

SOLANO COUNTY WATER AGENCY



BOARD OF DIRECTORS MEETING

BOARD OF DIRECTORS:

Chair:

Mayor Pete Sanchez
City of Suisun City

Vice Chair:

Director John D. Kluge
Solano Irrigation District

Mayor Elizabeth Patterson
City of Benicia

Mayor Thom Bogue
City of Dixon

Mayor Harry Price
City of Fairfield

Director Ryan Mahoney
Maine Prairie Water
District

Director Dale Crossley
Reclamation District No.
2068

Mayor Norman Richardson
City of Rio Vista

Supervisor Erin Hannigan
Solano County District 1

Supervisor Monica Brown
Solano County District 2

Supervisor Jim Spering
Solano County District 3

Supervisor Skip Thomson
Solano County District 5

Supervisor John Vasquez
Solano County District 4

Mayor Len Augustine
City of Vacaville

Mayor Bob Sampayan
City of Vallejo

GENERAL MANAGER:

Roland Sanford
Solano County Water
Agency

DATE: Thursday, October 12, 2017

TIME: 6:30 P.M.

PLACE: Berryessa Room
Solano County Water Agency Office
810 Vaca Valley Parkway, Suite 203
Vacaville

1. CALL TO ORDER

2. PLEDGE OF ALLEGIANCE

3. APPROVAL OF AGENDA

4. PUBLIC COMMENT

Limited to 5 minutes for any one item not scheduled on the Agenda.

5. CONSENT ITEMS (estimated time: 5 minutes)

(A) Minutes: Approval of the Minutes of the Board of Directors meeting of September 14, 2017 is recommended.

(B) Expenditure Approvals: Approval of the September 2017 checking account register is recommended.

(C) Quarterly Financial Reports: Approve the Income Statement and Balance Sheet of September 30, 2017.

(D) Contract with Bryo Technologies for PSC Algaecide Study: Authorize General Manager to execute \$57,428 contract with Bryo Technologies for Putah South Canal Algaecide Study.

(E) Contracts with Palencia Consulting for Lake Berryessa Watershed Sanitary Survey: Authorize General Manager to execute \$40,000 contract with Palencia Consulting and reimbursement contract with Napa County for 75% of Palencia Consulting expenditures for Lake Berryessa Watershed Sanitary Survey.



- (F) Payment of Solano Habitat Conservation Plan – Incidental Take Permit Fee: Authorize General Manager to pay \$35,000 Incidental Take Permit fee to California Department of Fish and Wildlife.
- (G) Agreement with WaterFluence for implementation of Solano Regional Large Landscape Water Budget Program: Authorize General Manager to execute \$70,000 contract with WaterFluence for continuation of Solano Regional Large Landscape Water Budget Program.
- (H) State Water Project Tolling Agreement: Authorize General Manager to execute seventh amendment to Tolling Waiver Agreement with California Department of Water Resources regarding State Water Project charges.

6. **BOARD MEMBER REPORTS** *(estimated time: 5 minutes)*

RECOMMENDATION: For information only

7. **GENERAL MANAGER'S REPORT** *(estimated time: 5 minutes)*

RECOMMENDATION: For information only.

8. **SOLANO WATER ADVISORY COMMISSION** *(estimated time: 5 minutes)*

RECOMMENDATION: Hear report from Commission Chair on activities of the Solano Water Advisory Commission.

9. **3-YEAR CACHE SLOUGH COMPLEX WATER QUALITY, PRODUCTIVITY AND FISHERES STUDY** *(estimated time 15 minutes)*

RECOMMENDATION: Authorize General Manager to execute \$1,259,017 contract with UC Davis for the 3-year Cache Slough Complex Water Quality, Productivity and Fisheries Study.

10. **LEGISLATIVE UPDATES** *(estimated time: 5 minutes)*

RECOMMENDATION:

1. Hear report from Committee Chair on activities of the SCWA Legislative Committee.

11. **WATER POLICY UPDATES** *(estimated time: 10 minutes)*

RECOMMENDATION:

1. Hear report from staff on current and emerging Delta and Water Policy issues and provide direction.
2. Hear status report from Committee Chair on activities of the SCWA Water Policy Committee.

3. Hear report from Supervisor Thomson on activities of the Delta Counties Coalition, Delta Protection Commission, and Delta Stewardship Council.
4. Hear report from Mayor Patterson on activities of the Delta Conservancy.

12. TIME AND PLACE OF NEXT MEETING

Thursday, November 9, 2017 at 6:30 p.m. at the SCWA offices.

The Full Board of Directors packet with background materials for each agenda item can be viewed on the Agency's website at www.scwa2.com.

Any materials related to items on this agenda distributed to the Board of Directors of Solano County Water Agency less than 72 hours before the public meeting are available for public inspection at the Agency's offices located at the following address: 810 Vaca Valley Parkway, Suite 203, Vacaville, CA 95688. Upon request, these materials may be made available in an alternative format to persons with disabilities.

OCT.2017.bod.agd

CONSENT ITEMS

**SOLANO COUNTY WATER AGENCY
BOARD OF DIRECTORS MEETING MINUTES**

MEETING DATE: September 14, 2017

The Solano County Water Agency Board of Directors met this evening at the Solano County Water Agency. Present were:

Supervisor Erin Hannigan, Solano County District 1
Supervisor Monica Brown, Solano County District 2
Supervisor James Spering, Solano County District 3
Supervisor John Vasquez, Solano County District 4
Supervisor Skip Thomson, Solano County District 5
Mayor Thom Bogue, City of Dixon
Mayor Harry Price, City of Fairfield
Mayor Len Augustine, City of Vacaville
Mayor Norman Richardson, City of Rio Vista
Councilmember Robert McConnell, City of Vallejo
Director John Kluge, Solano Irrigation District

CALL TO ORDER

The meeting was called to order at 6:30 P.M. by Vice-Chair Kluge.

APPROVAL OF AGENDA

On a motion by Supervisor Vasquez and a second by Supervisor Hannigan the Board unanimously approved the agenda.

PUBLIC COMMENT

Mr. Tenpass, Friends of Putah Creek, invited Board members to come and tour the Winter Putah Creek Project.

CONSENT ITEMS

Mayor Bogue requested Consent Item 5C be pulled for further discussion. On a motion by Mayor Bogue and second by Supervisor Brown the Board unanimously approved Consent Items 5A,5B, 5D, 5E, 5F, and 5G.

- (A) Minutes
- (B) Expenditure Approvals
- (C) Vehicle Purchases
- (D) Contract With Global Diving & Salvage
- (E) Authorize Purchase of Water Quality Equipment for North Bay Aqueduct and Solano Project Water Quality Monitoring
- (F) Contract With Wood Rodgers Inc. for Rio Vista Flood Control Feasibility Study
- (G) Contract With Solano Resource Conservation District for Administration of the Welcome to the Watershed Education Program

With regard to Item 5C, Mayor Bogue expressed concerns regarding the potential maintenance cost of the proposed hybrid vehicle (one of four vehicles recommended for purchase). Supervisor Spering made a motion, which was seconded by Supervisor Hannigan, to approve the purchase of all four vehicles. However, no action was initially taken, discussion continued. Supervisor Brown made a substitute motion, which was seconded by Mayor Bogue, to approve purchase of all but the hybrid vehicle and for staff to gather additional information regarding the potential maintenance cost of the hybrid vehicle, for discussion at a future Board meeting. The substitute motion failed on a margin of 4 for and 7 against, Director Kluge, Mayor Bogue, and Supervisors Brown and Thompson voted in favor. The original motion to approve staff recommendation of Consent Item 5C passed on margin of 9 for and 2 against, Mayor Bogue and Supervisor Brown dissenting.

BOARD MEMBER REPORTS

There were no Board Member reports.

GENERAL MANAGER'S REPORT

There were no additions to the General Manager's written report.

SOLANO WATER ADVISORY COMMISSION

No report.

LEGISLATIVE UPDATES

On a motion by Supervisor Thompson and a second by Supervisor Hannigan the Board unanimously approved the SCWA Legislative Committee's recommendations to:

1. Authorize SCWA Legislative Committee Chair or General Manager to sign letter of support for AB 1420 (Aguiar-Curry and Dodd) – Water Rights: Small Irrigation Use: Lake or Streambed Alteration Agreements
2. Authorize SCWA Legislative Committee Chair or General Manager to sign letter of support for HR 3275 (McNerney) – Water and Energy Sustainability Through Technology Act

WATER POLICY UPDATES

General Manager Roland Sanford summarized the SCWA Water Policy Committee recent discussions regarding flood management.

Supervisor Thomson provided Board members with an informational handout produced by the Delta County Coalition regarding alternatives to California WaterFix.

CLOSED SESSION

The Board went into Closed Session at 7:17 p.m. to discuss existing litigation: Friends of Putah Creek vs. Solano County Water Agency, Solano County Case No. FCS049217. The Board took no reportable actions in closed session and returned to open session at 7:33 p.m.

TIME AND PLACE OF NEXT MEETING

Thursday, October 12, 2017 at 6:30 p.m., at the SCWA offices in Vacaville

ADJOURNMENT

This meeting of the Solano County Water Agency Board of Directors was adjourned at 7:34 p.m.

Roland Sanford
General Manager & Secretary to the
Solano County Water Agency

**ACTION OF
SOLANO COUNTY WATER AGENCY**

DATE: October 12, 2017
SUBJECT: Expenditures Approval

RECOMMENDATIONS:

Approve expenditures from the Water Agency checking accounts for the month of September, 2017.

FINANCIAL IMPACT:

All expenditures are within previously approved budget amounts.

BACKGROUND:

The Water Agency auditor has recommended that the Board of Directors approve all expenditures (in arrears). Attached is a summary of expenditures from the Water Agency's checking accounts for the month of September, 2017. Additional backup information is available upon request.

Recommended: 
Roland Sanford, General Manager

Approved as
recommended

Other
(see below)

Continued on
next page

Modification to Recommendation and/or other actions:

I, Roland Sanford, General Manager and Secretary to the Solano County Water Agency, do hereby certify that the foregoing action was regularly introduced, passed, and adopted by said Board of Directors at a regular meeting thereof held on October 12, 2017 by the following vote.

Ayes:

Noes:

Abstain:

Absent:

Roland Sanford
General Manager & Secretary to the
Solano County Water Agency

SOLANO COUNTY WATER AGENCY
Cash Disbursements Journal
For the Period From Sep 1, 2017 to Sep 30, 2017

Filter Criteria includes: Report order is by Date. Report is printed in Detail Format.

Date	Check #	Account ID	Line Description	Debit Amount	Credit Amount
9/1/17	EFT	2020SC 1020SC	Invoice: 2017082901 PAYCHEX, INC.	230.95	230.95
9/1/17	EFT	2020SC 1020SC	Invoice: HEALTH SEP 2017 CALPERS	15,668.15	15,668.15
9/1/17	EFT	2020SC 1020SC	Invoice: PPE 08.26.17 CALPERS	8,264.91	8,264.91
9/1/17	EFT	2020SC 1020SC	Invoice: PEPRA PPE 08.26.17 CALPERS	1,344.05	1,344.05
9/1/17	EFT	2020SC 1020SC	Invoice: SIP PPE 08.26.17 CALPERS	4,310.35	4,310.35
9/1/17	FEHRENKAMP JUL 2017	6360AC	GOVERNMENT FINANCE - 2 DAY CLASS	522.00	
		6144SC	WINFORD ENGINEERING - SUPPLIES	32.26	
		6144SC	GRAINGER - SUPPLIES	412.63	
		6210AC	PURE GRAIN BAKERY - BOARD MTG	44.50	
		6210AC	NUGGET MARKET - BOARD MTG	20.96	
		6360AC	GOVERNMENT FINANCE - 4 HR SEMINAR	135.00	
		6144SC	SHOW ME CABLES - SUPPLIES	87.54	
		6144SC	CAMPBELL SCIENTIFIC - SUPPLIES	211.44	
		2025SC	SALES TAX ON WINFORD ENGINEERING		2.28
		2025SC	SALES TAX ON SHOW ME CABLES		4.66
		1020SC	BANK OF THE WEST		1,459.39
9/1/17	PASCUAL JUL 2017	6144N	PACIFIC ACE HARDWARE - SUPPLIES	61.29	
		6161N	THE WEBSTAIRANT STORE - SUPPLIES	39.02	
		6230SC	CABELAS - WADERS	235.47	
		6230SC	CABELAS - WADERS	106.32	
		6144N	PACIFIC ACE HARDWARE - SUPPLIES	65.77	
		6144N	PACIFIC ACE HARDWARE - SUPPLIES	74.96	
		6040AC	VARIDSK - STANDUP DESK	532.75	
		6310AC	CHEVRON - FUEL	52.43	
		6144N	TARGET - SUPPLIES	27.00	
		6144N	JENSEN INSTRUMENT - SUPPLIES	37.23	
		6144N	PACIFIC ACE HARDWARE - SUPPLIES	25.03	
		6144N	PACIFIC ACE HARDWARE - SUPPLIES	12.65	
		2025SC	SALES TAX - THE WEBSTAIRANT STORE		1.03
		2025SC	SALES TAX - CABELAS - WADERS		22.87
		1020SC	BANK OF THE WEST		1,246.02
9/5/17	30614	2020SC 1020SC	Invoice: SCWA BOAT MAINT 2017 GONE FISHING MARINE	882.60	882.60
9/6/17	COLIAS JUL 2017	6166SC	AMAZON - SUPPLIES	192.21	

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Date	Check #	Account ID	Line Description	Debit Amount	Credit Amount
		6310AC 1020SC	CHEVRON - FUEL BANK OF THE WEST	43.02	235.23
9/9/17	EFT	2024AC	EMPLOYEE LIABILITIES PPE 09.09.17	15,125.19	
		6012AC 1020SC	EMPLOYER LIABILITIES PPE 09.09.17 PAYROLL TAXES	2,715.52	17,840.71
9/9/17	EFT	2020SC 1020SC	Invoice: 9791750429 VERIZON WIRELESS	2,476.46	2,476.46
9/11/17	30615	2020SC 1020SC	Invoice: 193905 A & L WESTERN AGRICULTURAL LABS	137.00	137.00
9/11/17	30616	2020SC 1020SC	Invoice: 2498097 AMERICAN TOWER CORPORATION	578.26	578.26
9/11/17	30617	2020SC 1020SC	Invoice: 2017-18 - #1 DAVID OKITA	3,000.00	3,000.00
9/11/17	30618	2020SC 1020SC	Invoice: 14565174 EAN SERVICES, LLC	1,523.78	1,523.78
9/11/17	30619	2020SC 1020SC	Invoice: 4674965 EVERBANK COMMERCIAL FINANCE	1,096.25	1,096.25
9/11/17	30620	2020SC 1020SC	Invoice: 187 GATES CONSULTING SERVICES	560.00	560.00
9/11/17	30621	2020SC 1020SC	Invoice: CL67176 INTERSTATE OIL COMPANY	952.08	952.08
9/11/17	30622	2020SC 1020SC	Invoice: APRIL 2018 CONF SALMONID RESTORATION FEDERATION	500.00	500.00
9/11/17	30623	2020SC 2020SC 2020SC 2020SC 1020SC	Invoice: 007097 Invoice: 006027 Invoice: 008219 Invoice: 008525 SAM'S CLUB	158.24 75.37 277.23 86.78	597.62
9/11/17	30624	2020SC 1020SC	Invoice: 0831170229 SHANDAM CONSULTING	17,902.50	17,902.50
9/11/17	30625	2020SC 1020SC	Invoice: 20961-26 THE REGENTS OF THE UNIVERSITY OF CA	392.16	392.16
9/11/17	30626	2020SC 1020SC	Invoice: 6 THINKING GREEN CONSULTANTS	1,029.49	1,029.49
9/11/17	30627	2020SC 2020SC 2020SC 2020SC 2020SC 2020SC 1020SC	Invoice: 12114324 Invoice: 12114326 Invoice: 12114897 Invoice: 12115354 Invoice: 3047007 Invoice: 12115556 THE TREMONT GROUP, INC.	177.04 258.06 33.47 43.07 225.49 85.76	736.75
9/11/17	30628	2020SC 1020SC	Invoice: PASANG TSERING PASANG TSERING	620.00	620.00

