance yard/trailer. To implement proposed improvements, the County would need to extend utility connections from these existing facilities and provide additional transformer capacity. These utility improvements would be linked to site-specific improvement projects. Implementation of the Master Plan would increase electricity and natural gas consumption, but not at a level that would be considered substantial in relation to regional or statewide energy supplies.

Proposed improvements would be subject to the standards of Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings. Title 24 measures consist of developing an energy budget for structures and designing the structures to use no more energy than what is budgeted. The Master Plan would be consistent with the growth projected for the region and the County, and would be within the energy demands of the land uses planned in the CWP. Therefore, the Master Plan would not result in energy demands that would require the development of new energy sources or affect service to existing customers. This impact would be less than significant.

b) Communications systems?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The Master Plan would not result in significant impacts due to an increased need for communications systems, as no communications systems would be provided as part of proposed improvements. Therefore, communications systems would not be affected by implementation of Master Plan.

c) Local or regional water treatment or distribution facilities?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The North Marin Water District (NMWD) provides water to a population of 61,000 people situated in and about the City of Novato, including Stafford Lake Park.²⁴ NMWD purchases approximately 80 percent of its water supply from the Sonoma County Water Agency (SCWA). The remainder of Novato's water comes from Stafford Lake, which supplements NMWD's purchased water supply.

The County would require the use of water²⁵ for construction, maintenance, and operation of proposed improvements. As described in the Master Plan, existing water service extends to most of the picnic areas, three restroom facilities, and the maintenance yard/trailer residence. To implement proposed improvements, utility extensions would be needed. However, these extensions would not be considered "major" lines because they would be connected to existing water supply infrastructure. Because these improvements would be made as additions to existing water supply infrastructure, they would constitute a less-than-significant impact. Water demand would be slightly increased over the existing level of demand due to proposed improvements. However, the increase in demand would not be significant and would not affect local or regional water distribution facilities. Park staff would work with NMWD to ensure adequate water service to the park. Therefore, this impact would be less than significant.

d) Sewer or septic tanks?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

No sewer connection exists at the park. The restrooms and residence rely on individual holding tanks to handle waste. To implement proposed improvements, a sewer line connection could be installed to Novato Sanitary District in place of the existing holding tanks. The County would need to further investigate a possible sewer connection. Any proposed sewer connection would need to be reviewed and approved by Novato Sanitary District prior to issuance of a building permit for specific improvements. A permit and approval from Marin County Environmental Health Services would be required for construction of any additional septic systems at the park. Compliance with these regulatory requirements would ensure that no impacts associated with sewer or septic tanks would result from

²⁴ North Marin Water District, 2015. North Marin Water District website: [The North Marin Water District website: http://www.nmwd.com/index.php](http://www.nmwd.com/index.php) (Accessed December 2, 2015).

²⁵ Other than water for drinking and cleaning, Stafford Lake Park uses raw water. Any water provided for irrigation or construction would be raw water.

implementation of the Master Plan. Therefore, the project would not result in a significant impact related to this issue.

e) Storm water drainage?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 9, 10)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Construction of some of the elements of the Master Plan, including new paved roads, the new gatehouse, parking areas, and a maintenance yard would include the placement of new impervious surfaces at the project site. While most of the underlying soils are hydrologic class C and D,²⁶ which indicates they have low to very low ability to infiltrate water, a modest decrease in absorption of precipitation and a slight increase in runoff could occur under the project.

Since the project would create and/or replace 5,000 square feet or more of impervious surface, it would be required to comply with Section E.12 of the Small MS4 Phase II General Permit (Phase II General Permit)²⁷ that requires implementation of measures for site design, source control, runoff reduction, storm water treatment and baseline hydromodification²⁸ management. The Phase II General Permit also requires implementation of Low Impact Development (LID) standards. LID uses design techniques such as harvest and reuse, infiltration, evapotranspiration to mimic a site's pre-development hydrology.

The Phase II General Permit requires regulated projects (which includes implementation of the Master Plan) to include facilities designed to evapotranspire, infiltrate, harvest/use, and biotreat storm water to meet at least one of the hydraulic sizing design criteria included in the Phase II General Permit. To comply with the Phase II General Permit, a Stormwater Control Plan that describes the project specific measures must be prepared and implemented. Since LID measures would be required under existing NPDES regulations and these measures encourage reuse, infiltration, and bioretention so that site hydrology is not substantially altered, this potential impact is less than significant.

f) Solid waste disposal?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Buildout of the Master Plan would not result in the generation of significant amounts of solid waste. Users of the park would dispose of garbage, but not in amounts that would greatly exceed average per capita garbage generation rates. In addition, recycling receptacles would continue to be located throughout the park, allowing the proposed Master Plan to be in full compliance with the waste diversion goals mandated by the California Integrated Waste Management Act. The amount of solid

²⁶ Natural Resources Conservation District (NRCS), 2015. Web Soil Survey, website: [National Resources Conservation Service web soil survey: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm](http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm) (accessed 11/17/15)

²⁷ NPDES General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems (Small MS4 Permit), Order No. 2013-0001-DWQ

²⁸ Hydromodification is the alteration of the natural flow of water through a landscape, and often takes the form of creek channel erosion. Hydromodification is one of the leading sources of impairment in streams, lakes, and estuaries.

waste generated by both users of the park and construction of park facilities or infrastructure would not substantially decrease the amount of space in the Redwood Landfill, which serves the park.

N. AESTHETICS/VISUAL RESOURCES

Would the proposal:

a) Substantially reduce, obstruct, or degrade a scenic vista open to the public or scenic highway, or conflict with adopted aesthetic or visual policies or standards?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

As described in Section IV.1(a), Land Use, the Marin Countywide Plan includes several policies that protect visual resources. Generally, these policies require the protection of views of ridgelines, greenbelts, hillsides, water, trees, and other natural areas. None of the roads or highways within the vicinity of the Park is designated as scenic highways.

None of the visual changes that would result from implementation of the Master Plan would substantially reduce, obstruct, or degrade a scenic vista or scenic highway, or conflict with adopted aesthetic or visual policies or standards. Proposed improvements (including new roads, parking areas, trails) would be generally low profile and would not block views. New features within the viewshed would include new structures (e.g., Event Center, Zipline, Swimming Lagoon, and Playground). These features would be designed to blend into the surroundings and complement the existing visual setting of the Park. Proposed facilities would be consistent with Marin County Parks' design guidelines and similar in appearance to other facilities within Stafford Lake Park.

Construction of proposed improvements may require removal of some existing trees and other vegetation. However, impacts on visual character and quality of the site from tree/vegetation removal are expected to be less than significant. The proposed Master Plan would include installation of landscaping and visual improvements that would result in a beneficial visual impact at the project site.

During construction of proposed improvements, additional vehicles, workers, and materials coming to and from the site, and site preparation activities would be visible from travelers along Novato Boulevard and from adjacent uses. However, construction activities would occur within the existing Park and would be of intermittent and of relatively short duration.

Therefore, for the reasons cited, the proposed project would not reduce, obstruct, or degrade a scenic vista open to the public or a scenic highway, conflict with adopted aesthetic or visual policies and standards, or otherwise degrade the visual quality or character of the site and surroundings.

b) Have a demonstrable negative aesthetic effect by causing a substantial alteration of the existing visual resources including, but not necessarily limited to: 1) an abrupt transition in land use; 2) disharmony with adjacent uses because of height, bulk, or massing of structures; or 3) cast of a substantial amount of light, glare, or shadow?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

As described in Section IV.13(a) above, improvements proposed as part of the Master Plan would be generally consistent with the visual landscape of the area and would not result in a substantial or adverse change to the visual quality or character of the site and surroundings. The Master Plan proposes park and recreation improvements within an existing County park that currently provides opportunities for active recreation (i.e., barbecues, picnic areas, volleyball, etc.). As such, implementation of the Master Plan would not result in an abrupt transition in land use. As described above, structures associated with the Master Plan would be designed to blend into the surroundings and be consistent with existing facilities within the Park. Therefore, implementation of the Master Plan would not result in height, bulk, or massing that would create any disharmony with the surrounding area or cast any light, create glare, or result in any shadows. Standard lighting would be required in some locations where improvements are proposed. These lighting fixtures would be consistent with other fixtures in the Park. The Park is closed at sunset, except for special events, so minimal overhead lighting would be required and the operation of such lighting would not create a substantial amount of light. No glare-inducing materials (i.e., glass, metal) would be used in proposed improvements. Therefore, the Master Plan would not have a demonstrable negative aesthetic impact resulting from substantial alteration of existing visual resources.

O. CULTURAL RESOURCES

Would the proposal:

a) Disturb paleontological, archaeological, or historical sites, objects, or structures?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 4, 26, 27, 28, 29, 30, 31, 32)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Paleontological sensitivity was assessed by reviewing geologic mapping by Wagner and Gutierrez.²⁹ The park area contains Holocene Alluvium, as well as the mélange facies and sandstone and shale facies of the Cretaceous-Jurassic Franciscan Complex. The deposits of Holocene Alluvium are too

²⁹ Wagner, David L., and Carlos I. Gutierrez, 2010. *Preliminary Geologic Map of the Napa 30-minute by 60-minute quadrangle, California*. California Geological Survey. Map Scale 1:100,000.

young to contain fossils and are considered to have no paleontological sensitivity. Although rocks of the Franciscan Complex have produced scientifically important fossils, these fossils are uncommon to rare. In addition, the rocks of the Franciscan Complex within the park area have been sheared and/or fragmented. As a result, the potential for encountering scientifically significant fossils is extremely low, and these rocks are considered to have no paleontological sensitivity.³⁰

LSA conducted two cultural resources investigations including a records search, literature review, paleontological research, three field surveys (two in 2011 and one in 2014), and prepared documents summarizing the findings of the investigations.³¹³²

The records searches identified prehistoric archaeological site CA-MRN-528, within the park area. The site is a prehistoric lithic scatter located on a “narrow terrace extending west to east” consisting of “obsidian microdebitage and small chert flakes” exposed in rodent hole backdirt piles, in an area measuring approximately 2,000 by 400 feet.³³ No evidence of this site was found during the 2011 or 2014 surveys.

The 2014 records search (which included a larger park area than in 2011) identified prehistoric/historic-period archaeological site CA-MRN-342 buried along Novato Creek adjacent to the park area.³⁴³⁵³⁶³⁷³⁸ The most recent documentation for CA-MRN-342 describes the site as consisting of “obsidian arrow points, bowl mortars, pestles and charmstones, as well as [historic-period] ceramic and glass fragments”.³⁹ Millett also identified human burials at the site. No evidence of the site was identified during LSA’s 2014 survey. The literature review identified Holocene sediments throughout the park area that may be sensitive for buried prehistoric archaeological deposits.

Archaeological deposits may qualify as historical resources under Public Resources Code (PRC) Section 21084.1 or as unique archaeological resources under PRC Section 21083.2. Should those resources so qualify, their disturbance would constitute a substantial adverse change to their significance under *CEQA Guidelines* Section 15064.5(b), which would result in a significant impact under CEQA. Such an impact would require avoidance or mitigation.

The County initiated consultation with Federated Indians of Graton Rancheria (FIGR) per the requirements of AB 52 to solicit feedback on the proposed project, and determine whether FIGR had any specific recommendations for the project or mitigation measures. The measures requested include the following;

³⁰ Kaptain, Neal. 2014. *Cultural Resources Constraints Review for the Stafford Lake Master Plan, Marin County, California*. LSA Associates, Inc., Point Richmond, California.

³¹ Goetter, Karin, 2011. *Memorandum Regarding the Stafford Lake Bike Park, Novato, California*. LSA Associates, Point Richmond, California.

³² Kaptain 2014.

³³ Flynn, Katherine, William Roop, and Mark Roll, 1982-1984. Archaeological Site Survey Form for CA-MRN-342. Archaeological Resource Service, Petaluma, California. On file at the Northwest Information Center, Rohnert Park, California.

³⁴ Flynn et. al. 1982-1984.

³⁵ Jordan, Leigh, 1985. *Letter regarding the location of CA-MRN-342*. On file at the Northwest Information Center, Rohnert Park, California.

³⁶ Millett, Marshall, 2008. California Department of Parks and Recreation Form 523 Series records for CA-MRN-342. On file at the Northwest Information Center, Rohnert Park, California.

³⁷ Pilling, Arnold R., 1951a. Unpublished notes on CA-MRN-342, dated September 14, 1951. On file at the Northwest Information Center, Rohnert Park, California.

³⁸ Pilling, Arnold R., 1951b. University of California Archaeological Site Survey Record for CA-MRN-342. On file at the Northwest Information Center, Rohnert Park, California.

³⁹ Millett, 2008.

8. A tribal representative be present on-site during ground disturbing activity in either of the identified cultural/archaeological sites
9. FIGR involvement in the selection of the archeological team working on park projects
10. Cultural access to the site for FIGR in the form of a cultural easement to accommodate willow branch gathering needs along Novato Creek.

The County made every effort to incorporate these requests in the mitigation measures identified below where appropriate.

Paleontology. As described above, the paleontological sensitivity of the Park is considered low. However, should project construction encounter paleontological resources, impacts to these resources could occur.

IMPACT 15.A.1: Construction of proposed improvements included in the Master Plan could impact paleontological resources if they are encountered during construction.

Mitigation Measure 15.A.1: Should project construction encounter paleontological resources, all ground-disturbing activities within 25 feet shall be redirected to prevent disturbance of the resource(s), and a qualified paleontologist shall be contacted to assess the situation, consult with the County, and make recommendations for the treatment of the discovery. Project personnel shall not collect or move any paleontological materials.

Paleontological resources are considered significant if they may provide new information regarding past life forms, paleoecology, stratigraphy, or geological formation processes. If found to be significant, and project activities cannot avoid disturbing such finds, the mitigation recommended by the consulting paleontologist shall be implemented prior to the resumption of project activities within the 25-foot protective buffer described previously. Mitigation may include monitoring, recording the fossil locality, data recovery and analysis, a final report, and accessioning the fossil material and technical report to a paleontological repository. Public educational outreach may also be appropriate.

Upon completion of the assessment, a report documenting methods, findings, and recommendations shall be prepared and submitted to the County, and, if paleontological materials are recovered, to a paleontological repository, such as the University of California Museum of Paleontology.

Implementation of Mitigation Measure 15.A.1, described above, would reduce potential impacts to paleontological resources to a less than significant level. This reduction would occur because the scientific data that could be derived from the find will be documented and recovered through the assessment by the consulting paleontologist, and mitigation prior to the disturbance of the discovery.

Monitoring Measure 15.A.1: Parks shall verify that the above measure is implemented throughout the construction period.

Archaeological Sites. Background research identified previously recorded prehistoric archaeological site CA-MRN-528 within the Park. No evidence of the site was identified during two intensive archaeological field surveys of its documented location in 2011 and one field survey conducted in 2014. The park area has been disturbed throughout the years by various activities, the most prevalent being the use of the land for hay production for many decades. It is likely that the intensive use of the park area (i.e., annual disking, seeding, mowing, and baling) has displaced and dispersed the sparse surface scatter of lithic materials. Additionally, local chert identified within the park area exhibits fractures that resemble the scarring that occurs when lithic material is crushed, dragged, or displaced

by mechanical equipment, especially during agricultural activities. In addition to the agricultural use of the park area, heavy vehicles were used during the staging and operation of the renaissance faire over the years, adding another source of ground disturbance.

Background research identified previously recorded prehistoric/historic-period archaeological site CA-MRN-342 adjacent to the Park. The site consists of obsidian arrow points, bowl mortars, pestles and charmstones, as well as ceramic and glass fragments, adjacent to the Park. Although deposits associated with CA-MRN-342 may extend into the adjacent park area, construction associated with proposed improvements in the vicinity of the site are anticipated to be shallow and are less likely to impact deposits associated with CA-MRN-342.

IMPACT 15.A.2: Despite the lack of evidence of CA-MRN-528 within the Park, it cannot be definitively demonstrated that subsurface deposits associated with the site are not present in the park area, especially those areas proposed for project-related disturbance. Disturbance of these deposits could result in a significant impact.

Mitigation Measure 15.A.2: Prior to construction of proposed improvements, the County shall require an archaeological presence/absence investigation to determine if subsurface components of the site exist and extend into areas proposed for improvements. The investigation shall include the use of canine's trained in the detection of human remains and shall be overseen by a Registered Professional Archaeologist. FIGR shall provide input during the selection of the archeologist. The final selection of the archeologist will be made by the County. Prior to construction of proposed improvements, the County shall notify FIGR. If FIGR determines it is necessary to have a tribal representative on-site during ground disturbing activity, FIGR will be responsible for providing a tribal representative at no additional expense to the County and in a manner that does not unreasonably delay the County's effort.

Should the investigation indicate that subsurface archaeological deposits associated with CA-MRN-528 exist, proposed improvements shall be redesigned to avoid disturbing said deposits. If such avoidance is not possible, the deposits shall be evaluated to determine if they meet the definition of a historical or unique archaeological resource under California Public Resources Code (PRC) Section 21084.1 and PRC Section 21083.2, respectively. If they do so qualify, the disturbance of such deposits would constitute a substantial adverse change in their significance, which would result in a significant impact under *CEQA Guidelines* Section 15064.5(b).

Prior to the impact described above occurring, the County shall require that the disturbance of the deposits associated with CA-MRN-528 be mitigated through data recovery. Such mitigation could consist of archaeological data recovery through excavation and analysis of recovered materials, and public outreach and interpretation.

Implementation of Mitigation Measure 15.A.2, described above, would reduce potential impacts to CA-MRN-528 to a less than significant level.

Monitoring Measure 15.A.2: Parks shall verify that improvements avoid archaeological deposits associated with site CA-MRN-528 prior to the initiation of construction activities or ensure that mitigation is implemented before impacts occur.

IMPACT 15.A.3: Ground-disturbing activities associated with proposed improvements in the park area east of the dam along the south side of Novato Boulevard could result in impacts to archaeological deposits associated with a known archaeological site (CA-MRN-342).

Mitigation Measure 15.A.3: To identify and avoid or mitigate impacts to archaeological deposits associated with CA-MRN-342 (i.e., the archaeological site adjacent to the park area), a qualified archaeologist shall monitor construction-related ground disturbance of CA-MRN-342 in the park area east of the dam along the south side of Novato Boulevard. Prior to construction of proposed improvements, the County shall notify FIGR. FIGR may choose to provide input during the selection of the archeologist. The final selection of the archeologist will be made by the County. If FIGR determines it is necessary to have a tribal representative on-site during ground disturbing activity, FIGR will be responsible for providing a tribal representative at no additional expense to the County and in a manner that does not unreasonably delay the County's effort.

Should subsurface archaeological deposits associated with CA-MRN-342 exist, proposed improvements shall be redesigned to avoid disturbing said deposits. If such avoidance is not possible, the deposits shall be evaluated to determine if they meet the definition of a historical or unique archaeological resource under PRC Section 21084.1 and PRC Section 21083.2, respectively. If they do so qualify, the disturbance of such deposits would constitute a substantial adverse change in their significance, which would result in a significant impact under *CEQA Guidelines* Section 15064.5(b).

Prior to the impact described above occurring, the County shall require that the disturbance of the deposits associated with CA-MRN-342 be mitigated through data recovery. Such mitigation could consist of archaeological data recovery through excavation and analysis of recovered materials, and public outreach and interpretation.

Implementation of Mitigation Measure 15.A.3, described above, would reduce potential impacts to CA-MRN-342 to a less than significant level.

Monitoring Measure 15.A.3: Parks shall verify that improvements avoid archaeological deposits associated with site CA-MRN-342 prior to the initiation of construction activities or ensure that mitigation is implemented before impacts occur.

IMPACT 15.A.4: The Park is situated within an area of archaeological sensitivity and cultural resources may be impacted during implementation of the Master Plan.

Mitigation Measure 15.A.4: Should an archaeological deposit be encountered during project subsurface construction activities, all ground-disturbing activities within 25 feet shall be redirected and a Registered Professional Archaeologist be contacted to assess the situation (if one is not already on-site), consult with agencies as appropriate, and make recommendations for the treatment of the discovery. If found to be significant (i.e., meets the definition of a historical or unique archaeological resource under CEQA), the County shall require appropriate mitigation measures. Mitigation measures may include recording the archaeological deposit, data recovery and analysis, and public outreach. Upon completion of the selected mitigations, a report documenting methods, findings, and recommendations shall be prepared and submitted to the County for review.