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9/11/17	30629	2020SC 1020SC	Invoice: 18440 LAUGENOUR AND MEIKLE	7,632.50	7,632.50
9/11/17	ASHLEY AUG 2017	6040AC	REMOTE LINK - PG&E CONF CALL	31.21	
		6040AC	REMOTE LINK - SALMON FEST CONF CALL	44.18	
		6210AC	X STAMPER - NAME PLATE FOR BRIAN BUSCH	18.38	
		6040AC	SAFEWAY - FCAC MTG	22.89	
		6040AC	SAFEWAY - FCAC MTG	54.95	
		6040AC	REMOTELINK - HEW REBATE CONF CALL	15.27	
		6166SC	SAFEWAY - LBO	120.89	
		6040AC	WALMART - FCAC	9.00	
		6050AC	PITNEY BOWES - INK	66.91	
		6040AC	REMOTELINK - CONF CALL	17.23	
		6040AC	NUGGET - GSA MTG	32.45	
		6040AC	NAPOLI PIZZA - SWAC	89.88	
		6040AC	WALMART - SWAC	5.96	
		6040AC	WALMART - TEAM MTG	5.28	
		6040AC	SHANGHAI EXPRESS - TEAM MTG	150.00	
		6040AC	REMOTELINK - CII CALL	4.32	
		6040AC	REMOTELINK - CONF CALL	5.05	
		6040AC	REMOTELINK - EXEC. COMM. CALL	14.13	
		6040AC	REMOTELINK - LEGISLATIVE COMM CALL	24.03	
		6040AC	REMOTELINK - CONF CALL	7.71	
		6040AC	VISTAPRINT - JUSTIN PASCUAL BUSINESS CARDS	34.43	
		6040AC	CHEVRON - ICE FOR INTERN TOUR	8.42	
		6040AC	ROUNDTABLE - FOOD FOR INTERN TOUR	86.37	
		1020SC	BANK OF THE WEST		868.94
9/11/17	BRET COYLE	6554AC	BRET COYLE, 1307 GLEEN ST., VALLEJO, CA 94590	1,000.00	
		1020SC	BRET COYLE		1,000.00
9/11/17	DAVID VOGL	6554AC	DAVID VOGL, 410 MOSELEY RD., HILLSBOROUGH, CA 94010	5,000.00	
		1020SC	DAVID VOGL		5,000.00
9/11/17	JACK PIPER	6554AC	JACK PIPER, 601 FOX POINTE DR., VACAVILLE, CA 95687	1,000.00	
		1020SC	JACK PIPER		1,000.00
9/11/17	LAIRD FINNIE	6554AC	LAIRD FINNIE, 471 TOPSAIL DR., VALLEJO, CA 94591	1,000.00	
		1020SC	LAIRD FINNIE		1,000.00
9/11/17	MICHAEL BERRIZ	6554AC	MICHAEL BERRIZ, 140 RENNERT WAY, DIXON, CA 95620	1,000.00	
		1020SC	MICHAEL BERRIZ		1,000.00
9/11/17	PATRICIA CURRAN	6554AC	PATRICIA CURRAN, 602 COUNTRYSIDE DR..	1,000.00	

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		1020SC	COUNTRYSIDE DR., VACAVILLE, CA 95687 PATRICIA CURRAN		1,000.00
9/12/17	30630	2020SC 1020SC	Invoice: APR - JUN 2017 PUTAH CREEK COUNCIL	50,018.77	50,018.77
9/14/17	30631	2020SC 2020SC 2020SC 2020SC 2020SC 2020SC 2020SC 2020SC 2020SC 2020SC 2020SC 2020SC 2020SC 2020SC 2020SC 2020SC	Invoice: 4013390 Invoice: 4013391 Invoice: 0240931 Invoice: 2594287 Invoice: 0024081 Invoice: 9024320 Invoice: 9024321 Invoice: 7010477 Invoice: 7024498 Invoice: 0011223 Invoice: 0011222 Invoice: 0090627 Invoice: 7020804 Invoice: FCH-006364523 HOME DEPOT CREDIT SERVICE	84.02 337.08 37.60 189.09 259.80 40.89 24.44 325.29 36.33 53.68 260.82 45.11 75.50 20.00	1,789.65
9/14/17	30632	2020SC 2020SC 2020SC 1020SC	Invoice: 163126 Invoice: 163128 Invoice: 170671 INSTITUTE FOR ENVIRONMENTAL HEALTH, INC	885.00 885.00 760.00	2,530.00
9/14/17	30633	2020SC 1020SC	Invoice: 507175 M&M SANITARY LLC	144.00	144.00
9/14/17	30634	2020SC 2020SC 2020SC 2020SC 2020SC 2020SC 2020SC 2020SC 2020SC 2020SC 2020SC 2020SC 1020SC	Invoice: 765919 Invoice: 765936 Invoice: 763720 Invoice: 766082 Invoice: 765045 Invoice: 766266 Invoice: 763504 Invoice: 763382 Invoice: 763670 Invoice: 766245 Invoice: 763742 PISANIS AUTO PARTS	30.93 109.47 107.01 2.67 102.66 36.55 23.24 102.98 57.01 8.25	10.30 570.47
9/14/17	30635	2020SC 2020SC 1020SC	Invoice: 374237 Invoice: 375233 TRACTOR SUPPLY CREDIT PLAN	145.87 20.38	166.25
9/14/17	30636	2020SC 1020SC	Invoice: 1942 WARREN'S WATER TRUCK SERVICE	800.00	800.00
9/14/17	30637	2020SC 1020SC	Invoice: 15 YOLO COUNTY RCD	18,104.11	18,104.11
9/14/17	30638	2020SC 1020SC	Invoice: CL68528 INTERSTATE OIL COMPANY	816.42	816.42
9/14/17	30639	2020SC 1020SC	Invoice: MICHAEL BERRIZ MICHAEL BERRIZ	1,000.00	1,000.00
9/14/17	30640	2020SC 1020SC	Invoice: BRET COYLE BRET COYLE	1,000.00	1,000.00
9/14/17	30641	2020SC 1020SC	Invoice: PATRICIA CURRAN PATRICIA CURRAN	1,000.00	1,000.00

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9/14/17	30642	2020SC 1020SC	Invoice: LAIRD FINNIE LAIRD FINNIE	1,000.00	1,000.00
9/14/17	30643	2020SC 1020SC	Invoice: JACK PIPER JACK PIPER	1,000.00	1,000.00
9/14/17	30644	2020SC 1020SC	Invoice: DAVID VOGL DAVID VOGL	5,000.00	5,000.00
9/15/17	EFT	2020SC 1020SC	Invoice: 2017091301 PAYCHEX, INC.	225.55	225.55
9/15/17	EFT	6040AC	HANDBOOK ADMINISTRATION FEE SEP 2017	69.96	
		6040AC	FSA PARTICIPANT FEE SEP 2017	113.50	
		1020SC	PAYCHEX, INC.		183.46
9/15/17	EFT	2020SC 1020SC	Invoice: PPE 09.09.17 CALPERS	8,264.91	8,264.91
9/15/17	EFT	2020SC 1020SC	Invoice: PEPRA PPE 09.09.17 CALPERS	1,156.17	1,156.17
9/15/17	EFT	2020SC 1020SC	Invoice: SIP PPE 09.09.17 CALPERS	4,310.35	4,310.35
9/19/17	30645	2020SC 1020SC	Invoice: 0505538 ACWA JOINT POWERS INSURANCE AUTHORITY	1,522.56	1,522.56
9/19/17	30646	2020SC 1020SC	Invoice: IN-1170886607 ALPHA MEDIA II LLC	2,095.00	2,095.00
9/19/17	30647	2020SC 1020SC	Invoice: SEP 2017 BOD MTG THOMAS BOGUE	100.00	100.00
9/19/17	30648	2020SC 1020SC	Invoice: 51317977 CHEVRON AND TEXACO	1,722.87	1,722.87
9/19/17	30649	2020N 1020SC	Invoice: SEP 2017 CLEAN TECH ADVOCATES	8,600.00	8,600.00
9/19/17	30650	2020SC 2020SC 2020SC 1020SC	Invoice: 17-026-T OCT 2017 Invoice: 18-050-V AUG 2017 Invoice: 17-024-O-OCT 2017 DEPARTMENT OF WATER RESOURCES	560,903.00 79,550.00 631.00	641,084.00
9/19/17	30651	2020N 1020SC	Invoice: US0131862029 ERNST & YOUNG U.S. LLP	2,848.00	2,848.00
9/19/17	30652	2020SC 1020SC	Invoice: 4228 EYASCO, INC.	27,429.59	27,429.59
9/19/17	30653	2020SC 1020SC	Invoice: CAVAC57499 FASTENAL COMPANY	3.40	3.40
9/19/17	30654	2020SC 1020SC	Invoice: 87340 GHD, INC.	1,118.00	1,118.00
9/19/17	30655	2020SC 1020SC	Invoice: 2017-48 IN COMMUNICATIONS	3,808.24	3,808.24

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9/19/17	30656	2020SC	Invoice: SEP 2017 EXEC MEET	100.00	
		2020SC	Invoice: SEP 2017 BOD MTG	100.00	
		1020SC	JOHN D. KLUGE		200.00
9/19/17	30657	2020SC	Invoice: 154800	19,126.25	
		1020SC	LSA ASSOCIATES, INC.		19,126.25
9/19/17	30658	2020SC	Invoice: 33155	2,106.50	
		1020SC	LUHDORFF & SCALMANINI		2,106.50
9/19/17	30659	2020SC	Invoice: SEP 2017 LEGIS MTG	100.00	
		1020SC	ELIZABETH PATTERSON		100.00
9/19/17	30660	2020SC	Invoice: 41528472	239.18	
		1020SC	RECOLOGY VACAVILLE SOLANO		239.18
9/19/17	30661	2020SC	Invoice: 7441	70.00	
		1020SC	REGIONAL GOVERNMENT SERVICES		70.00
9/19/17	30662	2020SC	Invoice: 1371245	1,467.26	
		2020SC	Invoice: 1371244	1,536.28	
		1020SC	MT. DIABLO RESOURCE RECOVERY		3,003.54
9/19/17	30663	2020SC	Invoice: 3776	741.97	
		1020SC	SIGN ANATOMY		741.97
9/19/17	30664	2020U	Invoice: AUG 2017	621.65	
		1020SC	SOLANO COUNTY FLEET MANAGEMENT		621.65
9/19/17	30665	2020SC	Invoice: SEP 2017 BOD MTG	100.00	
		1020SC	JAMES SPERING		100.00
9/19/17	30666	2020SC	Invoice: AUG 2017	8,045.84	
		1020SC	SUSTAINABLE SOLANO		8,045.84
9/19/17	30667	2020SC	Invoice: BAWMRP# 006	13,806.00	
		1020SC	THINKING GREEN CONSULTANTS		13,806.00
9/19/17	30668	2020U	Invoice: MELISSA EDWARDS	960.00	
		1020SC	MELISSA EDWARDS		960.00
9/19/17	30669	2020U	Invoice: ERIC FLICK	903.00	
		1020SC	ERIC FLICK		903.00
9/19/17	30670	2020U	Invoice: KENNETH HALL	248.00	
		1020SC	KENNETH HALL		248.00
9/19/17	30671	2020U	Invoice: SCOTT REEP	1,500.00	
		1020SC	SCOTT REEP		1,500.00
9/19/17	30672	2020SC	Invoice: SEP 2017 BOD MTG	100.00	
		1020SC	JOHN VASQUEZ		100.00
9/19/17	30673	2020SC	Invoice: 35408	200.00	
		1020SC	VISION TECHNOLOGY SOLUTIONS, LLC DBC		200.00
9/19/17	30674	2020SC	Invoice: SEP 2017 BOD MTG	132.10	

SOLANO COUNTY WATER AGENCY
Cash Disbursements Journal
For the Period From Sep 1, 2017 to Sep 30, 2017

Filter Criteria includes: Report order is by Date. Report is printed in Detail Format.

Date	Check #	Account ID	Line Description	Debit Amount	Credit Amount
		1020SC	ROBERT MCCONNELL		132.10
9/23/17	EFT	2024AC	EMPLOYEE LIABILITIES	16,880.70	
			PPE 09.23.17		
		6012AC	EMPLOYER LIABILITIES	2,710.33	
			PPE 09.23.17		
		1020SC	PAYROLL TAXES		19,591.03
9/25/17	10168	2020WC	Invoice: 17-08-3868	1,181.25	
		1020SC	MBK ENGINEERS		1,181.25
9/25/17	30675	2020SC	Invoice: BA5158	1,916.67	
		2020SC	Invoice: BA5160	1,733.33	
		2020SC	Invoice: BA5159	1,250.00	
		1020SC	BLANKINSHIP & ASSOCIATES, INC.		4,900.00
9/25/17	30676	2020SC	Invoice: 000010229263	164.24	
		2020SC	Invoice: 000010229218	251.52	
		1020SC	CALNET3		415.76
9/25/17	30677	2020N	Invoice: SINGLE CANOE	829.92	
		1020SC	CLAVEY PADDLESPORTS		829.92
9/25/17	30678	2020SC	Invoice: 2728	1,247.93	
		1020SC	ESEF APPAREL INC.		1,247.93
9/25/17	30679	2020SC	Invoice: 19478419	375.00	
		1020SC	EXPRESS EMPLOYEMENT PROFESSIONALS		375.00
9/25/17	30680	2020SC	Invoice: 5-931-30442	346.34	
		1020SC	FEDEX EXPRESS		346.34
9/25/17	30681	2020N	Invoice: 0917-1	600.00	
		1020SC	JEFFREY J JANIK		600.00
9/25/17	30682	2020SC	Invoice: 8/11/17-9/11/17	1,493.24	
		1020SC	PACIFIC GAS & ELECTRIC CO,		1,493.24
9/25/17	30683	2020SC	Invoice: 7404	6,027.95	
		1020SC	REGIONAL GOVERNMENT SERVICES		6,027.95
9/25/17	30684	2020SC	Invoice: 40998	48.19	
		2020SC	Invoice: 40985	18.17	
		1020SC	SHELLWORTH CHEVROLET		66.36
9/25/17	30685	2020SC	Invoice: 006492990046 OCT	1,490.77	
		1020SC	STANDARD INSURANCE COMPANY		1,490.77
9/25/17	30686	2020SC	Invoice: 1880067821	81.42	
		2020SC	Invoice: 1881726091	8.61	
		2020SC	Invoice: 1881770741	88.65	
		2020SC	Invoice: 1883682151	25.39	
		2020SC	Invoice: 1887819491	35.48	
		2020SC	Invoice: 1888517091	40.85	
		2020SC	Invoice: 1889628251	25.39	
		1020SC	STAPLES		305.79
9/25/17	30687	2020SC	Invoice: 19604	469.44	
		2020SC	Invoice: 19606	1,134.04	
		1020SC	SUMMERS ENGINEERING, INC.		1,603.48
9/25/17	30688	2020SC	Invoice: 20902-41	61,751.59	
		1020SC	THE REGENTS OF THE UNIVERSITY OF CA		61,751.59

SOLANO COUNTY WATER AGENCY

Cash Disbursements Journal

For the Period From Sep 1, 2017 to Sep 30, 2017

Filter Criteria includes: Report order is by Date. Report is printed in Detail Format.