Implementation of Mitigation Measures 15.A.2 through 15.A.4, described above, would reduce potential impacts to archaeological sites to a less than significant level. The realization of the archaeological deposits' data potential through professionally administered archaeological excavation would reduce the impact to the sites to less than significant because data about pre-contact lifeways and subsistence, which would be otherwise be lost through the disturbance of the deposits, will be documented and preserved.

IMPACT 15.A.5: Ground disturbance associated with grading and construction of proposed improvements could affect human remains in the project area.

Mitigation Measure 15.A.5: Any human remains encountered during project ground-disturbing activities shall be treated in accordance with California Health and Safety Code Section 7050.5 and CEQA Guidelines section 15064.5(d). The County shall inform its contractor(s) of the sensitivity of the park area for human remains by including the following directive in contract documents:

"If human remains are uncovered, work within 25 feet of the discovery shall be redirected and the County Coroner notified immediately. At the same time, an archaeologist shall be contacted (if one is not already on site) to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains or associated materials. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. Work within 25 feet of the discovery can resume only after the MLD has inspected the site, provided recommendations, and the remains and associated grave goods removed from the site by a qualified archaeologist in consultation with the MLD."

Implementation of Mitigation Measure 15.A.5, described above, would reduce potential impacts to human remains to a less than significant level.

Monitoring Measure 15.A.5: Parks shall verify that the above measure is implemented throughout the construction period.

Implementation of Mitigation Measure 15.A.5, described above, would reduce potential impacts to human remains to a less than significant level by facilitating the treatment of human remains in accordance with State law and in a manner that is respectful of the cultural beliefs of descendant communities.

Historical Sites, Objects, or Structures: LSA's research and field surveys did not identify any historical sites, objects, or structures that would be impacted by the proposed improvements. Therefore, the Master Plan would not result in a significant impact related to this issue

b) Have the potential to cause a physical change that would adversely affect unique ethnic cultural values, or religious or sacred uses within the project area?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 1, 26, 27, 28, 29, 30, 31, 32)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

LSA's research and field surveys did not identify any historical sites, objects, or structures in the park area and no impacts to such resources would occur.

P. SOCIAL AND ECONOMIC EFFECTS

Would the proposal result in:

a) Any physical changes which can be traced through a chain of cause and effect to social or economic impacts?	Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	Not Applicable
(source #(s): 4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The proposed project would not result in any physical change that would result in a negative social or economic effect because it would entail construction of park and recreation improvements within an existing County Park. Proposed improvements would not result in a significant increase in the costs of providing County services to the Park nor would it result in adverse physical effects on the environment. The Master Plan would not result in a significant impact related to this issue.

VI. MANDATORY FINDINGS OF SIGNIFICANCE

Pursuant to Section 15065 of the State EIR Guidelines, a project shall be found to have a significant effect on the environment if any of the following are true:

A. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Maybe <input type="checkbox"/>
---	---------------------------------	---	-----------------------------------

As described in Section IV of this Initial Study, any potential environmental impacts from the proposed project would be mitigated to a level of insignificance.

B. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Maybe <input type="checkbox"/>
--	---------------------------------	---	-----------------------------------

As described in Section IV of this Initial Study, any potential environmental impacts from the proposed project would be mitigated to a level of insignificance.

C. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects).	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Maybe <input type="checkbox"/>
--	---------------------------------	---	-----------------------------------

As described in Section IV of this Initial Study, any potential environmental impacts from the proposed project would be mitigated to a level of insignificance.

D. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Maybe <input type="checkbox"/>
--	---------------------------------	---	-----------------------------------

As described in Section IV of this Initial Study, any potential environmental impacts from the proposed project would be mitigated to a level of insignificance.

VII. PROJECT SPONSOR'S INCORPORATION OF MITIGATION MEASURES

Acting on behalf of the project sponsor or the authorized agent of the project sponsor, I (undersigned) have reviewed the Initial Study for the Stafford Lake Master Plan and have particularly reviewed the mitigation measures and monitoring programs identified herein. I accept the findings of the Initial Study, including the recommended mitigation measures, and hereby agree to modify the proposed project applications now on file with Marin County to include and incorporate all mitigation measures and monitoring programs set out in this Initial Study.

(Project Sponsor's Name or Representative)

Date

(Project Sponsor's Name or Representative)

Date

VIII. DETERMINATION:

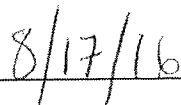
(Completed by Marin County Environmental Planning Manager).

Pursuant to Sections 15081 and 15070 of the State Guidelines, the forgoing Initial Study evaluation, and the entire administrative record for the project:

- ☐ I find that the proposed project WILL NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.



Rachel Reid, Environmental Planning Manager
County of Marin



Date

STAFFORD LAKE PARK MASTER PLAN DOCUMENTS INCORPORATED BY REFERENCE

The following is a list of relevant information sources that have been incorporated by reference into the foregoing Initial Study pursuant to Section 15150 of the State CEQA Guidelines. The number assigned to each information source corresponds to the number listed in parenthesis following the incorporating topical question of the Initial Study checklist. These documents are both a matter of public record and available for public inspection either online or at the Planning Division office of the Marin County Community Development Agency (CDA), Suite 308, 3501 Civic Center Drive, San Rafael. The information incorporated from these documents shall be considered to be set forth fully in the Initial Study.

1. Marin County Parks and RHAA, 2015. Stafford Lake Park Master Plan - Final Draft. October.
2. Sawyer, J.O., T. Keeler-Wolf, J.M. Evans. 2009. A Manual of California Vegetation. California Native Plant Society Press, Sacramento, CA. 1300 pp.
3. County of Marin, Community Development Agency, 2007. *Marin Countywide Plan*. 6 November.
4. Marin, County of. 2013. *Marin County—Title 22, Development Code*.
5. County of Marin, Countywide Plan Map Viewer, Available online at: <http://gisprod.co.marin.ca.us/CWP/Viewer/bottom/Viewer.asp>.
6. California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, *Marin County Important Farmland 2010 Map*, May 2011. Available online at: Marin County Important Farmland Map: <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/mar10.pdf> (Accessed 28 August 2013).
7. Marin County, Department of Parks and Open Space. *Strategic Plan*. June 2008.
8. Miller Pacific Engineering Group, 2011. Geologic and Geotechnical Feasibility Study. Prepared for the Marin County Parks Department. June 23
9. Natural Resources Conservation District (NRCS), 2015. Web Soil Survey, website: National Resources Conservation District web soil survey: <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm> (accessed 11/17/15)
10. NPDES General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems (Small MS4 Permit), Order No. 2013-0001-DWQ
11. Federal Emergency Management Agency (FEMA), 2009. Flood Insurance Rate Map, Map No. 06041C0257D, May 4.
12. NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ, NPDES No. CAS000002 (Construction General Permit
13. Bay Area Air Quality Management District, 2010. California Environmental Quality Act Air Quality Guidelines. May.

14. California Air Resources Board, 2007. *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*. October.
15. Marin County Congestion Management Program 2013 Update, Transportation Authority of Marin, October 15, 2013
16. City of Novato General Plan, City of Novato, Latest Revision May 13, 2014
17. Trip Generation, Institute of Transportation Engineers, 2012
18. Policy on Geometric Design of Highways and Streets, American Association of State Highway and Transportation Officials (AASHTO), Sixth Edition, 2011
19. Highway Design Manual, California Department of Transportation, Fifth Edition 2001
20. California Department of Fish and Wildlife, Natural Diversity Database. October 2015. Special Animals List. Periodic publication. 51 pp.
21. County of Marin. Marin County Code. Undated.
22. CAL FIRE. Maps of Fire Hazard Severity Zones in the State Responsibility Area of California, Marin County. Adopted November 7, 2007.
23. CAL FIRE. Maps of Fire Hazard Severity Zones in the Local Responsibility Area of California, Marin County. Recommended September 25, 2007.
24. Novato Fire Protection District, 2011. Novato Fire Protection District website. Available online at: Novato Fire Protection District website: <http://www.novatofire.org/> (accessed July 20, 2011).
25. Flynn, Katherine, William Roop, and Mark Roll, 1982-1984. Archaeological Site Survey Form for CA-MRN-342. Archaeological Resource Service, Petaluma, California. On file at the Northwest Information Center, Rohnert Park, California.
26. Goetter, Karin, 2011. *Memorandum Regarding the Stafford Lake Bike Park, Novato, California*. LSA Associates, Point Richmond, California. LSA Associates, Inc., Point Richmond, California.
27. Jordan, Leigh, 1985. *Letter regarding the location of CA-MRN-342*. On file at the Northwest Information Center, Rohnert Park, California.
28. Kaptain, Neal, 2014. *Cultural Resources Constraints Review for the Stafford Lake Master Plan, Marin County, California*. LSA Associates, Inc., Point Richmond, California.
29. Millett, Marshall, 2008. California Department of Parks and Recreation Form 523 Series records for CA-MRN-342. On file at the Northwest Information Center, Rohnert Park, California.

30. Pilling, Arnold R., 1951a. Unpublished notes on CA-MRN-342, dated September 14, 1951. On file at the Northwest Information Center, Rohnert Park, California.
31. Pilling, Arnold R., 1951b. University of California Archaeological Site Survey Record for CA-MRN-342. On file at the Northwest Information Center, Rohnert Park, California.
32. Wagner, David L., and Carlos I. Gutierrez, 2010. *Preliminary Geologic Map of the Napa 30-minute by 60-minute quadrangle, California*. California Geological Survey. Map Scale 1:100,000.

15

MEMORANDUM

To: Board of Directors
From: Robert Clark, Operations / Maintenance Superintendent
Subject: FY15/16 Operations / Maintenance 4th Quarter Report
X:\MAINT SUP\2016\BOD\Q4 15-16 O&M Update.docx

September 16, 2016

RECOMMENDED ACTION: Information

FINANCIAL IMPACT: None

Operations Summary

Operations Group completed the flushing program and tank cleaning with the assistance of the two new Distribution & Treatment Plant Operators, Roy Foster and Ben Steel, in early April and started the Stafford Water Treatment Plant. Operations activities and accomplishments during FY15/16 included 3 improvement projects, 2 major maintenance projects during the winter shutdown, and over 500 routine maintenance tasks throughout the year.

Stafford Production

- Spring production season began April 8, 2016. Production for the spring and early summer resulted in 268 MG of treated water (down from 396 in the previous FY).
- Lake water quality was a bit improved over the past FY due to lighter rain events and the operation of the lake water circulation from the Solar Bees and diffused aeration systems.
- Working with the Novato Sanitary District on the Stafford Treatment Plant waste discharge, staff designed and installed an inlet tube for the sludge thickener and a floating discharge intake line to create a more consistent quality of discharge flow to NSD.
- Staff updated the granular activated carbon specification and sent out a request for proposal for a four bed carbon replacement and the carbon was delivered in late June.

Novato Water System Flows

- Novato production was up for the period this FY compared to the same period last year, likely due to lifting of the conservation restrictions, average daily production was 8.5 MGD, with a peak day of 14.4 MGD.
- Recycled water total production for the period was 61.4 MG, up 15% from the April-June period last year. Operation of the Deer Island RW plant was postponed until September due to new staff training efforts.

West Marin System Flows, Demands and Storage

- West Marin average daily production was 208,050 gpd with a peak day of 377,400 gallons – about 6% higher than the same period last year.
- The demands continued to allow for single-well operation, which help reduce salinity intrusion and improve energy efficiency.

Oceana Marin

- During the period, force main pump flow averaged 13,200 gpd with a peak of 27,420 gallons. The total discharge to the irrigation field was the same as previous years, leaving a freeboard of 6.1 feet at the end of June.
- District staff performed an inspection of infiltration and intrusion during rain events to determine what manholes have significant inflow. A list of 28 of 135 manholes was created for a future project to reline them.

Water Quality Summary

Staff continued to support the activities for contract lab services to Novato Sanitary District. Other activities this year included coordinating with Environmental Laboratory Accreditation Program staff for the Main Lab permit evaluation and the evaluation of Stafford Lake sanitary survey.

Maintenance Summary

Maintenance staff had the Electrical/Mechanical Technician leave for a position at MMWD and was filled by Kent LeBrun, our fleet mechanic that had been cross training in the E/M tech position for the past three years. The Electrical mechanical staff will have two of the senior members retire in the next 12-18 months so two positions for Apprentice Electrical/Mechanical Technicians were solicited and one position was filled by Ben Ielmorini. Department accomplishments during FY15/16 include 6 facility improvement projects and over 450 routine maintenance tasks. Improvement projects also included Point Reyes well #2 rebuild, West Marin distribution water quality mixing pumps, Main Office building HVAC repairs and tank level / intrusion alarms.

Electrical / Mechanical

- Designed, built, installed and started new PG&E power service for the Redwood Landfill rectifier facilities.
- Completed the installation of new programmable logic controllers at the Bugeia and Cabro

Ct. Pump stations and at the Black Point tank site.

- Performed 25 Giacomini carpet replacement, painting, landscape repairs and minor electrical work prior to new tenant moving in.
- Aqueduct cathodic protection survey and final rectifier adjustment post the AEEP project.

Cross-Connection Control (CCC)

- The CCC technician invited 30 plumbers and backflow testers in to review the District's CCC program requirements and standard design and specifications for backflow installations. A list of these contractors is provided to our customers that are required to perform annual testing or if a new device is required to be installed.

Building and Grounds

- Completed annual inspection of the landscape plantings and irrigation for the Recycled Water South, Leveroni Creek Restoration, and the Palmer Tank, Center Road Tank and Amaroli Tank projects. A few plant replacements and minor irrigation upgrades were identified; otherwise, all sites are recovering nicely.

Fleet Operations

- We hired a new fleet Mechanic, Jeff Watkins, who has taken over and performed nicely.
- Received and outfitted two new vehicles for the fleet, a Nissan Frontier pick-up for the Field Service Reps and a Ford Escape for the Lab.

16

MEMORANDUM

To: Board of Directors
 From: Chris DeGabriele, General Manager
 Subject: Technical Advisory Committee Meeting – September 12, 2016
t:\gm\scwa\tac minutes and agenda\2016\tac cd notes 091216.doc

September 16, 2016

RECOMMENDED ACTION: Information Only

FINANCIAL IMPACT: None

Agenda and supporting information attached.

3. Water Supply Conditions and Temporary Urgency Change Petition

Grant Davis advised that Lake Sonoma currently holds approximately 220,000AF (88.5% of water supply capacity) and Lake Mendocino holds approximately 62,000AF (90% of the target water storage curve). Grant pointed out that the estuary is currently closed and wanted to assure the public that Sonoma County Water Agency does not and cannot close the estuary; it only closes by natural wave action.

I reminded the parties that the PG&E Request for Temporary Variance of Potter Valley Project Flows into the East Branch of the Russian River had been approved. David Keller from Friends of the Eel River indicated that at the last drought working group meeting, PG&E advised that they would now be contemplating a reoperation of Lake Pillsbury similar to the Forecast Informed Reservoir Operations program now being undertaken by U.S.A Corps of Engineers at Lake Mendocino. PG&E contemplates that it will take 2 years to develop such a program.

4. Sonoma-Marin Saving Water Partnership

- a. Water Production Relative to 2013 Benchmark – a table included in your agenda was reviewed, showing that cumulative water production for SMSWP is 21% below 2013 in July and 23% below the 2013 aggregate from June 2015 through July 2016 for the partnership. I reminded the parties that State Board is starting the clock again beginning June 2016 for compliance with the Emergency Water Conservation Regulations; Sonoma Marin Saving Water Partnership however will continue reporting on an aggregate basis from June 2015.
- b. SWRCB Urban Water Advisory Group – Jennifer Burke reported on the advisory group activities, both she and Grant Davis are appointed members (Carrie Pollard from SCWA typically sits in for Grant). The group includes representatives from DWR, State Water Resources Control Board, CPUC, California Energy Commission and the California Department of Food and Agriculture. These five agencies are working together with selected individuals from the water community to develop a report due by January 2017 on long-term water conservation requirements. The State Board intends to make permanent the water waster prohibitions currently in the emergency regulations, system water loss training requirements and input on action to accelerate leak detection and repair. Additionally, the State Board proposes to strengthen Water Shortage Contingency Plans using statewide triggers which will likely need to be updated before the next Urban Water Management Plan cycle. Additionally, it's likely the State will move toward a water budget for each agency to replace the 20 by 2020 requirements with indoor water use set at 55 gpcd, outdoor water use based on irrigated area and an evapotranspiration constant for the particular agency plus commercial, industrial and institutional reductions. The State Board is looking for one method to accommodate this which will be very difficult to achieve.

5. Biological Opinion Status Update

Ann Dubay provided the update included in your agenda. During the Fish Habitat Flows and Water Rights Project Presentation she advised that Agency Board will hold a public hearing on September 19th and that the comment period on the Draft EIR for the Fish Flow Project closes on October 17th. The Fish Flow Project proposes five elements: 1) comply with the Biological Opinion reduction in minimum instream flows; 2) preserve cold water pool in Lake Mendocino for fall chinook salmon migration; 3) move the Hydrologic Index for Russian River instream flows from the Eel River Watershed to Lake Mendocino; 4) provide for a time extension in the Agency's water rights to put 75,000AF per year to full beneficial use; and 5) add Occidental and Windsor diversions as authorized points of diversions in the Agency's water rights.

6. NMWD's Presentation FY2016 Residential Consumption Status Report

David Bentley's presentation (similar to that received by the NMWD Board at the September 6th meeting) is included in your agenda for information.

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



TECHNICAL ADVISORY COMMITTEE

MONDAY, SEPTEMBER 12, 2016

9:00AM

Utilities Field Operations Training Center
35 Stony Point Road, Santa Rosa, CA

1. Check In
2. Public Comment
3. Water Supply Conditions and Temporary Urgency Change Order
4. Sonoma Marin Saving Water Partnership
 - a. Water Production Relative to 2013 Benchmark
 - b. SWRCB Urban Water Advisory Group
5. Biological Opinion Status Update
 - a. Fish Habitat Flows and Water Rights Project Presentation
6. NWMD Presentation FY2016 Residential Consumption Status Report
(An example of tiered rates effectiveness in reducing consumption over time)
7. Items for next agenda
8. Check Out

State Water Resources Control Board Conservation Standard Tracking for the Sonoma-Marin Saving Water Partnership

Table 1: Monthly Water Use Relative to 2013 Benchmark

Water Retailer	July 2016 (Gallons)	2013 Benchmark (Gallons)	Savings Relative to 2013 Benchmark	July 2016 GPCD*	FY 2015/2016 Conservation Standard
Cal Am	30,304,143	33,627,000	10%	109	25%
Cotati	31,314,281	38,580,758	19%	139	20%
Marin Municipal	859,073,576	970,059,698	11%	146	20%
North Marin	314,332,167	385,000,000	18%	165	24%
Petaluma	297,958,154	354,536,977	16%	155	16%
Rohnert Park	141,484,504	187,000,000	24%	105	16%
Santa Rosa	597,936,585	864,389,151	31%	111	16%
Sonoma	37,047,629	98,961,078	63%	103	28%
Valley of the Moon	86,220,175	127,873,875	33%	117	20%
Windsor	126,202,092	145,212,104	13%	148	16%
SMSWP Total	2,521,873,308	3,205,240,642	21%	134	19%

* GPCD is provided as information only

Table 2: Aggregate June 2015 to Current Month Relative to 2013 Benchmark

Water Retailer	Aggregate June 2015 to Date (Gallons)	2013 Benchmark (Gallons)	Savings Relative to 2013 Benchmark	FY 2015/2016 Conservation Standard
Cal Am	289,942,161	374,564,000	23%	25%
Cotati	311,872,343	398,418,018	22%	20%
Marin Municipal	8,862,475,947	11,025,857,545	20%	20%
North Marin	3,054,362,296	3,996,000,000	24%	24%
Petaluma	2,971,614,487	3,861,502,504	23%	16%
Rohnert Park	1,655,042,848	2,013,000,000	18%	16%
Santa Rosa	6,494,667,533	8,631,245,916	25%	16%
Sonoma	643,617,897	922,453,782	30%	28%
Valley of the Moon	912,236,975	1,274,558,081	28%	20%
Windsor	1,203,068,612	1,558,063,486	23%	16%
SMSWP Total	26,398,901,099	34,076,507,070	23%	19%



Russian River Biological Opinion Update – September 2016

The Sonoma County Water Agency is continually planning and implementing the Russian River Biological Opinion requirements. The following project updates provide a brief synopsis of current work. For more detailed information about these activities, please visit www.sonomacountywater.org.