Date	Check #	Account ID	Line Description	Debit Amount	Credit Amount
			UNIVERSITY OF CA		
9/25/17	30689	2020U 1020SC	Invoice: JUNE 2017 CRAIG D. THOMSEN	3,220.10	3,220.10
9/25/17	30690	2020SC 1020SC	Invoice: 2017 RAV 4 TOYOTA VALLEJO	29,634.88	29,634.88
9/25/17	30691	2020SC 1020SC	Invoice: PERRY CHURCHILL PERRY CHURCHILL	1,000.00	1,000.00
9/25/17	30692	2020SC 1020SC	Invoice: JAMES MATTHIS JAMES MATTHIS	722.00	722.00
9/25/17	30693	2020SC 1020SC	Invoice: JOHN PIRRUNG JOHN PIRRUNG	530.00	530.00
9/25/17	BARICH AUG 2017	6230SC 6090AC 6090AC 6230SC 1020SC	LOWES - SUPPLIES ENGINEERS BD - LICENSE RENEWAL OPC CA ENGINEERS BOARD - LICENSE RENWAL CONVENIENCE FEE CA SURVEY INET - SUPPLIES BANK OF THE WEST	10.07 115.00 1.00 351.91	477.98
9/25/17	CUETARA AUG 2017	6144SC 6144AC 6144AC 6144AC 6310AC 6144SC 6144AC 6310AC 6310AC 1020SC	LOWES - SUPPLIES AMAZON - AMAZON BATTERY BILL CHEVRON - FUEL LOWES - SUPPLIES STAPLES - SUPPLIES CHEVRON - FUEL CHEVRON - FUEL BANK OF THE WEST	100.40 8.80 65.96 397.58 73.52 99.31 74.58 73.63 60.58	954.36
9/25/17	JONES AUG 2017	6181SC 6181SC 6230SC 6183SC 6199SC 6230SC 1020SC	EASTERN SURPLUS - HMMWV PARTS CARQUEST - CV BOOT KIT BFC - PARTS YOLO COUNTY LANDFILL - DUMP SPORTSMANS WAREHOUSE - SUPPLIES BERRYESSA SPORTING GOODS - PROPANE BANK OF THE WEST	478.00 20.94 105.63 20.00 173.18 23.62	821.37
9/25/17	LEE AUG 2017	6360AC 6040AC 6360AC 6360AC 6360AC 6410AC 1020SC	GRA - MEMBERSHIP NAPOLI PIZZA GRA - 2017 CONF REGISTRATION GRA - REGISTRATION FOR SUSTANABLE GROUNDWATER ACT GRA - 2017 GROUNDWATER LAW WORKSHOP ADOBE CREATIVE CLOUD - SOFTWARE FEE BANK OF THE WEST	100.00 119.00 450.00 100.00 315.00 49.99	1,133.99
9/25/17	PATE AUG 2017	6410AC 6410AC 6330AC	PADMACPAWCOM - SOFTWARE PADMACPAWCOM - SOFTWARE ACE PARKING	75.53 62.97 20.00	

SOLANO COUNTY WATER AGENCY
Cash Disbursements Journal
For the Period From Sep 1, 2017 to Sep 30, 2017

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Date	Check #	Account ID	Line Description	Debit Amount	Credit Amount
		6330AC	CITY OF SAC PARKING	10.50	
		6041AC	DRI PLANTRONICS - SUPPLIES	69.85	
		1020SC	BANK OF THE WEST		238.85
9/25/17	RABIDOUX AUG 2017	6161SC	HACH COMPANY - SUPPLIES	233.06	
		6161SC	HACH COMPANY - SUPPLIES	187.54	
		1020SC	BANK OF THE WEST		420.60
9/25/17	SANFORD AUGUST 2017	6330AC	CITYOFSAC PARKING	12.00	
		6040AC	CHINA HOUSE - MEETING WITH SKIP THOMSON	37.51	
		1020SC	BANK OF THE WEST		49.51
9/25/17	SNYDER AUG 2017	6300AC	LUCKY - WATER FOR SILVERADO	3.57	
		6300AC	OREILLY AUTO - FILTERS FOR SILVERADO	189.36	
		6300AC	AGILIS LINXUP - AUTO TRACKER	183.92	
		6090AC	CA DEPT OF PEST REGULATION - PESTICIDE LICENSE RENEWAL	120.00	
		6042AC	WALMART - SUPPLIES	40.20	
		6310AC	QUICKSTOP - FUEL	37.04	
		6310AC	QUICKSTOP - FUEL	36.36	
		6300AC	OREILLY AUTO - FUEL	16.13	
		6041AC	CAP FOR EXPO		
		6300AC	STAPLES - CHAIR	86.09	
		6300AC	LOWES - HITCH BALL	38.70	
		6230SC	LOWES - SUPPLIES	77.44	
		6310AC	CHEVRON - FUEL	60.38	
		1020SC	BANK OF THE WEST		889.19
9/25/17	WILLINGMYRE AUG 2017	6360AC	CSDA - FINANCIAL MGMT CLASS - MARCIE	225.00	
		6360AC	CSDA - FINANCIAL MGMT & HR CLASS - SANDRA	450.00	
		6360AC	CSDA - POLICY HANDBOOK	243.56	
		1020SC	BANK OF THE WEST		918.56
9/29/17	EFT	2020SC	Invoice: 2017092701	244.28	
		1020SC	PAYCHEX, INC.		244.28
9/29/17	EFT	2020SC	Invoice: PPE 09.23.17	8,264.91	
		1020SC	CALPERS		8,264.91
9/29/17	EFT	2020SC	Invoice: SIP PPE 09.23.17	4,442.97	
		1020SC	CALPERS		4,442.97
9/29/17	EFT	2020SC	Invoice: PEPPRA PPE 09.23.17	1,207.36	
		1020SC	CALPERS		1,207.36
	Total			<u>1,101,183.48</u>	<u>1,101,183.48</u>

**ACTION OF
SOLANO COUNTY WATER AGENCY**

DATE: October 12, 2017

SUBJECT: Financial Report Approval

RECOMMENDATION:

Approve the quarterly Income Statement and Balance Sheet for the period ending September 30, 2017.

FINANCIAL IMPACT:

All revenues and expenditures are reported within previously approved budget amounts.

BACKGROUND:

The Water Agency auditor has recommended that the Board of Directors receive quarterly financial reports. Attached are the Income Statement and the Balance Sheet of the Water Agency for the period ending September 30, 2017. Additional backup information is available upon request.

Recommended: _____


Roland Sanford, General Manager

<input type="checkbox"/> Approved as recommended	<input type="checkbox"/> Other (see below)	<input type="checkbox"/> Continued on next page
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Modification to Recommendation and/or other actions:

I, Roland Sanford, General Manager and Secretary to the Solano County Water Agency, do hereby certify that the foregoing action was regularly introduced, passed, and adopted by said Board of Directors at a regular meeting thereof held on October 12, 2017 by the following vote.

Ayes:

Noes:

Abstain:

Absent:

Roland Sanford
General Manager & Secretary to the
Solano County Water Agency

SOLANO COUNTY WATER AGENCY
Balance Sheet
September 30, 2017

ASSETS						
Current Assets						
			ADMIN/SP/W	SWP(N)	U	GV
1000SC	PERSHING	\$ 6,680.48	\$ 6,680.48			
1010WC	MONEY MGMT - WATERMASTER	4,998.43	4,998.43			
1020G	CHECKING	836,484.24	(193,723.30)	460,510.08	208,197.86	361,499.60
1030N	LAIF -	7,656,790.89	3,967,057.84	2,559,131.62	1,130,601.43	
1040N	CAMP - SWP	17,366,563.48	5,605,935.38	8,156,957.38	3,603,670.72	
1050N	CERTIFICATES OF DEPOSIT - SWP	5,182,649.40	2,679,500.42	1,736,138.53	767,010.45	
1210N	ACCOUNTS RECEIVABLE-SWP	1,399,946.76	1,100,885.16	299,061.60		
1225AC	RETENTION RECEIVABLE	50,678.84	50,678.84			
1400AC	PREPAID	742.48	742.48			
1415AC	INVENTORY-WATER CONSERVATION S	20,351.05	20,351.05			
	Total Current Assets	\$ 32,525,886.05	\$ 13,243,106.78	\$ 13,211,799.21	\$ 5,709,480.46	\$ 361,499.60
Other Assets						
1300SC	NOTE RECEIVABLE	285,268.05	285,268.05			
1910SC	GREEN VALLEY LOAN	200,000.00	200,000.00			
	Total Other Assets	485,268.05	485,268.05	0.00	0.00	0.00
	Total Assets	\$ 33,011,154.10	\$ 13,728,374.83	\$ 13,211,799.21	\$ 5,709,480.46	\$ 361,499.60
LIABILITIES AND CAPITAL						
Current Liabilities						
			ADMIN/SP/W	SWP(N)	U	GV
2010N	UNEARNED INCOME-SWP	535,448.71	104,948.71	430,500.00		
2020N	ACCOUNTS PAYABLE-SWP	319,712.25	202,661.63	119,749.13	(13,426.33)	10,727.82
2023AC	EMPLOYEE BENEFITS PAYABLE	8,364.64	8,364.64			
2025SC	SALES TAX PAYABLE	1,439.71	1,439.71			
2027AC	ACCOUNTS PAYABLE-GARNISHMENT	0.00	0.00			
2100SC	BENICIA PREFUNDED LAWN REBATES	28,375.75	28,375.75			
2110SC	WESTSIDE IRWMP PREFUNDED ADMIN	185,454.95	185,454.95			
2111SC	GSA PREFUNDED ADMIN COSTS	66,000.00	66,000.00			
2115AC	SHARP COPIER CONTRACT	3,430.63	3,430.63			
	Total Current Liabilities	\$ 1,148,226.64	\$ 600,676.02	\$ 550,249.13	(\$ 13,426.33)	\$ 10,727.82
Long-Term Liabilities						
2310G	SOLANO PROJECT LOAN	200,000.00				200,000.00
2330SC	DEFERRED OUTFLOW OF CASH	373,138.25	373,138.25			
	Total Long-Term Liabilities	\$ 573,138.25	\$ 373,138.25	\$ -	\$ -	\$ 200,000.00
	Total Liabilities	1,721,364.89	973,814.27	550,249.13	(13,426.33)	210,727.82
Capital						
3150SC	OTHER FLD CTRL CAPITAL PROJ.	200,000.00	200,000.00			
3155SC	OTHER CAPITAL PROJ/EMERG RESER	1,000,000.00	1,000,000.00			
3200N	SWP OPERATING RESERVE	7,304,430.00		7,304,430.00		
3200SC	DESIGNATED REHAB & BETTERMENT	2,000,000.00	2,000,000.00			
3200U	ULATIS OPERATING RESERVE	486,654.44			486,654.44	
3250G	GV OPERATING RESERVE	70,292.30				70,292.30
3250N	DESIGNATED SWP FACILITIES RESE	6,908,819.30		6,908,819.30		
3250SC	SP FUTURE REPLACEMENT CAPITAL	14,079,425.93	14,079,425.93			
3250U	ULATIS OPERATING RESERVE	348,259.00			348,259.00	
3255U	ULATIS FCP CAPITAL RESERVE	4,428,092.26			4,428,092.26	
3350SC	DESIGNATED OPERATING RESERVES	4,451,750.70	4,451,750.70			
	Unallocated Retained Earnings	(3,438,762.72)	(5,812,076.73)	1,816,287.30	476,547.23	80,479.48
	Net Income	(6,549,172.00)	(3,164,539.34)	(3,367,986.52)	(16,646.14)	0.00

SOLANO COUNTY WATER AGENCY
Balance Sheet
September 30, 2017

Total Capital	<u>31,289,789.21</u>	<u>12,754,560.56</u>	<u>12,661,550.08</u>	<u>5,722,906.79</u>	<u>150,771.78</u>
Total Liabilities & Capital	<u>\$ 33,011,154.10</u>	<u>\$ 13,728,374.83</u>	<u>\$ 13,211,799.21</u>	<u>\$ 5,709,480.46</u>	<u>\$ 361,499.60</u>

SOLANO COUNTY WATER AGENCY
Year to Date Income Statement
Compared with Budget and Last Year
For the Three Months Ending September 30, 2017

	Current Year Actual	Current Year Budget	Variance Amount	Variance Percent	Last Year Actual	Change from Last Year	Percent Change
Revenues							
SECURED	\$ 0.00	\$ 73,757.00	(73,757.00)	(100.00)	\$ 0.00	0.00	0.00
SECURED	0.00	12,400,000.00	(12,400,000.00)	(100.00)	0.00	0.00	0.00
SECURED	0.00	6,941,137.00	(6,941,137.00)	(100.00)	0.00	0.00	0.00
SECURED	0.00	917,311.00	(917,311.00)	(100.00)	0.00	0.00	0.00
UNSECURED	0.00	5,462.00	(5,462.00)	(100.00)	0.00	0.00	0.00
UNSECURED	0.00	338,000.00	(338,000.00)	(100.00)	0.00	0.00	0.00
UNSECURED	0.00	382,715.00	(382,715.00)	(100.00)	0.00	0.00	0.00
UNSECURED	0.00	54,478.00	(54,478.00)	(100.00)	0.00	0.00	0.00
CURRENT SUPPLEMENTAL	0.00	2,703.00	(2,703.00)	(100.00)	0.00	0.00	0.00
CURRENT SUPPLEMENTAL	0.00	220,000.00	(220,000.00)	(100.00)	0.00	0.00	0.00
CURRENT SUPPLEMENTAL	0.00	130,000.00	(130,000.00)	(100.00)	0.00	0.00	0.00
CURRENT SUPPLEMENTAL	0.00	24,000.00	(24,000.00)	(100.00)	0.00	0.00	0.00
WATER SALES	0.00	1,560,101.00	(1,560,101.00)	(100.00)	0.00	0.00	0.00
WATER SALES	0.00	65,000.00	(65,000.00)	(100.00)	0.00	0.00	0.00
COST OF POWER TO PUMP NBA	0.00	50,000.00	(50,000.00)	(100.00)	0.00	0.00	0.00
CONVEYANCE SETTLEMENT	0.00	100,000.00	(100,000.00)	(100.00)	0.00	0.00	0.00
NAPA MAKE WHOLE	0.00	312,000.00	(312,000.00)	(100.00)	0.00	0.00	0.00
SWP ADJUSTMENTS	3,034.00	525,000.00	(521,966.00)	(99.42)	38,699.00	(35,665.00)	(92.16)
EQUIPMENT DISTRIBUTION REIM	0.00	100,000.00	(100,000.00)	(100.00)	4,688.00	(4,688.00)	(100.00)
INTEREST - MONEY MGMT	0.08	5.00	(4.92)	(98.40)	0.97	(0.89)	(91.75)
INTEREST - CHECKING	64.08	200.00	(135.92)	(67.96)	52.87	11.21	21.20
INTEREST - LAIF - SWP	5,981.29	14,000.00	(8,018.71)	(57.28)	2,976.45	3,004.84	100.95
INTEREST - LAIF - SP	9,323.78	25,000.00	(15,676.22)	(62.70)	6,115.30	3,208.48	52.47
INTEREST - LAIF - ULATIS	2,286.96	5,000.00	(2,713.04)	(54.26)	1,233.98	1,052.98	85.33
INTEREST - CAMP - SWP	5,928.57	30,000.00	(24,071.43)	(80.24)	9,009.79	(3,081.22)	(34.20)
INTEREST - CAMP - SP	9,241.59	50,000.00	(40,758.41)	(81.52)	10,459.43	(1,217.84)	(11.64)
INTEREST - CAMP - ULATIS	2,266.81	12,000.00	(9,733.19)	(81.11)	3,570.38	(1,303.57)	(36.51)
INTEREST - OTHER	0.00	14,925.00	(14,925.00)	(100.00)	0.00	0.00	0.00
INTEREST - INVESTMENTS	2,234.83	12,000.00	(9,765.17)	(81.38)	2,450.60	(215.77)	(8.80)
INTEREST - INVESTMENTS	3,483.71	26,000.00	(22,516.29)	(86.60)	3,500.88	(17.17)	(0.49)
INTEREST - INVESTMENTS	854.49	6,500.00	(5,645.51)	(86.85)	948.16	(93.67)	(9.88)
HOMEOWNER RELIEF	0.00	1,166.00	(1,166.00)	(100.00)	0.00	0.00	0.00
HOMEOWNER RELIEF	0.00	70,000.00	(70,000.00)	(100.00)	0.00	0.00	0.00
HOMEOWNER RELIEF	0.00	70,865.00	(70,865.00)	(100.00)	0.00	0.00	0.00
HOMEOWNER RELIEF	0.00	10,395.00	(10,395.00)	(100.00)	0.00	0.00	0.00
REDEVELOPMENT - DIX/RV	0.00	36,796.00	(36,796.00)	(100.00)	0.00	0.00	0.00
REDEVELOP - VACAVILLE	0.00	437,764.00	(437,764.00)	(100.00)	4,217.82	(4,217.82)	(100.00)
REDEVELOP - VACAVILLE	0.00	251,042.00	(251,042.00)	(100.00)	2,417.24	(2,417.24)	(100.00)
REDEVELOP - FAIRFIELD	0.00	46,619.00	(46,619.00)	(100.00)	1,544.22	(1,544.22)	(100.00)
REDEVELOP - FAIRFIELD	0.00	606,438.00	(606,438.00)	(100.00)	8,229.78	(8,229.78)	(100.00)
REDEVELOP - SUISUN CITY	0.00	249,280.00	(249,280.00)	(100.00)	0.00	0.00	0.00
REDEVELOP - N. TEXAS	0.00	33,032.00	(33,032.00)	(100.00)	0.00	0.00	0.00
BOATING AND WATERWAYS	0.00	155,000.00	(155,000.00)	(100.00)	0.00	0.00	0.00
SOLANO CO OIL REIMBURSEMEN	0.00	24,000.00	(24,000.00)	(100.00)	0.00	0.00	0.00
USFWS (FISH & WILDLIFE)	0.00	38,250.00	(38,250.00)	(100.00)	0.00	0.00	0.00
MISC INCOME	8,620.36	35,000.00	(26,379.64)	(75.37)	8,620.37	(0.01)	0.00
MISCELLANEOUS INCOME	8,620.37	0.00	8,620.37	0.00	8,620.36	0.01	0.00
MISC INCOME	11.16	0.00	11.16	0.00	0.00	11.16	0.00

SOLANO COUNTY WATER AGENCY
Year to Date Income Statement
Compared with Budget and Last Year
For the Three Months Ending September 30, 2017

	Current Year Actual	Current Year Budget	Variance Amount	Variance Percent	Last Year Actual	Change from Last Year	Percent Change
GREENHOUSE REVENUES	0.00	25,000.00	(25,000.00)	(100.00)	0.00	0.00	0.00
O&M - OTHER AGENCIES	0.00	5,000.00	(5,000.00)	(100.00)	0.00	0.00	0.00
OVERHEAD DISTRIBUTION REIMB	291,224.98	3,590,730.00	(3,299,505.02)	(91.89)	662,883.20	(371,658.22)	(56.07)
WATERMASTER INCOME	49.20	4,600.00	(4,550.80)	(98.93)	39.00	10.20	26.15
WATER CONSERVATION REIMBU	0.00	170,000.00	(170,000.00)	(100.00)	0.00	0.00	0.00
BAY AREA IRWMP GRANT	0.00	400,000.00	(400,000.00)	(100.00)	137,601.23	(137,601.23)	(100.00)
WESTSIDE IRWMP GRANT	0.00	660,000.00	(660,000.00)	(100.00)	0.00	0.00	0.00
LPCCC SERVICES	0.00	790,000.00	(790,000.00)	(100.00)	0.00	0.00	0.00
LPCCC EQUIPMENT RENTAL FEE	0.00	30,000.00	(30,000.00)	(100.00)	0.00	0.00	0.00
LPCCC - RIVER PARKWAY V	0.00	600,000.00	(600,000.00)	(100.00)	0.00	0.00	0.00
LPCCC-PROP I	0.00	300,000.00	(300,000.00)	(100.00)	0.00	0.00	0.00
LPCCC-COASTAL CONSERVANCY	0.00	50,000.00	(50,000.00)	(100.00)	0.00	0.00	0.00
LPCCC-IRWM	0.00	150,000.00	(150,000.00)	(100.00)	0.00	0.00	0.00
Total Revenues	353,226.26	33,238,271.00	(32,885,044.74)	(98.94)	917,879.03	(564,652.77)	(61.52)
Cost of Sales							
Total Cost of Sales	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gross Profit	353,226.26	33,238,271.00	(32,885,044.74)	(98.94)	917,879.03	(564,652.77)	(61.52)
Expenses							
CAPITAL EXPENDITURES	29,634.88	161,100.00	(131,465.12)	(81.60)	0.00	29,634.88	0.00
CAPITAL EXPENDITURES	0.00	40,000.00	(40,000.00)	(100.00)	3,464,485.59	(3,464,485.59)	(100.00)
CAPITAL EXPENDITURES	329.59	170,000.00	(169,670.41)	(99.81)	3,452,785.52	(3,452,455.93)	(99.99)
CAPITAL EXPENDITURES	0.00	20,500.00	(20,500.00)	(100.00)	0.00	0.00	0.00
GROSS SALARIES	517,414.02	2,121,828.00	(1,604,413.98)	(75.61)	461,903.22	55,510.80	12.02
PERS RETIREMENT	113,658.84	302,709.00	(189,050.16)	(62.45)	100,165.96	13,492.88	13.47
PAYROLL TAXES	27,691.52	103,397.00	(75,705.48)	(73.22)	26,922.41	769.11	2.86
EMPLOYEE BENEFITS	48,834.48	1,002,249.00	(953,414.52)	(95.13)	51,717.93	(2,883.45)	(5.58)
TELEPHONE	3,441.38	25,300.00	(21,858.62)	(86.40)	6,603.32	(3,161.94)	(47.88)
OFFICE EXPENSE	4,431.53	29,100.00	(24,668.47)	(84.77)	9,365.67	(4,934.14)	(52.68)
OFFICE EQUIPMENT	3,458.43	29,250.00	(25,791.57)	(88.18)	7,715.31	(4,256.88)	(55.17)
SAFETY TRAINING & EQUIPMENT	2,419.20	5,500.00	(3,080.80)	(56.01)	2,064.10	355.10	17.20
OFFICE HELP - TEMPORARY	0.00	10,000.00	(10,000.00)	(100.00)	0.00	0.00	0.00
POSTAGE	66.91	6,300.00	(6,233.09)	(98.94)	1,977.28	(1,910.37)	(96.62)
SID OFFICE EXPENSE	4,047.57	48,575.00	(44,527.43)	(91.67)	6,145.50	(2,097.93)	(34.14)
MEMBERSHIPS	20,210.47	48,745.00	(28,534.53)	(58.54)	21,484.00	(1,273.53)	(5.93)
SWC DUES	70,396.00	118,700.00	(48,304.00)	(40.69)	111,816.00	(41,420.00)	(37.04)
PPTY TAX ADMIN FEE	0.00	1,200.00	(1,200.00)	(100.00)	0.00	0.00	0.00
PPTY TAX ADMIN FEE	0.00	100,000.00	(100,000.00)	(100.00)	0.00	0.00	0.00
PPTY TAX ADMIN FEE	0.00	15,000.00	(15,000.00)	(100.00)	0.00	0.00	0.00
PETERSEN RANCH EXPENSES	5,146.44	55,000.00	(49,853.56)	(90.64)	10,538.71	(5,392.27)	(51.17)
PETERSEN RANCH EXPENSES	5,146.45	55,000.00	(49,853.55)	(90.64)	10,565.08	(5,418.63)	(51.29)
PS - PAYROLL SERVICES	1,658.43	8,700.00	(7,041.57)	(80.94)	1,786.15	(127.72)	(7.15)
PS - COMPUTER SERVICES	97,435.72	411,700.00	(314,264.28)	(76.33)	102,860.72	(5,425.00)	(5.27)
TALENT DECISION MONITORING	14,550.00	14,000.00	550.00	3.93	20,350.00	(5,800.00)	(28.50)

For Management Purposes Only

SOLANO COUNTY WATER AGENCY
Year to Date Income Statement
Compared with Budget and Last Year
For the Three Months Ending September 30, 2017

	Current Year Actual	Current Year Budget	Variance Amount	Variance Percent	Last Year Actual	Change from Last Year	Percent Change
GOVERNMENTAL ADVOCACY	26,055.80	105,000.00	(78,944.20)	(75.18)	25,854.00	201.80	0.78
GOVERNMENTAL ADVOCACY	3,500.00	90,000.00	(86,500.00)	(96.11)	0.00	3,500.00	0.00
LPCCC - VEGETATION	146.82	14,007.00	(13,860.18)	(98.95)	21,507.74	(21,360.92)	(99.32)
CONSULTANTS	75,111.14	255,000.00	(179,888.86)	(70.54)	95,510.82	(20,399.68)	(21.36)
CONSULTANTS	0.00	2,000.00	(2,000.00)	(100.00)	0.00	0.00	0.00
CONSULTANTS	10,254.17	41,000.00	(30,745.83)	(74.99)	308,707.96	(298,453.79)	(96.68)
CONSULTANTS	43,260.51	1,683,405.00	(1,640,144.49)	(97.43)	13,522.20	29,738.31	219.92
CONSULTANTS	0.00	10,000.00	(10,000.00)	(100.00)	0.00	0.00	0.00
HYDROLOGY STATIONS	3,094.86	29,000.00	(25,905.14)	(89.33)	3,714.98	(620.12)	(16.69)
HYDROLOGY STATIONS	5,818.51	18,500.00	(12,681.49)	(68.55)	3,187.21	2,631.30	82.56
HYDROLOGY STATIONS	3,784.77	70,000.00	(66,215.23)	(94.59)	13,006.87	(9,222.10)	(70.90)
HYDROLOGY STATIONS	0.00	3,000.00	(3,000.00)	(100.00)	81.47	(81.47)	(100.00)
LPCCC - WILDLIFE	0.00	77,036.00	(77,036.00)	(100.00)	0.00	0.00	0.00
LPCCC - FISHERIES	65,075.73	77,036.00	(11,960.27)	(15.53)	0.00	65,075.73	0.00
USFWS (FISH & WILDLIFE)	0.00	76,500.00	(76,500.00)	(100.00)	0.00	0.00	0.00
WATERSHED PROGRAM	7,908.27	209,500.00	(201,591.73)	(96.23)	5,158.33	2,749.94	53.31
SOLANO PROJECT MONITORING	3,125.60	30,000.00	(26,874.40)	(89.58)	558.00	2,567.60	460.14
SOLANO PROJECT INVASIVES	0.00	210,913.00	(210,913.00)	(100.00)	0.00	0.00	0.00
Yolo Bypass/Cache Slough Progr	0.00	300,000.00	(300,000.00)	(100.00)	0.00	0.00	0.00
UPPER PUTAH CREEK MGMT	18,272.78	242,500.00	(224,227.22)	(92.46)	30,957.69	(12,684.91)	(40.97)
NBA RELIABILITY PROGRAM	375.00	241,500.00	(241,125.00)	(99.84)	0.00	375.00	0.00
INTER-DAM REACH MANAGEMEN	0.00	75,000.00	(75,000.00)	(100.00)	0.00	0.00	0.00
MBK	1,181.25	35,000.00	(33,818.75)	(96.63)	1,456.50	(275.25)	(18.90)
LPCCC SERVICES	20,063.12	790,000.00	(769,936.88)	(97.46)	2,304.63	17,758.49	770.56
LPCCC EQUIPMENT	17,424.60	50,000.00	(32,575.40)	(65.15)	19,474.18	(2,049.58)	(10.52)
LPCCC NURSERY	9,936.11	30,000.00	(20,063.89)	(66.88)	14,946.98	(5,010.87)	(33.52)
LPCCC-PROP 1	32,691.87	300,000.00	(267,308.13)	(89.10)	0.00	32,691.87	0.00
LPCCC-CA RIVER PRKWY V	18,756.80	600,000.00	(581,243.20)	(96.87)	30,225.29	(11,468.49)	(37.94)
LPCCC-COASTAL CONSERVANCY	0.00	50,000.00	(50,000.00)	(100.00)	0.00	0.00	0.00
LPCCC-IRWM	13,865.29	150,000.00	(136,134.71)	(90.76)	2,993.77	10,871.52	363.14
LPCCC MISC. SUPPLIES	8,463.56	22,000.00	(13,536.44)	(61.53)	4,439.91	4,023.65	90.62
BOARD EXPENSES	5,297.25	33,000.00	(27,702.75)	(83.95)	3,212.76	2,084.49	64.88
FIELD SUPPLIES	8,294.25	55,000.00	(46,705.75)	(84.92)	22,359.56	(14,065.31)	(62.91)
MISC WTRMASTER EXP	20.00	240.00	(220.00)	(91.67)	20.00	0.00	0.00
HCP PLANNING	56,044.30	3,462,000.00	(3,405,955.70)	(98.38)	107,497.39	(51,453.09)	(47.86)
CAR MAINTENANCE	3,067.54	27,000.00	(23,932.46)	(88.64)	4,459.28	(1,391.74)	(31.21)
FUEL	6,518.05	26,000.00	(19,481.95)	(74.93)	4,573.09	1,944.96	42.53
GARAGE SERVICES	1,029.99	10,000.00	(8,970.01)	(89.70)	1,092.45	(62.46)	(5.72)
TRAVEL	2,287.61	5,000.00	(2,712.39)	(54.25)	808.47	1,479.14	182.96
EMPLOYEE REIMBURSEMENTS	4,896.52	12,000.00	(7,103.48)	(59.20)	4,521.75	374.77	8.29
INSURANCE	14,426.58	58,150.00	(43,723.42)	(75.19)	13,696.74	729.84	5.33
EDUCATION & TRAINING	2,762.56	20,000.00	(17,237.44)	(86.19)	2,774.68	(12.12)	(0.44)
COMP SOFTWARE/EQUIP	2,852.48	103,308.00	(100,455.52)	(97.24)	13,185.18	(10,332.70)	(78.37)
SCWA Water Mgt Planning	0.00	250,500.00	(250,500.00)	(100.00)	0.00	0.00	0.00
WATER CONSERVATION	155,380.49	1,269,000.00	(1,113,619.51)	(87.76)	164,297.08	(8,916.59)	(5.43)
WATER CONSERVATION	0.00	604,000.00	(604,000.00)	(100.00)	0.00	0.00	0.00
MISC. WATER CONSERVATION GR	39,297.00	0.00	39,297.00	0.00	0.00	39,297.00	0.00
MELLON LEVEE	0.00	15,000.00	(15,000.00)	(100.00)	0.00	0.00	0.00
PSC MAINTENANCE	97,869.96	1,154,000.00	(1,056,130.04)	(91.52)	89,539.81	8,330.15	9.30