Fish Flow Project

On August 19, the Water Agency released the Environmental Impact Report for the Fish Habitat Flows and Water Rights Project. Open House workshops were held on August 22 (Cloverdale) and on August 24 (Monte Rio). A total of about 110 people attended the workshops and 29 comment cards were submitted. A public hearing is scheduled for September 13, Supervisors Chambers, 3 p.m.

Dry Creek Habitat Enhancement Project

- Miles 2 and 3: Site preparation is complete and construction is underway on 0.6 miles of creek downstream of the Truett Hurst Winery and on a 0.3 mile reach downstream of the Westside Road Bridge. Water Agency Staff are working with property owners to finalize designs and right-of-way agreements for remaining Mile 2 and 3 sites planned for construction in 2017.
- Miles 4-6: Planning, preliminary field investigation and design are under way for Miles 4 - 6.
- The US Army Corps is using information from Mile 2-6 to complete two feasibility studies that should pave the way for federal funding. The first Army Corps study under the Continuing Authorities Program (CAP) will help complete Miles 2 and 3. A draft CAP study was recently completed and recommends Army Corps construction of reach 4a (total length 0.4 miles) at a total federal cost of \$3.28 million. The second Army Corps effort for Mile 4-6 planning, called a General Investigation (GI) Ecosystem Restoration study, has less funding restrictions and should be completed by 2018.

Fish Monitoring

During the month of September, Water Agency biologists will be sampling juvenile fish throughout Dry Creek. Video, sonar, and tag detection equipment has been installed near the mouth of Dry Creek, at the Healdsburg fish ladder, and in the new Mirabel fish ladder to count returning adult fish. To date, no upstream migrating salmon have been detected. The fall migration typical peaks between mid-October and mid-November. Monitoring also is underway in the estuary, including monthly seining.

Mirabel Screen and Fish Ladder Replacement

Major construction activities are nearing completion. The new screens and viewing windows are in place; the sheet piles have been removed; testing is underway on the new screens; and interpretive signs are being designed for the viewing gallery. In early July, the inflatable dam was raised for the first time in two years. No problems were detected, and the dam is operating normally. The project will be officially complete sometime in the fall, with an opening ceremony and tour.

Russian River Estuary Management Project

- The 2016 Lagoon Management Period began on May 15. The 2016 Lagoon Management Plan is similar to previous years, with the exception of monitoring of harbor seals and other pinnipeds. This year, the Water Agency, Stewards of the Coast and Redwoods and volunteers will focus

monitoring at the Jenner overlook, and not monitor other haul-out locations when the estuary is closed unless an outlet channel is successfully in place for more than 3 weeks. Prior-year monitoring found that very few pinnipeds use the other haul-out locations.

- So far this management season, the mouth of the Russian River has closed three times:
 - May 31: An outlet channel was implemented on June 7, but scoured open later that day.
 - June 15: An outlet channel was implemented on June 27, which scoured open that evening.
 - July 1: The estuary self-breached on July 12.
- During the past two years, studies were conducted to determine if and how the historic Goat Rock State Park jetty impacts the formation of the barrier beach and lagoon water surface elevation. Comments have been received on the draft report, and a final report will be released in the fall.

Interim Flow Changes

The Water Agency filed a Temporary Urgency Change Petition (TUCP) with the State Water Board in order to comply with the Biological Opinion flow requirements. The State Water Board issued a TUC order in May. The order is currently being implemented.

Public Outreach, Reporting & Legislation

- The Dry Creek Habitat Enhancement Bulletin was distributed in August.
- The focus in September is on outreach for the Fish Flow DEIR, including publicizing the availability of the document, community workshops and hearing.
- Planning is underway for the opening of the fish ladder and viewing gallery (late October/early November).

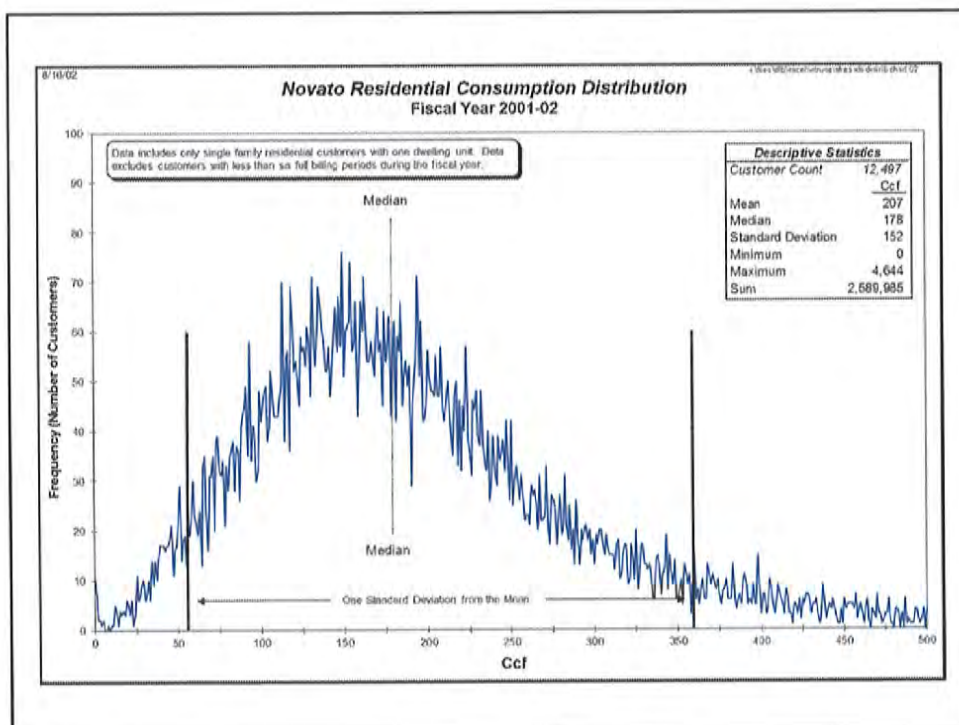


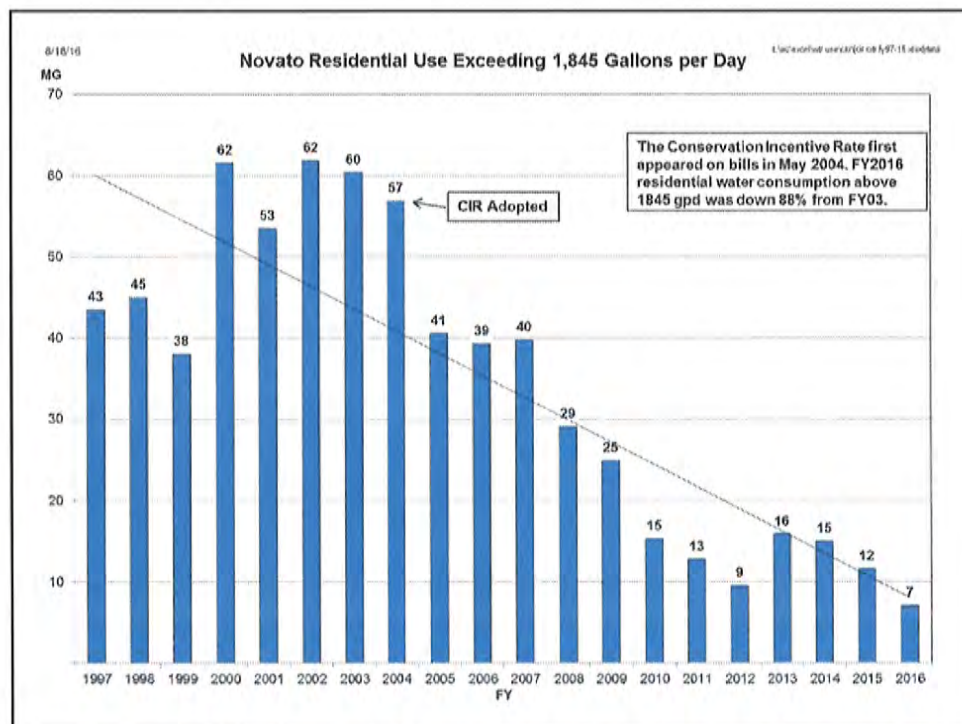
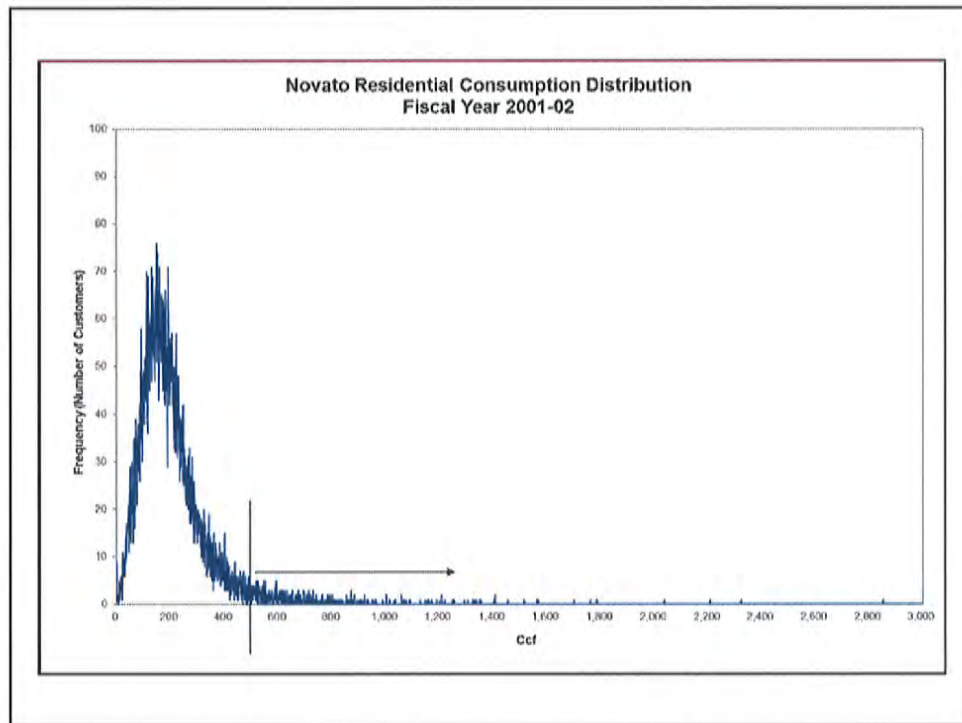
Construction on Mile 2 of the Dry Creek Habitat Enhancement Project, near Truett Hurst Winery