For Management Purposes Only

SOLANO COUNTY WATER AGENCY
Year to Date Income Statement
Compared with Budget and Last Year
For the Three Months Ending September 30, 2017

	Current Year Actual	Current Year Budget	Variance Amount	Variance Percent	Last Year Actual	Change from Last Year	Percent Change
FLOOD CONTROL	126.70	1,862,500.00	(1,862,373.30)	(99.99)	0.00	126.70	0.00
GROUND WATER MANAGEMENT	2,106.50	195,373.00	(193,266.50)	(98.92)	501.08	1,605.42	320.39
PUBLIC EDUCATION	128.40	95,000.00	(94,871.60)	(99.86)	144.47	(16.07)	(11.12)
LABOR	0.00	45,000.00	(45,000.00)	(100.00)	0.00	0.00	0.00
SP OTHER MAINTANENCE	0.00	25,000.00	(25,000.00)	(100.00)	0.00	0.00	0.00
LABOR	0.00	315,000.00	(315,000.00)	(100.00)	48,058.80	(48,058.80)	(100.00)
SP ADMINISTRATION	183,224.00	1,092,000.00	(908,776.00)	(83.22)	152,865.13	30,358.87	19.86
PSC OPERATIONS	44,765.34	322,000.00	(277,234.66)	(86.10)	(15,985.33)	60,750.67	(380.04)
DAM MAINTENANCE	376.97	64,000.00	(63,623.03)	(99.41)	808.99	(432.02)	(53.40)
DAM OPERATIONS	35,507.86	286,500.00	(250,992.14)	(87.61)	28,868.46	6,639.40	23.00
WEED CONTROL	0.00	5,500.00	(5,500.00)	(100.00)	0.00	0.00	0.00
SP PEST MANAGEMENT	28,107.11	90,000.00	(61,892.89)	(68.77)	31,217.67	(3,110.56)	(9.96)
EQUIP - TRANS DEPT	0.00	8,000.00	(8,000.00)	(100.00)	0.00	0.00	0.00
EQUIP - TRANS DEPT	0.00	75,000.00	(75,000.00)	(100.00)	8,625.22	(8,625.22)	(100.00)
SUPPLIES	0.00	1,500.00	(1,500.00)	(100.00)	0.00	0.00	0.00
SUPPLIES	2,710.18	53,000.00	(50,289.82)	(94.89)	5,073.24	(2,363.06)	(46.58)
CONTRACT WORK	12,683.75	15,000.00	(2,316.25)	(15.44)	0.00	12,683.75	0.00
CONTRACT WORK	0.00	40,000.00	(40,000.00)	(100.00)	0.00	0.00	0.00
TRANS DEPT OVERHEAD	0.00	10,000.00	(10,000.00)	(100.00)	0.00	0.00	0.00
TRANS DEPT OVERHEAD	0.00	115,000.00	(115,000.00)	(100.00)	15,378.80	(15,378.80)	(100.00)
REHAB & BETTERMENT	0.00	40,000.00	(40,000.00)	(100.00)	0.00	0.00	0.00
NBA REHAB & BETTERMENT	24,000.00	93,000.00	(69,000.00)	(74.19)	0.00	24,000.00	0.00
REHAB & BETTERMENT	31,655.26	830,000.00	(798,344.74)	(96.19)	8,469.78	23,185.48	273.74
REHAB & BETTERMENT	0.00	20,000.00	(20,000.00)	(100.00)	0.00	0.00	0.00
WATER PURCHASES	4,437,058.00	12,171,955.00	(7,734,897.00)	(63.55)	4,475,864.00	(38,806.00)	(0.87)
USBR ADMINISTRATION	69,800.00	75,000.00	(5,200.00)	(6.93)	0.00	69,800.00	0.00
WATER RIGHTS FEE	0.00	85,000.00	(85,000.00)	(100.00)	0.00	0.00	0.00
NAPA MAKE WHOLE	0.00	312,000.00	(312,000.00)	(100.00)	0.00	0.00	0.00
LABOR COSTS	35,337.27	287,135.00	(251,797.73)	(87.69)	90,803.90	(55,466.63)	(61.08)
LABOR COSTS	1,344.58	29,975.00	(28,630.42)	(95.51)	63.32	1,281.26	2,023.47
LABOR COSTS	17,003.01	437,675.00	(420,671.99)	(96.12)	50,573.32	(33,570.31)	(66.38)
LABOR COSTS	76,917.09	935,985.00	(859,067.91)	(91.78)	227,403.63	(150,486.54)	(66.18)
LABOR COSTS	3,010.99	81,875.00	(78,864.01)	(96.32)	5,789.19	(2,778.20)	(47.99)
INTRA-FUND TRANSFER	(88,899.02)	(660,411.00)	571,511.98	(86.54)	(206,906.92)	118,007.90	(57.03)
OVERHEAD EXPENSES	53,561.75	373,276.00	(319,714.25)	(85.65)	102,450.52	(48,888.77)	(47.72)
OVERHEAD EXPENSES	2,038.02	38,968.00	(36,929.98)	(94.77)	95.30	1,942.72	2,038.53
OVERHEAD EXPENSES	25,771.97	568,978.00	(543,206.03)	(95.47)	59,909.92	(34,137.95)	(56.98)
OVERHEAD EXPENSES	143,089.52	1,390,838.00	(1,247,748.48)	(89.71)	295,288.09	(152,198.57)	(51.54)
OVERHEAD EXPENSES	4,563.85	106,438.00	(101,874.15)	(95.71)	6,649.23	(2,085.38)	(31.36)
CONTINGENCY	0.00	100,000.00	(100,000.00)	(100.00)	0.00	0.00	0.00
CONTINGENCY	0.00	1,000.00	(1,000.00)	(100.00)	0.00	0.00	0.00
CONTINGENCY	0.00	25,000.00	(25,000.00)	(100.00)	0.00	0.00	0.00
CONTINGENCY	0.00	100,000.00	(100,000.00)	(100.00)	0.00	0.00	0.00
CONTINGENCY	0.00	50,000.00	(50,000.00)	(100.00)	0.00	0.00	0.00
Total Expenses	6,904,172.10	40,105,008.00	(33,200,835.90)	(82.78)	14,292,909.05	(7,388,736.95)	(51.70)
Net Income	\$ (6,550,945.84)	\$ (6,866,737.00)	315,791.16	(4.60)	\$ (13,375,030.02)	6,824,084.18	(51.02)

For Management Purposes Only

**ACTION OF
SOLANO COUNTY WATER AGENCY**

DATE: October 12, 2017

SUBJECT: Contract with BryoTechnologies for the PSC Algaecide Study

RECOMMENDATIONS:

Authorize General Manager to execute \$57,428 contract with Bryo Technologies for PSC Algaecide Study.

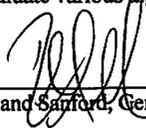
FINANCIAL IMPACT:

Sufficient funding has been included in the FY 2017-2018 Solano Project budget for this contract.

BACKGROUND:

The 33-mile-long Putah South Canal (PSC) conveys Solano Project water to the cities of Vacaville, Fairfield, Suisun City, Benicia and Vallejo, as well as the Solano Irrigation District and Maine Prairie Water District. The PSC was designed with the expectation that canal sediments and associated aquatic vegetation would be sluiced via canal "waste ways" into various creeks traversed by the PSC – such as Suisun Creek – on a routine basis. That practice continued into the 1990's, and while effective, was discontinued due to increasingly stringent State and Federal regulations and more specifically, prohibitions on the discharge of sediment and turbid canal water to receiving streams. Under current practices, no sluicing of sediment and associated aquatic vegetation occurs – sediment and aquatic vegetation is mechanically removed from the canal and stockpiled along the canal right-way or hauled off site. The end result is less frequent sediment removal – since in order to mechanically remove sediment, canal water deliveries must be temporarily suspended - which in turn allows for greater vegetative growth.

If not adequately controlled, aquatic vegetation can clog water intakes and filters, decrease canal conveyance, and in general, significantly increase canal operating costs. Currently, aquatic vegetation is controlled through a combination of mechanical harvesting and periodic application of algaecides. The algaecides presently used are common and readily available, however, their effectiveness not particularly impressive. The purpose of this project is to explore and evaluate various algaecide options, via bench-scale trials.

Recommended: 
Roland Sanford, General Manager

<input type="checkbox"/> Approved as recommended	<input type="checkbox"/> Other (see below)	<input checked="" type="checkbox"/> Continued on next page
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Modification to Recommendation and/or other actions:

I, Roland Sanford, General Manager and Secretary to the Solano County Water Agency, do hereby certify that the foregoing action was regularly introduced, passed, and adopted by said Board of Directors at a regular meeting thereof held on October 12, 2017 by the following vote.

Ayes:

Noes:

Abstain:

Absent:

Roland Sanford
General Manager & Secretary to the
Solano County Water Agency

RELEVANCE TO 2016-2025 SCWA STRATEGIC PLAN:

The proposed algaecide study is consistent with Goal # 2 of the 2016-2025 Strategic Plan (*Water Management Infrastructure: Optimize the use of SCWA managed infrastructure*); Objective D (*Identify and evaluate needs for infrastructure improvement*).

Name of Project: **PSC Algaecide Study**

SOLANO COUNTY WATER AGENCY

AGREEMENT FOR PROFESSIONAL SERVICES

THIS AGREEMENT, effective October 12, 2017 is between SOLANO COUNTY WATER AGENCY, a public agency existing under and by virtue of Chapter 573 of the 1989 statutes of the State of California, hereinafter referred to as "Agency," and **Bryo Technologies LLC**, hereinafter referred to as "Contractor."

The Agency requires services for the **PSC Algaecide Study**; and the Contractor is willing to perform these services pursuant to the terms and conditions set out in this Agreement.

IT IS MUTUALLY AGREED, as follows:

1. SCOPE OF SERVICES

The Agency hereby engages the Contractor, and the Contractor agrees to perform the services for the **PSC Algaecide Study**, as described in Exhibit A, in accordance with the terms of this Agreement and any applicable laws, codes, ordinances, rules or regulations. In case of conflict between any part of this Agreement, this Agreement shall control over any Exhibit.

2. COMPENSATION

Compensation for services shall be as follows: Lump sum payment upon completion of each task specified in Exhibit A, **not to exceed \$57,428** for all work contemplated by this Agreement.

3. METHOD OF PAYMENT

Upon submission of an invoice by the Contractor, and upon approval of the Agency's representative, the Agency shall pay the Contractor monthly in arrears for fees and allowed expenses incurred the prior month, however in no event shall the cumulative total paid pursuant to this agreement exceed the maximum amount provided for in paragraph 2 of this Agreement. Every invoice shall specify hours worked for each task identified in Exhibit A undertaken.

Each invoice shall be accompanied by a spreadsheet showing, by month, costs incurred to date for the project broken down by the Tasks identified in Exhibit A. The spreadsheet shall show, for each task, budget amounts, total expended and remaining amounts. The spreadsheet shall show a subtotal for each fiscal year covered by the contract. Any amendments to the contract shall be listed and incorporated into spreadsheet. An example of a typical spreadsheet shall be provided by the Agency.

4. TIME OF PERFORMANCE

This Agreement shall become effective as of the date it is executed and said services will take place between this date and **June 30, 2018** as directed by the Agency.

5. MODIFICATION AND TERMINATION

This Agreement may be modified or amended only by written instrument signed by the parties hereto, and the Contractor's compensation and time of performance of this Agreement shall be adjusted if they are materially affected by such modification or amendment.

Any change in the scope of the professional services to be done, method of performance, nature of materials or price thereof, or to any other matter materially affecting the performance of nature of the professional services will not be paid for or accepted unless such change, addition or deletion be approved in advance, in writing, by the Agency's General Manager.

This Agreement may be terminated by the Agency at any time, without cause, upon written notification to the Contractor. The Contractor may terminate this Agreement upon 30 days written notice to Agency.

Following termination by the Agency or the Contractor, the Contractor shall be reimbursed for all expenditures made in good faith in accordance with the terms of this Agreement that are unpaid at the time of termination.

6. PERMITS

Permits required by governmental authorities will be obtained at the Contractor's expense, and the Contractor will comply with local, state and federal regulations and statutes including Cal/OSHA requirements.

7. INDEMNIFY AND HOLD HARMLESS

When the law establishes a professional standard of care for the Contractor's services, to the fullest extent permitted by law, Contractor will defend, indemnify and hold harmless the Agency, its directors, officers, employees, and authorized volunteers from all claims and demands of all persons that arise out of, pertain to, or relate to the Contractor's negligence, recklessness, or willful misconduct in the performance (or actual or alleged non-performance) of the work under this agreement. The Contractor shall defend itself against any and all liabilities, claims, losses, damages, and costs arising out of or alleged to arise out of Contractor's performance or non-performance of the work hereunder, and shall not tender such claims to Agency nor to its directors, officers, employees, or authorized volunteers, for defense or indemnity.

Other than in the performance of professional services, to the fullest extent permitted by law, Contractor will defend, indemnify and hold harmless the Agency, its directors, officers, employees and authorized volunteers from all claims and demands of all

persons arising out of the performance of the work or furnishing of materials; including but not limited to, claims by the Contractor or Contractor's employees for damages to persons or property except for the sole negligence or willful misconduct or active negligence of the Agency, its directors, officers, employees, or authorized volunteers.

8. INSURANCE

By his/her signature hereunder, Contractor certifies that he/she is aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and that Contractor will comply with such provisions before commencing the performance of the professional services under this agreement. Contractor and sub-contractors will keep workers' compensation insurance for their employees in effect during all work covered by this agreement.

Contractor will file with the Agency, before beginning professional services, certificates of insurance satisfactory to the Agency evidencing general liability coverage of not less than \$1,000,000 per occurrence (\$2,000,000 general and products-completed operations aggregate (if used)) for bodily injury, personal injury and property damage; auto liability of at least \$1,000,000 for bodily injury and property damage each accident limit; workers' compensation (statutory limits) and employer's liability (\$1,000,000) (if applicable); requiring 30 days (10 days for non-payment of premium) notice of cancellation to the Agency. Any insurance, self-insurance or other coverage maintained by the Agency, its directors, officers, employees, or authorized volunteers shall not contribute to it. Coverage is to be placed with a carrier with an A.M. Best rating of no less than A- :VII, or equivalent, or as otherwise approved by the Agency. In the event that the Contractor employs other contractors (sub-contractors) as part of the work covered by this agreement, it shall be the Contractor's responsibility to require and confirm that each sub-contractor meets the minimum insurance requirements specified above.

If any of the required coverages expire during the term of this agreement, the Contractor shall deliver the renewal certificate(s) including the general liability additional insured endorsement to the Agency at least ten (10) days prior to the expiration date.

9. COMPLIANCE WITH LAW

The Contractor shall be subject to and comply with all federal, state and local laws and regulations applicable with respect to its performance under this Agreement, including but not limited to, licensing, employment and purchasing practices; and wages, hours and conditions of employment.