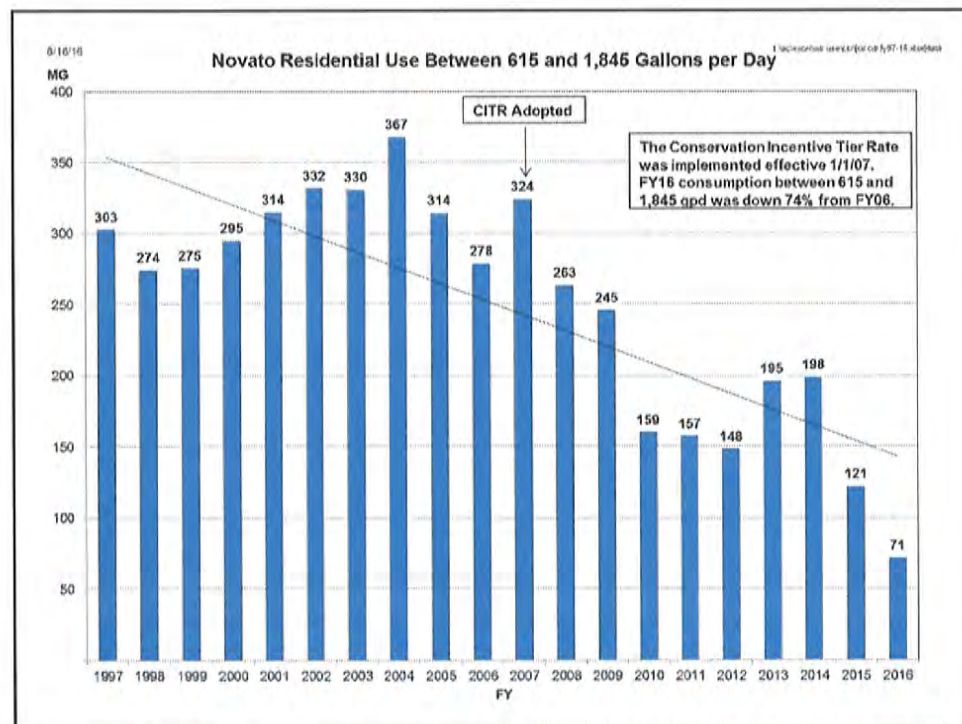
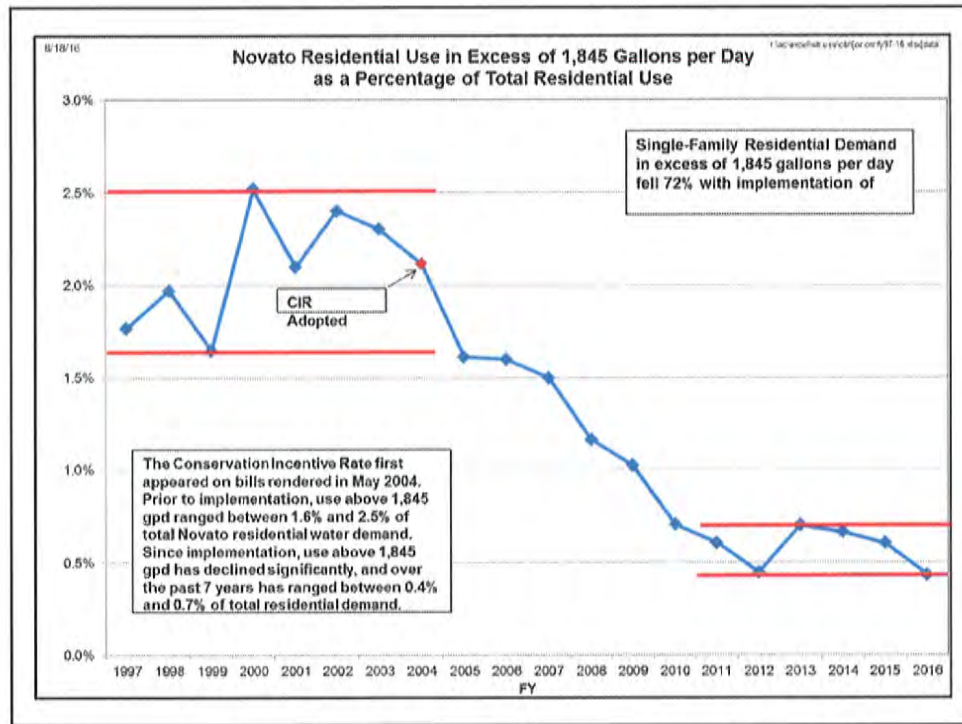
North Marin Water District Tiered-Rate Structure

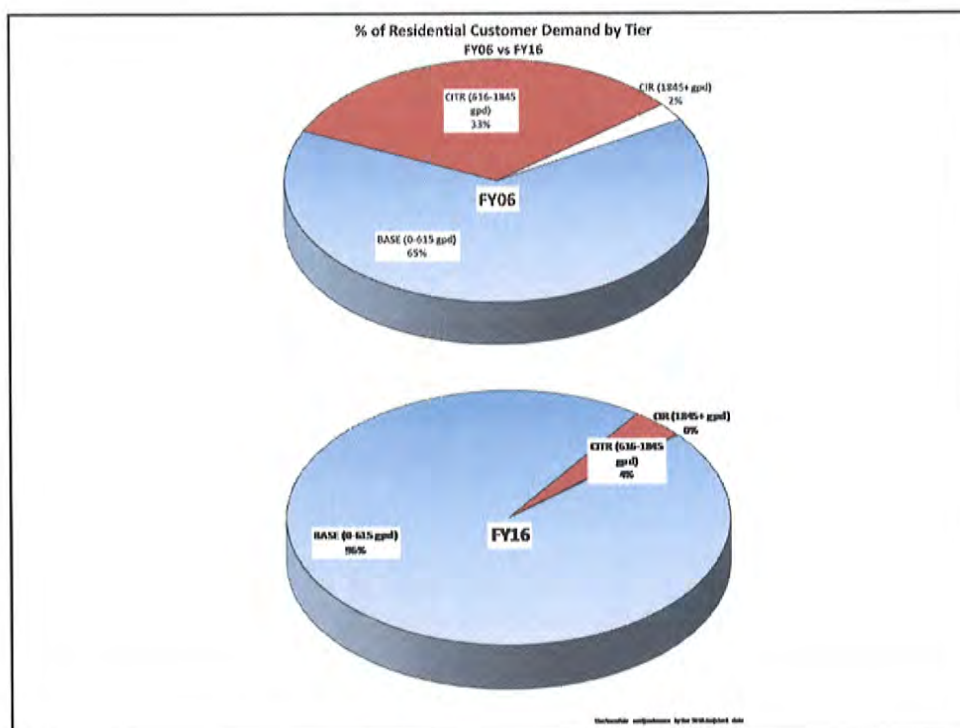
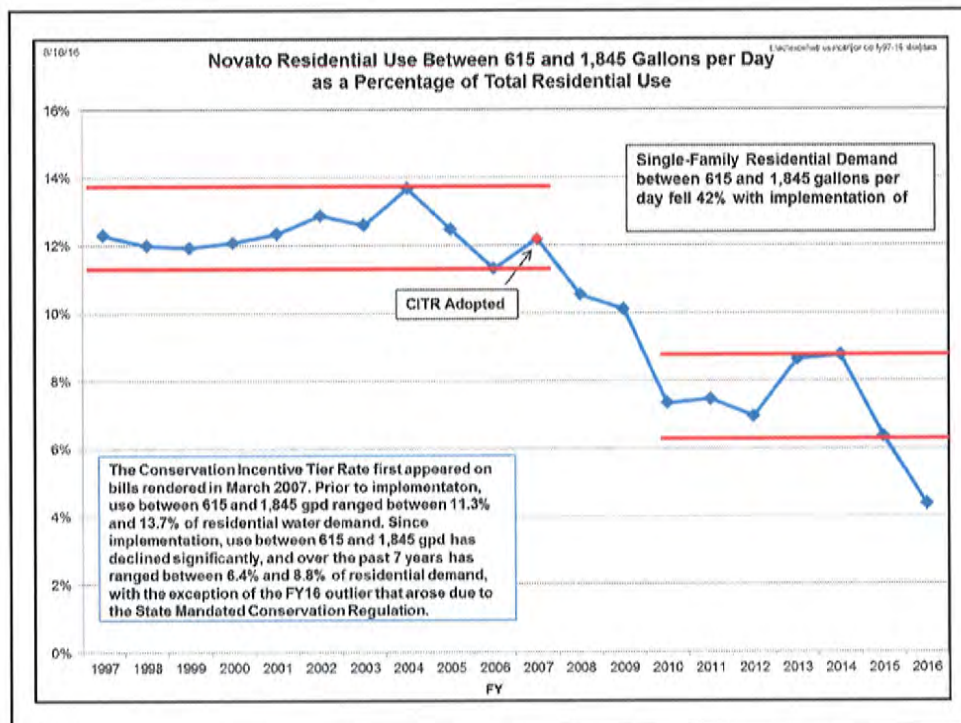
TAC Presentation

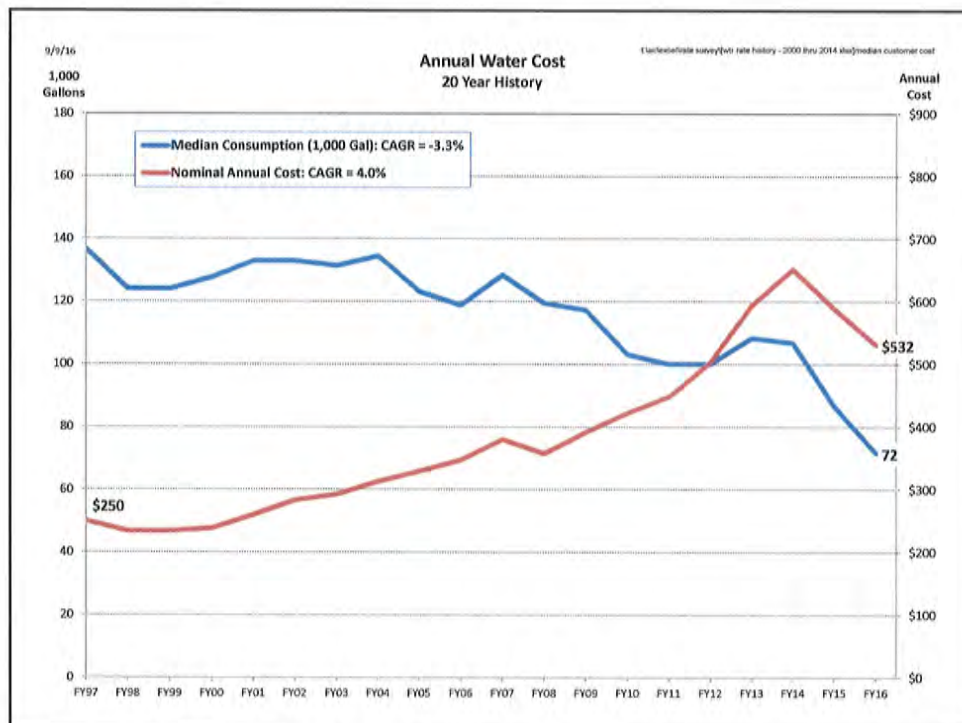
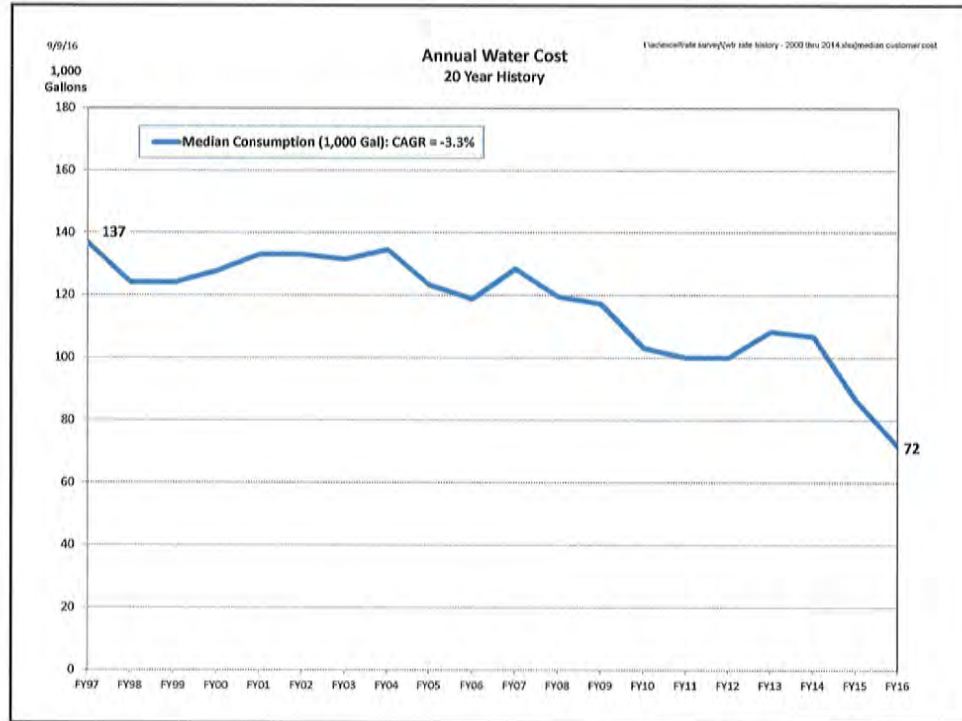
September 12, 2016

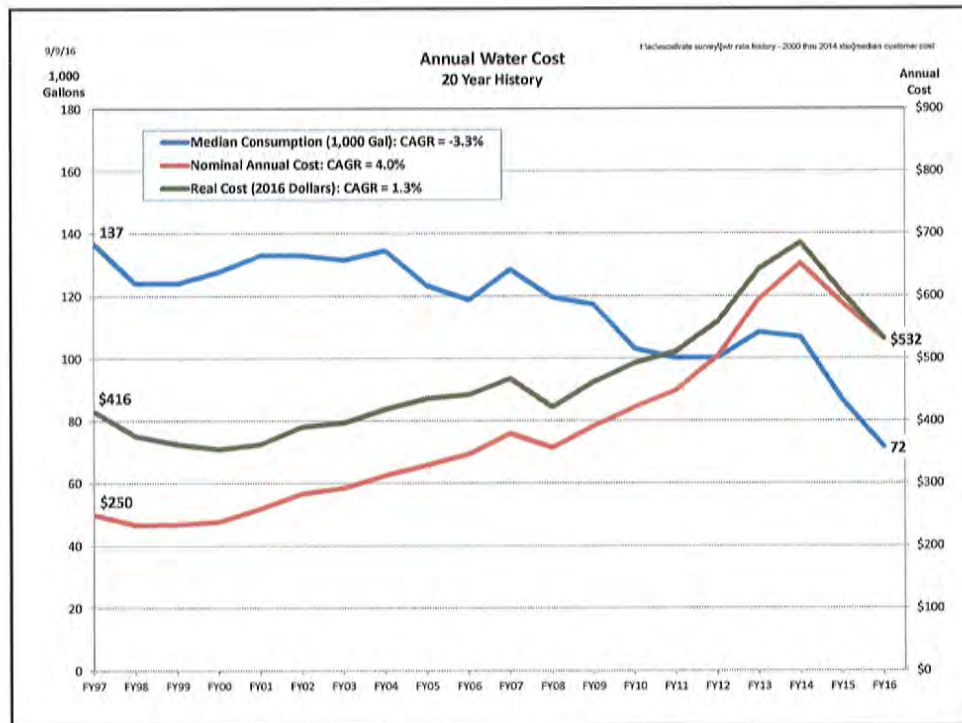












17

DISBURSEMENTS - DATED SEPTEMBER 15, 2016**ITEM #17**

Date Prepared 9/13/16

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	Labor to Mount New Struts (\$108) ('07 Chevy Colorado), Tires (2) (\$683) & Mount & Balance ('12 Intl 5 yd Dump Truck)	\$933.12
2	Alliquip Universal	Drive Belts for Vac Blower (2) (\$352) & 4" Hose Couplers (8) (\$489)	840.15
3	Alpha Analytical Labs	Lab Testing	66.00
4	Asbury Environmental Services	Used Oil Recycling	231.55
5	Athens Administrators	Sept Workers' Comp Admin Fee	1,000.00
6	AT&T	Leased & Data Lines	1,643.00
7	Bastogne	Overpayment on Open Accounts (2)	258.66
8	Borges & Mahoney	Electrode & pH Probe (\$304) (STP)	456.77
9	Buck's Saw Service	Labor to Test & Clean Water Feed on Concrete Saw	26.25
10	Building Supply Center	PVC Conduits (3), Elbows (6), Electrical Supplies, Copper Tubing (PR Tanks) & Pipe Union	214.78
11		Cafeteria Plan: Uninsured Medical & Vision Reimbursement	319.75
12	Clark, Robert E.	Exp Reimb: Rotary Club Dues (\$170) (Budget \$130) & Lunch Meeting (\$35)	205.07
13	Clipper Direct	Commuter Benefit Program (1)	173.00
14	Coast Counties Peterbilt	Driver's Side Seat Belt ('09 Peterbilt 335 Crew)	184.42
15	CSW/Stuber-Stroeh Engineering	Prog Pymt#8: Hwy 101 & SMART Boring (Balance Remaining on Contract \$9,721)	3,985.50
16		Vision Reimbursement	185.71
17	Diggs, James	Retiree Exp Reimb (September Health Ins)	306.09

Seq	Payable To	For	Amount
18	E & M	SCADA Distribution Upgrade (\$1,082) & 1 Year Support	1,276.73
19	Environmental Express	Sample Cups (1,000) (Lab)	51.36
20	Fisher Scientific	Pipet Tips (600) (\$168), Chemical Color Tester Tube (\$76) & Nitric Acid (Lab)	308.61
21	Frontier Communications	Leased Lines (10)	1,583.03
22	Golden Gate Petroleum	Gas (\$2.26/gal) & Diesel (\$2.14/gal)	437.32
23	Grainger	Marking Chalk (24-17 oz cans) (\$116), Marking & Stripping Paint (48-17oz cans) (\$239), 8 5/8" Inspection Mirror, Swing Check Valves (2), 9 Volt Batteries (4) (\$56), Tool Tote, Safety Goggles, Outdoor Speakers (\$84) ('09 Peterbilt 335 Crew), Drill Bits, Hex & Multi Step Bit Set (\$220) & Beverage Cooler	840.79
24	Groeniger	3" Bolts (80) (\$126), 8" Transition Couplings (4) (\$879), Coupling Adaptor (\$257), Valve Checks (2) & Gate Valves (2) (\$1,359)	2,636.87
25	Hardy Diagnostics	Standards (3) (Lab)	223.15
26	Holton, Nancy	Exp Reimb: Government Finance Officers Association Class in Sacramento 8/31-9/1. Hotel (\$129), Parking (\$20) & Mileage (\$83)	232.56
27	Jim-n-i Rentals	Steel Plate Rental (2 weeks) (Redwood Landfill Project)	426.95
28	Kai, Hale I	Refund Payment (Made to North Marin Water Instead of Marin Municipal)	2,284.60
29	Kessler, Sue	Retiree Exp Reimb (September Health Ins)	315.28
30		Vision Reimbursement	368.00
31	Maltby Electric	Electrical Supplies	341.93
32	Marin Landscape Materials	Concrete (1/2 yd)	105.49
33	Marin County Treasurer	Semi-Annual Bond Service. PRE-1 Revenue Bond Interest	1,250.00