10. RECORD RETENTION

Except for materials and records, delivered to the Agency, the Contractor shall retain all materials and records prepared or obtained in the performance of this Agreement, including financial records, for a period of at least three years after the Contractor's receipt of the final payment under this Agreement. Upon request by the Agency, the Contractor shall make such materials and records available to the Agency at no additional charge and without restriction or limitation to State and federal governments at no additional charge.

11. OWNERSHIP OF DOCUMENTS

All materials and records of a finished nature, such as final plans, specifications, reports and maps, prepared or obtained in the performance of this Agreement, shall be delivered to and become the property of the Agency. All materials of a preliminary nature, such as survey notes, sketches, preliminary plans, computations and other data, prepared or obtained in the performance of this Agreement, shall be made available, upon request, to the Agency at no additional charge and without restriction or limitation on their use.

12. SUBCONTRACT AND ASSIGNMENT

This Agreement binds the heirs, successors, assigns and representatives of the Contractor. The Contractor shall not enter into subcontracts for any work contemplated under this Agreement and shall not assign this Agreement or monies due or to become due, without the prior written consent of the General Manager of the Agency or his designee, subject to any required state or federal approval.

13. NONRENEWAL

The Contractor understands and agrees that there is no representation, implication, or understanding that the services provided by the Contractor under this Agreement will be purchased by the Agency under a new agreement following expiration or termination of this Agreement, and waives all rights or claims to notice or hearing respecting any failure to continue purchase of all or any such services from the Contractor.

14. NOTICE

Any notice provided for herein are necessary to the performance of this Agreement and shall be given in writing by personal delivery or by prepaid first-class mail addressed as follows:

AGENCY

Roland Sanford, General Manager
Solano County Water Agency
810 Vaca Valley Parkway, Suite 203
Vacaville, CA 95688

CONTRACTOR

Dr. Timothy S. Wood, Senior Scientist
Bryo Technologies LLC
P.O. Box 340805
Beavercreek, OH 45434

The parties have executed this Agreement the day and year first above written. If the Contractor is a corporation, documentation must be provided that the person signing below for the Contractor has the authority to do so.

Solano County Water Agency
a Public Agency

Bryo Technologies LLC

By: _____
Roland Sanford,
General Manager

By: _____
Dr. Timothy S. Wood,
Senior Scientist

EXHIBIT A
SCOPE OF SERVICES



PO Box 340805
Beavercreek, OH 45434
Tel. 937-671-1670

Bench Scale Testing of Algaecides for the Putah South Canal

A Research Proposal submitted to
Solano County Water Agency
810 Vaca Valley Parkway
Vacaville, California

September 25, 2017

BACKGROUND

The Putah South Canal (PSC) is an open concrete channel extending 33 miles in Solano County, California. It carries water south and west from a diversion dam on Putah Creek a terminal reservoir. Like many irrigation channels the PSC is prone to sedimentation which supports vegetation that in turn accelerates more sedimentation. Dense strings of algae, especially *Cladophora* species, contribute significantly to this process (Peffer, 2013).

Straight solutions of copper sulfate are normally used in the PSC to control algae. Compared to other commercial algaecides copper sulfate is inexpensive, but it may quickly lose its effectiveness due to chemical precipitation. Water alkalinity typically ranges from 165 to 180 mg/L as CaCO₃, during the algal treatment months, sufficient to question whether a different algaecide might be more appropriate.

This proposal outlines steps to evaluate a variety of chemical algaecides under known laboratory conditions similar to those occurring in Putah South Canal.

TASKS

PREPARATION

Like so much scientific work a great deal of time will be spent in preparation. In addition to assembling materials and equipment this will include conference calls with the PSC pesticide applicator and reviewing scientific literature for the most appropriate culture media and methodology.

Algal specimens will be collected at the Putah South Canal during early October, 2017 and cultured in Bryo Technologies laboratories in Dayton, Ohio. According to Peffer (2013) the most common algae species in the Canal are *Cladophora* sp., *Ulva* (probably *Ulva flexiosa*), and *Spirogyra*. Two of these will be selected for bioassay work described below.

For initial cultures the medium will be Gorham's formula (Hughes et al. 1958) supplemented with Vitamin B₁ for *Cladophora* and with sodium chloride for *Ulva*. Some experimentation with the media and light may be necessary. Ambient temperature will be maintained at 21° C and gentle aeration will be provided. Cultures will be maintained for as long as necessary to achieve the vigorous growth and normal morphology required for bioassays.

Ten algaecides will be selected in consultation with SCWA/SID. All will be appropriate for flowing water and will represent major algaecide formulations labeled for use in California. These could possibly include those listed in the following table:

Active chemical(s)	Trade name	NSF Certified *
Copper, citrate, gluconate	Algimycin	X
Copper, mono- and triethanol amines	Captain/Cutrine Plus	
Copper sulfate pentahydrate	EarthTec	X
Copper sulfate pentahydrate	(Generic)	X
Copper, triethanolamines	K-Tea	
Sodium carbonate peroxyhydrate	GreenClean	X
Hydrogen dioxide, peroxyacetic acid	Green Clean Liquid 5.0	X
Endothall amine salt	Hydrothol 191	
Diquat dibromide	Reward	

* Certified to Standard 60 of the National Sanitation Foundation for use in potable water applications.

COPPER ION EXTINCTION TESTS

The effectiveness of copper-based algaecides depends on copper ions (Cu⁺) remaining biologically active in the water for the longest possible time. Since copper ions combine rather easily with many dissolved minerals most algaecides are formulated to prevent that from happening. Copper ion extinction tests will measure the effectiveness of those formulations within the range of alkalinities in the PSC..

Reconstituted water will be prepared according to formulations of the American Public Health Association (2015). Dissolved organic carbon will be adjusted to around 3.5 mg/L with the addition of sodium acetate. Three levels of alkalinity will be used within the range occurring in the PSC: 140, 160, and 180 mg/L as CaCO₃. After spiking with a known concentration of algaecide each solution will be stirred continuously as copper ion measurements are taken at timed intervals of 0, 0.5, 1, 2, 4, and 8 hours. The test

may be extended to 24 and 48 hours. All tests will be run in triplicate. Copper ion concentration will be measured in parts per billion (porphyrin method)

BIOASSAYS

Bioassays will use individual algal samples each equivalent to approximately 5 mg dry weight. Samples will have a 24-hour acclimation to aerated fresh culture media and then be given a brief exposure (0.3 to 6 hrs) to a selected chemical at known concentration. Following exposure will be a thorough rinse in deionized water and a return to culture media for an observation period of up to 5 days.

Chemical exposure water will be prepared as "reconstituted water" described above ("Copper extinction rates"). Three levels of alkalinity will be prepared within the range occurring in the PSC: 140, 160, and 180 mg/L as CaCO₃. The water will be spiked with the tested algaecide within two minutes before exposure to the alga sample.

For each algal species the full series of bioassays will be repeated three times in succession (not simultaneously) for a total of 225 tests.

TECHNICAL SUPPORT & PRESENTATION

This task will provide technical support to SCWA for future field studies. It may also include one in-person presentation to one of the SCWA User Group meetings.

It is understood that, depending on the results and outcome, the SCWA may be sharing/presenting the results of this work at a future AWWA conference.

DELIVERABLES

All tests results will be presented in a written report, including details of methodology, raw and analyzed data, and a discussion of procedures and results.

Assistance with disseminating results, including an in-person presentation, is also included in this project.

SCHEDULE

The work described here will take 3-4 months to complete. If algal culturing can begin in October 2017 we should have a written report submitted by January 31, 2018. The only

foreseeable delay would be the result of unexpected problems in developing strong laboratory cultures suitable for bioassays.

BUDGET

1. Direct labor		
Biologist	21 days @ \$1,000	\$ 21,000
Technicians	72 days @ \$450	\$ 32,400
2. Bench fees	82 days @ \$16	\$ 1,328
3. Equipment		\$ 1,700
4. Travel and miscellaneous		<u>\$ 1,000</u>
	TOTAL	\$ 57,428

REFERENCES

American Public Health Association et al. 2015. *Standard Methods for the Examination of Water and Wastewater*, 22nd Edition. American Public Health Association, American Water Works Association, Water Environment Federation. 1496 pp.

Hughes, E.O., Gorham, P.R. and Zehnder, A., 1958. Toxicity of a unialgal culture of *Microcystis aeruginosa*. *Canadian Journal of Microbiology*, 4(3), pp.225-236.

Peffer, E. 2013. Aquatic vegetation assessment of Putah Creek, Lake Solano, the Putah South Canal, and the Terminal Reservoir. Report prepared for the Solano County Water Agency. 123 pp.

**ACTION OF
SOLANO COUNTY WATER AGENCY**

DATE: October 12, 2017

SUBJECT: Contracts with Palencia Consulting and Napa County for Lake Berryessa Watershed Sanitary Survey

RECOMMENDATIONS:

Authorize General Manager to execute:

- (a) \$40,000 contract with Palencia Consulting for the Lake Berryessa Watershed Sanitary Survey (WSS) and
- (b) contract with Napa County for a 75% cost-share reimbursement to the Water Agency for the Lake Berryessa WSS.

FINANCIAL IMPACT:

Sufficient funding has been included in the FY 2017-2018 Solano Project budget for this contract. Napa County will be reimbursing the Water Agency 75% of the actual costs.

BACKGROUND:

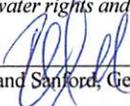
Pursuant to State law, urban water suppliers are required to conduct – at least once every five years – a “Watershed Sanitary Survey” (WSS). The purpose of the survey is to identify and characterize the potential sources of water contamination located in the watershed(s) from which the urban water supplier obtains its raw water supply. The Lake Berryessa watershed (aka Upper Putah Creek drainage) is one of the primary sources of drinking water in Solano County, as well as the principal source of drinking water for the resorts located around Lake Berryessa, in Napa County.

Accordingly, both Solano and Napa urban water suppliers need to periodically conduct a WSS for the Lake Berryessa watershed. The last Lake Berryessa WSS was conducted in 2013 – a joint effort between Solano and Napa, in which Napa provided 75% of the funds needed to complete the WSS, the remaining 25% by Solano.

Water Agency staff has met with their counterparts in Napa and the parties have collectively agreed to conduct a joint WSS for the Lake Berryessa watershed, using the same 75% Napa – 25% Solano cost sharing arrangement employed in 2013. The parties have selected Palencia Consulting to conduct the study for a cost not to exceed \$40,000. It is proposed that the Water Agency serve as the project manager and contact with Palencia Consulting, and that 75% of the total cost incurred by the Water Agency be reimbursed by Napa.

RELEVANCE TO 2016-2025 SCWA STRATEGIC PLAN:

Completion of the Lake Berryessa Watershed Sanitary Survey is required by law and is consistent with Goal #4 of the 2016-2015 Strategic Plan (*Water Resource Resiliency: Protect access to reliable water supplies under current and future stressors*), Objective B (*Protect water rights and supplies*).

Recommended: 
Roland Sanford, General Manager

<input type="checkbox"/>	Approved as recommended	<input type="checkbox"/>	Other (see below)	<input type="checkbox"/>	Continued on next page
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Modification to Recommendation and/or other actions:

I, Roland Sanford, General Manager and Secretary to the Solano County Water Agency, do hereby certify that the foregoing action was regularly introduced, passed, and adopted by said Board of Directors at a regular meeting thereof held on October 12, 2017 by the following vote.

Ayes:

Noes:

Abstain:

Absent:

Roland Sanford
General Manager & Secretary to the
Solano County Water Agency

Name of Project: **2018 Lake Berryessa Watershed Sanitary Survey Update**

SOLANO COUNTY WATER AGENCY

AGREEMENT FOR PROFESSIONAL SERVICES

(Professional Services/no Professional Liability/General Liability & Auto/no Additional Insured)

THIS AGREEMENT, **effective October 12, 2017**, is between SOLANO COUNTY WATER AGENCY, a public agency existing under and by virtue of Chapter 573 of the 1989 statutes of the State of California, hereinafter referred to as "Agency," and **Palencia Consulting Engineers**, hereinafter referred to as "Contractor."

The Agency requires services for the **2018 Lake Berryessa Watershed Sanitary Survey Update**; and the Contractor is willing to perform these services pursuant to the terms and conditions set out in this Agreement.

IT IS MUTUALLY AGREED, as follows:

1. SCOPE OF SERVICES

The Agency hereby engages the Contractor, and the Contractor agrees to perform the services for the **2018 Lake Berryessa Watershed Sanitary Survey Update**, as described in Exhibit A, in accordance with the terms of this Agreement and any applicable laws, codes, ordinances, rules or regulations. In case of conflict between any part of this Agreement, this Agreement shall control over any Exhibit.

2. COMPENSATION

Compensation for services shall be as follows: Hourly rate of personnel plus any allowed reimbursable expenses based on unit costs as indicated on any allowed reimbursable expense in Exhibit B **not to exceed \$40,000** for all work contemplated by this Agreement.

3. METHOD OF PAYMENT

Upon submission of an invoice by the Contractor, and upon approval of the Agency's representative, the Agency shall pay the Contractor monthly in arrears for fees and allowed expenses incurred the prior month, however in no event shall the cumulative total paid pursuant to this agreement exceed the maximum amount provided for in paragraph 2 of this Agreement. Every invoice shall specify hours worked for each task identified in Exhibit A undertaken.

Each invoice shall be accompanied by a spreadsheet showing, by month, costs incurred to date for the project broken down by the Tasks identified in Exhibit A. The spreadsheet shall show, for each task, budget amounts, total expended and remaining amounts. The spreadsheet shall show a subtotal for each fiscal year covered by the contract. Any amendments to the

contract shall be listed and incorporated into spreadsheet. An example of a typical spreadsheet shall be provided by the Agency.

4. TIME OF PERFORMANCE

This Agreement shall become effective as of the date it is executed and said services will take place between this date and **June 30, 2019** as directed by the Agency.

5. MODIFICATION AND TERMINATION

This Agreement may be modified or amended only by written instrument signed by the parties hereto, and the Contractor's compensation and time of performance of this Agreement shall be adjusted if they are materially affected by such modification or amendment.

This Agreement may be terminated by the Agency at any time, without cause, upon written notification to the Contractor. The Contractor may terminate this Agreement upon 30 days written notice to Agency.

Following termination by the Agency or the Contractor, the Contractor shall be reimbursed for all expenditures made in good faith in accordance with the terms of this Agreement that are unpaid at the time of termination.

6. INDEMNIFY AND HOLD HARMLESS

When the law establishes a professional standard of care for the Contractor's services, to the fullest extent permitted by law, Contractor will defend, indemnify and hold harmless the Agency, its directors, officers, employees, and authorized volunteers from all claims and demands of all persons that arise out of, pertain to, or relate to the Contractor's negligence, recklessness, or willful misconduct in the performance (or actual or alleged non-performance) of the work under this agreement. The Contractor shall defend itself against any and all liabilities, claims, losses, damages, and costs arising out of or alleged to arise out of Contractor's performance or non-performance of the work hereunder, and shall not tender such claims to Agency nor to its directors, officers, employees, or authorized volunteers, for defense or indemnity.

Other than in the performance of professional services, to the fullest extent permitted by law, Contractor will defend, indemnify and hold harmless the Agency, its directors, officers, employees and authorized volunteers from all claims and demands of all persons arising out of the performance of the work or furnishing of materials; including but not limited to, claims by the Contractor or Contractor's employees for damages to persons or property except for the sole negligence or willful misconduct or active negligence of the Agency, its directors, officers, employees, or authorized volunteers.

7. INSURANCE

By his/her signature hereunder, Contractor certifies that he/she is aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and that Contractor will comply with such provisions before commencing the performance of the professional services under this agreement. Contractor and sub-contractors will keep workers' compensation insurance for their employees in effect during all work covered by this agreement.

Contractor will file with the Agency, before beginning professional services, certificates of insurance satisfactory to the Agency evidencing general liability coverage of not less than \$1,000,000 per occurrence (\$2,000,000 general and products-completed operations aggregate (if used)) for bodily injury, personal injury and property damage; auto liability of at least \$1,000,000 for bodily injury and property damage each accident limit; workers' compensation (statutory limits) and employer's liability (\$1,000,000) (if applicable); requiring 30 days (10 days for non-payment of premium) notice of cancellation to the Agency. Any insurance, self-insurance or other coverage maintained by the Agency, its directors, officers, employees, or authorized volunteers shall not contribute to it. Coverage is to be placed with a carrier with an A.M. Best rating of no less than A- :VII, or equivalent, or as otherwise approved by the Agency. In the event that the Contractor employs other contractors (sub-contractors) as part of the work covered by this agreement, it shall be the Contractor's responsibility to require and confirm that each sub-contractor meets the minimum insurance requirements specified above.

If any of the required coverages expire during the term of this agreement, the Contractor shall deliver the renewal certificate(s) including the general liability additional insured endorsement to the Agency at least ten (10) days prior to the expiration date.

8. COMPLIANCE WITH LAW

The Contractor shall be subject to and comply with all federal, state and local laws and regulations applicable with respect to its performance under this Agreement, including but not limited to, licensing, employment and purchasing practices; and wages, hours and conditions of employment.

9. RECORD RETENTION

Except for materials and records, delivered to the Agency, the Contractor shall retain all materials and records prepared or obtained in the performance of this Agreement, including financial records, for a period of at least three years after the Contractor's receipt of the final payment under this Agreement. Upon request by the Agency, the Contractor shall make such materials and records available to the Agency at no additional charge and without restriction or limitation to State and federal governments at no additional charge.

10. OWNERSHIP OF DOCUMENTS

All materials and records of a finished nature, such as final plans, specifications, reports and maps, prepared or obtained in the performance of this Agreement, shall be delivered to and become the property of the Agency. All materials of a preliminary nature, such as survey notes, sketches, preliminary plans, computations and other data, prepared or obtained in the performance of this Agreement, shall be made available, upon request, to the Agency at no additional charge and without restriction or limitation on their use.

11. SUBCONTRACT AND ASSIGNMENT

This Agreement binds the heirs, successors, assigns and representatives of the Contractor. The Contractor shall not enter into subcontracts for any work contemplated under this Agreement and shall not assign this Agreement or monies due or to become due, without the prior written consent of the General Manager of the Agency or his designee, subject to any required state or federal approval.

12. NOTICE

Any notice provided for herein are necessary to the performance of this Agreement and shall be given in writing by personal delivery or by prepaid first-class mail addressed as follows:

AGENCY

Roland Sanford, General Manager
Solano County Water Agency
810 Vaca Valley Parkway, Suite 203
Vacaville, CA 95688

CONTRACTOR

Leslie Palencia
2837 Lemonwood Court
Fullerton, CA 92835

The parties have executed this Agreement the day and year first above written. If the Contractor is a corporation, documentation must be provided that the person signing below for the Contractor has the authority to do so.

Solano County Water Agency

a Public Agency

By: _____
Roland Sanford,
General Manager

By: _____
Leslie Palencia,
Owner

EXHIBIT A
SCOPE OF SERVICES

SCOPE OF WORK – 2018 LAKE BERRYESSA WATERSHED SANITARY SURVEY

Task 1. Information Collection

Collect information and develop/input information into usable format.

1A. Agency Information

Develop an Agency Survey form to obtain data from Lake Berryessa Resort Improvement District (LBRID) and the Napa Berryessa Resort Improvement District (NBRID). The objectives are to collect data from the period of interest (2013 –2017) as efficiently as possible by utilizing a survey form and data request package. The survey form will collect various types of information including selected intake (source) water data for constituents of interest including turbidity, coliforms, *Giardia and Cryptosporidium* [including Long Term 2 Enhanced Surface Water Treatment Rule monitoring], total organic carbon, Consumer Confidence Reports, description of water supply system and changes, identification of any treatability issues, and source water protection efforts related to previous recommendations.

1B. Contaminant Sources Information

Collect information on changes in watershed conditions and changes in regulation and management for selected potential contaminant sources. The following five potential contaminant sources are recommended for review and evaluation. The right hand column provides the pertinent information that will be updated for each contaminant source.

Contaminant Source	Watershed Conditions and/or Management Changes
Source Water Spills	<ul style="list-style-type: none"> - Compile spills in watershed as reported to Office of Emergency Services Response Information Management System (RIMS) - Compile SSOs from CIWQS database - Discuss LBRID storm related spill in January 2017
Recreation	<ul style="list-style-type: none"> - Status of concessionaire management for five resorts (Berryessa Point, Monticello Shores, Putah Canyon, Spanish Flat, Steele Canyon)/Discussions with Napa County/Report completed by Ragatz Realty - Provide updated description of recreation activities at Pleasure Cove Marina, Markley Cove and Day Use Area (4), Dufer Point Visitor Center, Capell Cove Boat Launch, Camp Berryessa - Activities completed by Lake Berryessa Watershed Partnership, including Lake Berryessa Boater Outreach Program - Activities completed by Lake Berryessa Community Forum Coordinating Team

Agriculture	<ul style="list-style-type: none"> - Compile acreage by crop type from Lake and Napa County Ag Reports, particularly wine grapes - Compile Pesticide Use for Lake and Napa County from California Dept. of Pesticide Regulation - Contact Napa County Planning, Building and Environmental Services for a map of wineries/vineyards in Pope Valley - Summarize any water quality monitoring completed for Irrigated Lands Waiver
Wastewater	<ul style="list-style-type: none"> - For each WWTP (Middletown, Hidden Valley Lake Community Services District, Lake Berryessa Resort Improvement District for Lake Berryessa Estates, Berryessa Pines WWTP, Spanish Flat WWTP, NBRID WWTP, Turtle Rock WWTP, Capell Valley Mobile Home Park, Circle Oaks WWTP) and each open recreation area (Reclamation WWTP, Pleasure Cove, Markley Cove) identify: <ul style="list-style-type: none"> - Spill information from CIWQS, changes to facility - New WDR permit issued for facility - Other Violations - Discussion of floating restrooms
Fires	<ul style="list-style-type: none"> - Provide acreage burned and other available information for Valley Fire, Rocky Fire, and Jerusalem Fire - Discuss three post-wildfire storm water sampling events at seven locations in watershed
Leaking Underground Storage Tanks	<ul style="list-style-type: none"> - Discuss historical and current remedial efforts to address leaking underground storage tank site at former Putah Creek Resort and Spanish Flat Yard

Due to the different locations of the NBRID WTP intake, LBRID WTP intake, and Putah South Canal users, a discussion will be provided at the end of each potential contaminant source to identify the key concerns for each location.

Task 2. Information Analysis

Identify trends, connect cause and effect (where possible), and describe major changes since the last update.

2A. Water Quality/Treatment Review

Identify source water quality occurrence characteristics (statistical evaluation), temporal (historical and seasonal) and geographic trends, relationships between source water quality and contaminant sources, and relationship of source water quality to treatability issues. The evaluation will focus on source water turbidity, microbiological constituents, total organic carbon (TOC), and other detectable constituents of interest based on a review of the Consumer Confidence Reports and Agency Surveys. Range, median, and monthly medians for total coliform and *E. coli* will be calculated for LBRID WTP Intake and NBRID WTP Intake. Graphs will be prepared for the 2013-2017 data for source water turbidity and source water TOC, but treated water TOC and turbidity will not be graphed. Prepare evaluation and discussion of required level of treatment for *Giardia*, viruses, and *Cryptosporidium* based on source water quality.

A short discussion will also be provided on algal identification for Upper Putah Creek conducted by LBRID.

N

2B. Watershed Review

Describe current watershed management activities, discuss implementation and effectiveness of utility source water protection efforts, and discuss significance of changes in watershed conditions and other management efforts.

Task 3. Mapping Coordination with Solano County Water Agency (SCWA) GIS staff

A watershed map for the Lake Berryessa watershed was prepared for the 2013 Update. It is recommended to update this map with aerial photography as the base layer. Additional maps to consider are land use, land ownership, and possibly crop acreage.

Task 4. Evaluation and Recommendations

4A. Evaluation

Identify overall findings as they relate to the following topics:

Water quality data trends

Relationships between contaminant sources and water quality

Treatability issues



Regulatory compliance
Significant watershed changes
Current utility source water protection efforts related to previous recommendations

4B. Source Water Protection Recommendations

Review the 2013 Update Report Recommendations and evaluate their current relevance, develop recommendations that are practical and implementable within the resources of Napa County and Solano County Water Agency (SCWA).

Task 5. Report

5A. Annotated Outline

Develop an annotated outline of the Update Report to be reviewed by DDW, Napa County and SCWA.

5B. Draft Report

Develop a draft report that reflects consultant work described herein as well as DDW, SCWA and Napa County staff input. It is preferred to submit an electronic copy for review of the draft report.

5C. Final Report

Develop a final report that reflects review comments on draft report. One electronic copy in both MS Word and pdf version will be provided each to Napa County and SCWA. Two hard copies will be printed for submittal to the DDW.

Task 6. Project Management

6A. Project Management

Manage quality of the work, control budget and schedule, prepare for and lead meetings include agenda development, prepare meeting summaries and action items, and insure good communication with the client project manager.

6B. Technical Committee Meetings

Conduct three meetings to discuss the work in progress at key points and solicit input.

Presentation and discussion of information collection (Kickoff meeting)

Presentation and discussion of information review

Presentation of evaluation and source water protection recommendations to Napa County and SCWA staff (teleconference only)



SCHEDULE

Typically, a watershed sanitary survey requires six to nine months to complete. The schedule below proposes delivery of a Draft Report by July 2, 2018, with a final report for submittal to the DDW by mid-July 2018.

SCHEDULE FOR 2018 LAKE BERRYESSA WATERSHED SANITARY SURVEY

Task	Feb	Mar	Apr	May	June	July	Aug	Sept
1A. Agency Information								
1B. Contaminant Sources Information								
2A. Water Quality Treatment/Review								
2B. Watershed Review								
3. Mapping Coordination								
4A. Evaluation								
4B. Source Water Protection Recommendations								
5A. Annotated Outline								
5B. Draft Report								
5C. Final Report								
6A. Project Management								
6B. Technical Committee Meetings								

M1- Kickoff Meeting First week of April 2018

M2 Information and Data Analysis Meeting Last week of May 2018

M3 - Key Findings and Recommendations Mid June 2018

Legend

Napa County and SCWA

Consultant Work

EXHIBIT B

RATE OF COMPENSATION

COST ESTIMATE

Table 1 shows the cost estimate to complete the scope of work as described above. Table 1 costs reflect all labor, printing, and other direct charges related to the proposed work.

TABLE 1. BUDGET FOR 2018 LAKE BERRYESSA WATERSHED SANITARY SURVEY

BUDGET FOR LAKE BERRYESSA WATERSHED SANITARY SURVEY 2018 UPDATE				
	Palencia Consulting Engineers	ODCs Other	TOTAL	
Task 1. Data Collection				
1A. Agency Information	10		\$	1,450
1B. Contaminant Sources Information	100		\$	14,500
Task 2. Information Analysis				
2A. Water Quality/Treatment Review	40		\$	5,800
2B. Watershed Review	4		\$	580
Task 3. Mapping Coordination				
Update GIS Based Watershed Map and other graphics	6		\$	870
Task 4. Evaluation and Recommendations				
4A. Evaluation	4		\$	580
4B. Source Water Protection Recommendations	4		\$	580
Task 5. Report				
5A. Annotated Outline	4		\$	580
5B. Draft Report	40		\$	5,800
5C. Final Report	6	\$ 100	\$	870
Task 6. Project Management				
6A. Project Management	6		\$	870
6B. Technical Committee Meetings (3 meetings)	18		\$	2,610
TOTAL HOURS	242			
HOURLY RATE		\$ 145		
TOTAL		\$ 35,090	\$ 100	\$ 35,190

**NAPA COUNTY FLOOD CONTROL AND WATER
CONSERVATION DISTRICT AGREEMENT NO. _____
SOLANO COUNTY WATER AGENCY AGREEMENT NO. _____**

**(Cost Sharing Agreement for Solano County Water Agency to Prepare the 2018 Update of
the Lake Berryessa Watershed Sanitary Survey)**

THIS AGREEMENT (“Agreement”) is made and entered into as this ____ day of _____, 2017, by and between the NAPA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT (“**DISTRICT**”), a special district of the State of California, and the Solano County water Agency (“**AGENCY**”) a special district of the State of California;

RECITALS

WHEREAS, DISTRICT and AGENCY have shared interests in water supplies from Lake Berryessa (also known as the “**Solano Project**”); and

WHEREAS, the California Surface Water Treatment Regulation as administered by the Division of Drinking Water of the State Water Resources Control Board requires that a Watershed Sanitary Survey (WSS) be prepared every five (5) years for surface water supply sources; and

WHEREAS, separate WSSs are prepared for the watershed above Monticello Dam (“**Dam**”) and the watershed below the dam; and

WHEREAS, the last Watershed Sanitary Survey for Lake Berryessa, located above the Dam, was completed in 2013; and

WHEREAS, District and Agency share interest in the WSS above the Dam 75% and 25%, respectively; and

WHEREAS, AGENCY is agreeable to hiring a consultant to prepare the WSS for the watershed above the Dam (“**2018 WSS Update**”) and being reimbursed by DISTRICT.

TERMS

NOW, THEREFORE, IT IS AGREED BY DISTRICT AND AGENCY as follows:

1. **TERM**. The term of this Agreement shall commence on the date first above written and shall expire at the completion of the 2018 WSS Update or payment of final contribution by DISTRICT to AGENCY, whichever is later (“**Term**”), except that the obligations in Sections 6 (Insurance) and 7 (Indemnification) shall continue in full force and effect after expiration of the Term.
2. **AGENCY OBLIGATIONS**. AGENCY shall retain and manage a mutually agreed upon consultant with a mutually agreed upon scope of work (“**Consultant**”) to prepare the 2018 WSS

Update, AGENCY shall provide DISTRICT with the opportunity to review and comment on all drafts of the 2018 WSS Updated prepared by Consultant.

3. **DISTRICT OBLIGATIONS.** DISTRICT shall contribute 75% of the cost of the 2018 WSS Update in an amount not to exceed Thirty Thousand Dollars (\$30,000.00). DISTRICT shall provide all information reasonably required to support completion of the 2018 WSS Update directly to Consultant in a timely manner.

4. **AMENDMENT.** Any modification or amendment of this Agreement shall be effective only if mutually approved in writing by the governing boards of DISTRICT and AGENCY.

5. **INDEPENDENT CONTRACTOR.** AGENCY shall perform the services required of AGENCY under this Agreement as an independent contractor. AGENCY and the officers, agents and employees of AGENCY are not, and shall not be deemed, DISTRICT employees for any purpose, including workers' compensation or employee benefits. AGENCY shall determine, at its own risk and expense, the method and manner by which duties imposed on AGENCY under this Agreement shall be performed.