Seq	Payable To	For	Amount
34	Marin County Ford	Oil Filter, Air Filter, Motor Oil (6 qts), Wiper Blades (2), Brake Rotors (2), Pads & Shocks (2) ('10 F150) (\$447), Drive Shaft Support Bearing & Oil Temp Sensor ('08 F350) (\$165), Steering Wheel ('10 F150) (\$403) & Diagnose Check Engine Light ('08 F350) (\$290)	1,359.89
35	McCullough, Dona	Refund Overpayment on Closed Account	6.23
36	Mello, John	Retiree Exp Reimb (September Health Ins)	949.78
37	Moore, Doug	Retiree Exp Reimb (September Health Ins)	949.78
38	Neopost USA	Postage Meter Rental	85.72
39	North Marin Auto Parts	Transmission Filters (3) (\$33), Air Filters (3) (\$49), Fuel Filters (2) (\$40), Motor Oil (55qts) (\$222), Wiring Kit for Trailer (\$65), Transmission Fluid (8 qts) (\$63), Brake Shoes & Core Deposit ('07 Chevy Colorado) (\$79), Degreaser (1 gal), Cleaning Brush, Gear Oil (3 qts), Battery & Cable Connector (\$104) (Crest Generator), Battery (\$207) ('08 F350), Wiper Blades, Gear Oil (4 qts) (\$51), Load Lights (Hyster Forklift), Clearance Lights & Spark Plugs (4)	1,202.73
40	North Bay Gas	Carbon Dioxide (\$244) & August Cylinder Rental (\$609)	852.72
41	Novato Chevrolet	Spark Plugs (5), Front Shocks & Pinion Seal (\$147), Heater Door Actuator (\$70) & Windshield Wiper Fluid Hose	284.26
42	NTT Training	Electrical Safety Training (Ielmorini & LeBrun)	2,998.00
43	O'Reilly Auto Parts	Wiper Fluid (6 gal), Brake Cleaner (36-14oz) (\$105) & Degreaser (80 oz)	131.98
44	Pini Hardware	Parts for New Manganese Analyzer (\$63), Receptacle Side & Cover Box for San Antonio P/S, Garden Hose, Spray Paint, 1/4" PVC Pipe, Elbows (9), Nipples (3), Washers, Pex Tube, Clamps (8), Screws (4), Conduit (2), Light Bulbs (4), Couplings (4), Plumbing Supplies (STP), Fittings (6), Bushing, Insulator (4), Pipe Fittings for Crest Tank, Electrical Supplies (Lab), Mouse Bait, Sprinkler Heads (2) (\$36), Bolt & Nut, 12' Squeegee (\$28), Replacement Head & Handle	467.44

Seq	Payable To	For	Amount
45		Cafeteria Plan: Uninsured Medical Reimbursement	985.00
46	Sequoia Safety Supply	Brief Relief Urine Bags (100)	259.91
47	Shirrell Consulting Services	Dental Insurance Admin Fee	299.45
48	Shirrell Consulting Services	August Dental Expense	15,771.72
49	Sonoma County Water Agency	Reimbursement for Printed Water Bottles (100)	372.00
50	Sonoma Boot	Safety Boots (Latanyszyn)	162.36
51	Stafford, Vernon	Retiree Exp Reimb (September Health Ins)	315.28
52	Staples Advantage	Copy Paper (Letter-30 reams, 11" x 17"-10 reams) (\$206) & USB Modem (STP)	342.73
53	Syar Industries	Asphalt (6 tons)	765.11
54	Syserco	HVAC Damper Actuator	143.27
55	Teeters & Schact	Windshield ('08 F250)	336.90
56	Thatcher of California	Ferric Chloride (9 tons) (STP)	3,623.39
57	United Parcel Service	Delivery Service: Sent Pump Out for Rebuild (STP) & Sent Meter Out for Repair (Cons. Svcs)	34.66
58	Univar	Sodium Hypochlorite (200 gal) (STP)	397.69
59	US Bank	August Safekeeping Fee-Treasury Securities (8/1-8/31/16)	128.50
60	US Postal Service	Meter Postage	1,000.00
61	Verizon Wireless	Cellular Charges: Data (\$212) & Airtime (\$103) (19)	314.76
62	Veriato	Internet Tracking Software (Budget \$1,170)	1,170.00
63	Watersavers Irrigation	Weed Killer (\$83) (3 gal), Weed Eater Line (615') & Drip Irrigation Supplies	205.64
64	White, Richard and Kay	Claim Settlement-Reimb for Damage Allegedly Incurred to AC Condensate Pump (10 Oak Forest Road)	210.50

Seq	Payable To	For	Amount
65	Wikstrom, Mary	Novato "Cash for Grass" Rebate Program	380.00
		TOTAL DISBURSEMENTS	<u>\$60,219.89</u>

The foregoing payroll and accounts payable vouchers totaling \$60,219.89 are hereby approved and authorized for payment.



Auditor-Controller

9/12/16

Date



General Manager

Date

DISBURSEMENTS - DATED SEPTEMBER 8, 2016

Date Prepared 9/6/16

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 8/31/16	\$135,671.57
EFT*	US Bank	Federal & FICA Taxes PPE 8/31/16	59,951.35
EFT*	State of California	State Taxes & SDI PPE 8/31/16	10,660.52
EFT*	CalPERS	Pension Contribution PPE 8/31/16	33,723.46
1	101 Office Products	Toner Cartridges (2)	38.58
2	All Star Rents	Propane (20 gal) (STP)	65.03
3	Alpha Analytical Labs	Lab Testing	131.00
4	Athens Administrators	Replenishment for Workers' Comp Checks Written (8/1-8/31/16)	511.85
5	AT&T	Internet Service @ PRTP	80.00
6	Bentley, David L.	Exp Reimb: Venegas Deposition. Mileage (\$30), Toll (\$7) & Uber Fare (\$15)	52.01
7	Bold & Polisner	Director's Compensation (\$210), Employer Assisted Housing (\$105), JM Pipe Claim (\$588), Office Relocation (\$231), Potter Valley Relicensing (\$105), RW Exp Central East (\$503) & SCWA (\$105)	1,846.78
8	Bonner, Jackie	Novato "Toilet Rebate" Program	300.00
9	Burrell, William	Novato "Washer Rebate" Program	50.00
10	Caltrans	Final Billing: March-May 2015 AEEP Betterments	1,185.38
11	Centrisys	Service Call for Centrifuge (STP)	1,965.00
12	Cla-Val	Pilot Valve Repair Kit for Harbor Dr. Regulator #2	187.93
13	Collum, Paul	Refund Deposit - New Development Water Conservation Restriction	1,000.00


Seq	Payable To	For	Amount
14		Vision Reimbursement	159.00
15	DeGabriele, Chris	Exp Reimb: August Mileage	189.00
16	Cashier Dept of Pesticide Regulations	Pesticide Applicator's Certificate Renewal (Cilia) (1/17-12/31/17) (Budget \$60)	60.00
17	Environmental Resource Association	Performance Evaluation Study Samples (\$393) & Metals (Lab)	509.64
18	Environmental Express	Standards (Lab)	92.28
19	Evoqua Water Technologies	Service on Deionization System (Lab)	305.00
20	Fisher Scientific	Ice Packs (24) & pH Strips (700) (\$129) & Standards (\$75) (Lab)	241.34
21	Foster, Heather	Novato "Cash for Grass" Rebate Program	400.00
22	Giacomini, Mervin	Novato "Washer Rebate" Program	50.00
23	Golden Gate Petroleum	Gasoline (\$2.06/gal) & Diesel (\$2.01/gal)	1,228.84
24	Graboski, Julia	Novato "Toilet Rebate" Program	100.00
25	Grainger	Stop Sign for Back Gate, Intrusion Alarm Switches (5) (\$272), Pry Bar Set (3), Heat Shrink Label Markers (4) (\$151)	506.82
26	Hach	Reagents (STP)	383.24
27	Hempel, Machiko	Novato "Toilet Rebate" Program	300.00
28	Hopkins Technical Products	Part for Chloride Generator (STP)	125.94
29	Jones, Joanna	Novato "Toilet Rebate" Program	300.00
30	Kovitz, Kenn	Novato "Toilet Rebate" Program	100.00
31		Cafeteria Plan: Uninsured Medical Reimbursement	20.00
32	Lane, Elbert & Warrenetta	Refund Overpayment on Closed Account	38.13
33	Metrohm USA	Annual Purchase of Consumables for Preventative Maintenance of Cation/Anion Ion Chromatograph System (Lab)	1,199.94
34	Mouser Electronics	Digi-Card for SCADA Upgrade	629.73

Seq	Payable To	For	Amount
35	Novato Builders Supply	Screws, Post & Fence Boards (\$184), Plywood for Storage Box, Driver Tip & Concrete (\$389)	685.78
36	City of Novato	Street Excavation Moratorium Fee (Margarita Terrace)	500.00
37	One Stop Resource	Repair Filter Display Panel (STP)	1,161.00
38	Origin Micro	Radio Telemetry Fire Walls (6)	1,740.00
39	Pace Supply	Tapping Sleeve (\$708), Couplings (34) (\$1,423), Flanged Adaptors (2) (\$507), Meter Spuds (44) (\$375) & Test Cocks (4)	3,029.51
40	Ramm, Enrica	Novato "Cash for Grass" Rebate Program	400.00
41	Ravina, Joe	Novato "Washer Rebate" Program	50.00
42	RMC Water & Environment	Prog Pymt#23: Recycled Water Title 22 Engineering Report Update (Balance Remaining on Contract \$49,302)	723.00
43	Sequoia Safety Supply	Confined Space Vent Fan	391.45
44	Shell	Small Tool Fuel	25.50
45	Soiland	Drain Rock (13 tons)	337.56
46	Solinst	Water Level Meter (STP)	431.96
47	SRT Consultants	Progress Pymt#1: Stafford Lake Watershed Sanitary Survey (June 2016) (Balance Remaining on Contract \$27,675)	2,285.00
48		Vision Reimbursement	108.00
49	Streakwave Wireless	Radio (\$92) & Domed Radio Cover for San Mateo Tank	117.48
50	Thomas Scientific	Safety Gloves (2,000) (Lab)	164.52
51	USA BlueBook	Back Pressure Valve (\$467) & Hydrogen Peroxide (STP)	543.86
52	Vali Cooper & Associates	Prog Pymt#4: Construct Management Services for AEEP Reaches A-D MSN B3 Project (Balance Remaining on Contract \$2,046)	3,478.28
53	VWR International	Water Treatment Color Disk & Replacement Color-of-Water Tester (\$797) (Lab)	1,073.43

Seq	Payable To	For	Amount
54	Williamson, Nancy	Exp Reimb: Government Finance Officers Association Class in Sacramento 8/29-8/30. Hotel (\$129), Parking (\$20), Food (\$12) & Mileage (\$83)	244.10
55	Wyley, Gale	Novato "Toilet Rebate" Program	100.00
56	Yim, Darryl	Novato "Toilet Rebate" Program	200.00
		TOTAL DISBURSEMENTS	<u>\$272,149.79</u>

The foregoing payroll and accounts payable vouchers totaling \$272,149.79 are hereby approved and authorized for payment.


9/5/16
 Auditor-Controller
 Date


9/5/2016
 General Manager
 Date