6. **INSURANCE.** AGENCY shall obtain and maintain in full force and effect throughout the term of this Agreement, and thereafter as to matters occurring during the term of this Agreement, the following insurance coverage or equivalent amounts of qualified self-insurance and shall require that Consultant provide the same coverage:

(a) **Workers' Compensation Insurance.** AGENCY shall provide, to the extent required by law, workers' compensation insurance in the performance of any of AGENCY's duties under this Agreement, including but not limited to, workers' compensation and disability, and upon request by DISTRICT shall provide DISTRICT with certification of all such coverages.

(b) **Liability insurance.**

1. **General Liability.** AGENCY shall obtain and maintain in full force and effect during the term of this Agreement commercial or comprehensive general liability insurance coverage (bodily injury and property damage) of not less than One Million Dollars (\$1,000,000) combined single limit per occurrence, issued by a company duly and legally licensed to transact business in the State of California, covering liability for any personal injury, including death, to any person and/or damage to the property of any person arising from the acts or omissions of AGENCY or any officer, agent, or employee of AGENCY under this Agreement except for acts or omissions performed in strict compliance with express direction from DISTRICT's governing board, officers or personnel.

2. **Comprehensive Automobile Liability Insurance.** AGENCY shall obtain and maintain in full force and effect during the term of this Agreement a comprehensive automobile liability insurance policy (Bodily Injury and Property Damage) on owned, hired, leased and non-owned vehicles used in conjunction with AGENCY's activities under this Agreement of not less than Three Hundred Thousand Dollars (\$300,000) combined single limit per occurrence.

(c) Certificates of Coverage. Where the foregoing coverages are provided by insurance rather than by self-insurance (written proof of which shall be provided to DISTRICT), the coverages shall be evidenced by a Certificate of Coverage which shall be filed with the DISTRICT Secretary prior to reimbursement of AGENCY by DISTRICT for performance of any of AGENCY's duties under this Agreement; shall indicate that if the same policy applies to activities of AGENCY not covered by this Agreement then the limits in the Certificate relating to the additional insured coverage of DISTRICT shall pertain only to liability for activities of AGENCY under this Agreement; shall name DISTRICT, its officers, employees, and agents as additional insureds; shall be kept current during the term of this Agreement; shall provide that DISTRICT shall be given no less than thirty (30) days prior written notice of any non-renewal, cancellation, other termination, or material change; shall provide that the insurance provided is primary coverage to DISTRICT with respect to any insurance or self-insurance programs maintained by DISTRICT; and shall provide that the inclusion of more than one insured shall not operate to impair the rights of one insured against another insured, the coverage afforded applying as though separate policies had been issued to each insured, but the inclusion of more than one insured shall not operate to increase the limits of the company's liability. Upon request of DISTRICT, AGENCY shall provide or arrange for the insurer to provide DISTRICT with certified copies of the actual insurance policies within thirty (30) days of the request.

(d) Deductibles/Retentions. Any deductibles or self-insured retentions shall be declared to and be approved by DISTRICT. At the option and in the discretion of DISTRICT, either the insurer shall reduce or eliminate such deductibles or self-insurance retentions as respects DISTRICT, its officers, employees and volunteers or AGENCY shall procure a bond or other security acceptable to DISTRICT guaranteeing payment of losses and related investigations, claims administration and defense expenses for amounts falling within the limits of such deductibles or retentions.

7. INDEMNIFICATION.

(a) To the full extent permitted by law, AGENCY shall hold harmless, defend at its own expense, and indemnify DISTRICT, and the officers, agents, employees and volunteers of DISTRICT from any and all liability, claims, losses, damages expenses, arising from all acts or omissions of AGENCY or its officers, agents, employees, volunteers, contractors and subcontractors, excluding, however, such liability, claims, losses, damages or expenses arising from the sole negligence or willful acts of DISTRICT or its officers, agents, employees or volunteers.

(b) To the full extent permitted by law, DISTRICT shall hold harmless, defend at its own expense, and indemnify AGENCY, and the officers, agents, employees and volunteers of AGENCY from any and all liability, claims, losses, damages expenses, arising from all acts or omissions of DISTRICT or its officers, agents, employees, volunteers, contractors and subcontractors, excluding, however, such liability, claims, losses, damages or expenses arising from the sole negligence or willful acts of AGENCY or its officers, agents, employees or volunteers.

(c) Each Party shall notify the other Party immediately in writing of any claim or damage related to activities performed under this Agreement. The Parties shall cooperate with each other in the investigation and disposition of any claim arising out of the activities under this Agreement, providing that nothing shall require either Party to disclose any documents, records or communications that are protected under peer review privilege, attorney-client privilege, or attorney work product privilege.

8. **NO WAIVER.** The waiver by either Party of any breach or violation of any requirement of this Agreement shall not be deemed to be a waiver of any such breach in the future, or of the breach of any other requirement of this Agreement.

9. **NOTICES.** All notices required or authorized by this Agreement shall be in writing and shall be delivered in person or by deposit in the United States mail, by certified mail, postage prepaid, return receipt requested. Any mailed notice, demand, request, consent, approval or communication that either Party desires to give the other party shall be addressed to the other Party at the address set forth below. Either Party may change its address by notifying the other Party of the change of address. Any notice sent by mail in the manner prescribed by this Section shall be deemed to have been received on the date noted on the return receipt or five (5) days following the date of deposit, whichever is earlier.

DISTRICT

District Engineer
Napa County Flood Control and
Water Conservation District
804 First Street
Napa, California 94558

AGENCY

General Manager
Solano County Water Agency
810 Vaca Valley Parkway, Suite 203
Vacaville CA 95688

10. **INTERPRETATION; VENUE.** The headings used herein are for reference. The terms of the Agreement are set out in the text under the headings. This Agreement shall be governed by the laws of the State of California. The venue for any legal action filed by either side in federal court to enforce any provision of this Agreement lying within the jurisdiction of the federal courts shall be the Northern District of California.

11. **SEVERABILITY.** If any provision of this Agreement, or any portion thereof, is found by any court of competent jurisdiction to be unenforceable or invalid for any reason, such provision shall be severable and shall not in any way impair the enforceability of any other provision of this Agreement unless removal of such provision makes the remaining Agreement illusory or makes impractical the enforcement of any remaining major provision of the Agreement, in which case this Agreement shall terminate.

12. **COMPLIANCE WITH LAWS.** In performing any services required under this Agreement to be reimbursed by DISTRICT, AGENCY shall observe and comply with all applicable Federal, State and local laws, ordinances, and codes, including to the extent applicable, the laws pertaining to relocation assistance. Such laws shall also include, but not be limited to, the following, except where otherwise prohibited by state or local law:

(a) Non-Discrimination. During the performance of this Agreement, AGENCY and its subcontractors shall not deny the benefits thereof to any person on the basis of sex, race, color, ancestry, religion or religious creed, national origin or ethnic group identification, sexual orientation, marital status, age (over 40), mental disability, physical disability or medical condition (including cancer, HIV and AIDS), nor shall they discriminate unlawfully against any employee or applicant for employment because of sex, race, color, ancestry, religion or religious creed, national origin or ethnic group identification, sexual orientation, marital status, age (over 40), mental disability, physical disability or medical condition (including cancer, HIV and AIDS), or use of family care leave. AGENCY shall ensure that the evaluation and treatment of employees and applicants for employment are free of such discrimination or harassment. In addition to the foregoing general obligations, AGENCY shall comply with the provisions of the Fair Employment and Housing Act (Government Code section 12900, et seq.), the regulations promulgated thereunder (Title 2, California Code of Regulations, section 7285.0, et seq.), the provisions of Article 9.5, Chapter 1, Part 1, Division 3, Title 2 of the Government Code (sections 11135-11139.5) and any state or local regulations adopted to implement any of the foregoing, as such statutes and regulations may be amended from time to time. To the extent this Agreement subcontracts to AGENCY services or works required of DISTRICT by the State of California pursuant to agreement between DISTRICT and the State, the applicable regulations of the Fair Employment and Housing Commission implementing Government Code section 12990 (a) through (f), set forth in Chapter 5 of Division 4 of Title 2 of the California Code of regulations are expressly incorporated into this Agreement by reference and made a part hereof as if set forth in full, and AGENCY and any of its subcontractors shall give written notice of their obligations thereunder to labor organizations with which they have collective bargaining or other agreements.

(b) Documentation of Right to Work. AGENCY agrees to abide by the requirements of the Immigration and Control Reform Act pertaining to assuring that all newly-hired employees of AGENCY performing any services under this Agreement have a legal right to work in the United States of America, that all required documentation of such right to work is inspected, and that INS Form 1-9 (as it may be amended from time to time) is completed and on file for each employee. AGENCY shall make the required documentation available upon request to DISTRICT for inspection.

(c) Inclusion in Subcontracts. To the extent any of the services required of AGENCY under this Agreement are subcontracted to a third party, AGENCY shall include the provisions of (a) and (b), above, in all such subcontracts as obligations of the subcontractor.

13. TAXES. As between AGENCY and DISTRICT, AGENCY shall be solely responsible for filing all required federal and state tax documentation and for paying all applicable tax withholdings (including state and federal income and FICA taxes), or for requiring its subcontractors to do so, on any reimbursement amounts paid pursuant to this Agreement. AGENCY agrees to indemnify and hold DISTRICT harmless from any liability DISTRICT might otherwise incur to the United States or the State of California as a consequence of AGENCY's failure to document, withhold, or pay when due all such taxes and obligations. In the event that DISTRICT is audited for compliance regarding any withholding or other

applicable taxes relating to reimbursement payments made to AGENCY under this Agreement, AGENCY agrees to furnish DISTRICT with proof of payment of any required taxes or related withholdings on those amounts.

14. **ACCESS TO RECORDS/RETENTION.** DISTRICT, any federal or state grantor agency funding all or part of the reimbursement of AGENCY made by DISTRICT hereunder, the State Controller, the Comptroller General of the United States, the Corps of Engineers, or the duly authorized representatives of any of the above, shall have access to any books, documents, papers and records of AGENCY which are directly pertinent to the subject matter of this Agreement for the purpose of making audit, examination, excerpts and transcriptions. Except where longer retention is required by any federal, state or local law or Authority policy, AGENCY shall maintain all required records for five years after DISTRICT makes final reimbursement for any of the services authorized hereunder and all pending matters are closed, whichever is later.

15. **AUTHORITY TO CONTRACT.** AGENCY and DISTRICT each warrant hereby that they are legally permitted and otherwise have the authority to enter into and perform this Agreement.

16. **THIRD PARTY BENEFICIARIES.** Nothing contained in this Agreement shall be construed to create any rights in third parties and AGENCY and DISTRICT do not intend to create such rights.

17. **ATTORNEY'S FEES.** In the event that either party commences legal action of any kind or character to either enforce the provisions of this Agreement or to obtain damages for breach thereof, the prevailing party in such litigation shall be entitled to all costs and reasonable attorney's fees incurred in connection with such action.

18. **ENTIRETY OF CONTRACT.** This Agreement constitutes the entire agreement between the Parties relating to the subject of this Agreement and supersedes all previous agreements, promises, representations, understandings and negotiations, whether written or oral, among the parties with respect to the subject matter hereof.

IN WITNESS THEREOF, DISTRICT and AGENCY have executed this Agreement as of the date first above written.

SOLANO COUNTY WATER AGENCY,
a special district of the State of California

By: _____
Roland Sanford, General Manager

“AGENCY”

NAPA COUNTY FLOOD CONTROL AND
WATER CONSERVATION DISTRICT,
a special district of the State of California

By: _____
BRAD WAGENKNECHT, Chairperson of the
Board of Directors

“DISTRICT”

ATTEST: GLADYS I. COIL
Secretary of the District Board

By: _____

APPROVED AS TO FORM
Office of District Counsel
By: Robert C. Martin (By E-Sign.)
Date: September 25, 2017

APPROVED BY THE NAPA COUNTY
FLOOD CONTROL AND WATER
CONSERVATION DISTRICT
Date: _____
Processed by: _____
Deputy Secretary of the District Board

**ACTION OF
SOLANO COUNTY WATER AGENCY**

DATE: October 12, 2017

SUBJECT: Payment of Solano Habitat Conservation Plan-Incidental Take Permit Fee

RECOMMENDATION:

Authorize General Manager to pay \$35,000 Incidental Take Permit fee California Department of Fish and Wildlife.

FINANCIAL IMPACT:

\$35,000, sufficient funding is available in the FY 2017-2018 budget.

BACKGROUND:

After many years of effort, the Solano Habitat Conservation Plan (HCP) is nearing completion, with the final completion date now largely dictated by how quickly the State and Federal agencies can complete their respective reviews of the document. As a part of their review and approval of the HCP, the California Department of Fish and Wildlife (CDFW) will issue an Incidental Take Permit for state-listed species. Pursuant to Senate Bill 839, the CDFW charges a fee – in this case \$35,000 – for the review of the HCP document and issuance of the Incidental Take Permit.

Recommended: 
Roland Sanford, General Manager

Approved as recommended Other (see below) Continued on next page

Modification to Recommendation and/or other actions:

I, Roland Sanford, General Manager and Secretary to the Solano County Water Agency, do hereby certify that the foregoing action was regularly introduced, passed, and adopted by said Board of Directors at a regular meeting thereof held on October 12, 2017 by the following vote.

Ayes:

Noes:

Abstain:

Absent:

Roland Sanford
General Manager & Secretary to the
Solano County Water Agency

RELEVANCE TO 2016-2025 SCWA STRATEGIC PLAN:

The Water Agency's participation in the development of the HCP is consistent with Goal # 7 of the 2016-2025 Strategic Plan (*Natural Resource Stewardship: Develop comprehensive approaches to the stewardship of natural resources*); Objective A (*Implement the Solano Multi-species Habitat Conservation Plan*).

**ACTION OF
SOLANO COUNTY WATER AGENCY**

DATE: October 12, 2017

SUBJECT: Agreement with WaterFluence for implementation of Solano Regional Large Landscape Water Budget Program

RECOMMENDATION:

Authorize General Manager to execute Agreement with WaterFluence for the continuation of the Solano Regional Large Landscape Water Budget Compliance Program.

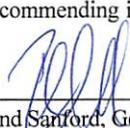
FINANCIAL IMPACT:

The Water Agency cost share is \$70,000. Funding has been allocated for this work in the 2017/18 water conservation budget.

BACKGROUND:

Landscape irrigation can account for as much as 50% of urban water use. Therefore irrigation efficiency has become the key focus of water conservation programs, whether in drought conditions or under more normal circumstances. Each of the utilities serving Solano County communities has a responsibility to ensure that water is used efficiently in irrigating large landscapes. The goal of this program is to assist irrigators to achieve a higher level of water use efficiency consistent with the actual irrigation needs of the plant materials.

This program identifies large landscapes (over 0.5 acres) with dedicated irrigation meters and assigns ETo (reference evapotranspiration) based water use budgets. The primary purposes of the water budgets are to reduce consumption and increase water use efficiency on large landscapes such as parks, golf courses, school yards, and memorial parks. The program will provide notices each billing cycle to accounts with water use budgets showing the relationship between the budget and actual consumption. This program will also offer site-specific technical assistance, such as recommending irrigation upgrades, to reduce water use to those accounts that are 20% or more over budget.

Recommended: 
Roland Sanford, General Manager

<input type="checkbox"/> Approved as recommended	<input type="checkbox"/> Other (see below)	<input type="checkbox"/> Continued on next page
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Modification to Recommendation and/or other actions:

I, Roland Sanford, General Manager and Secretary to the Solano County Water Agency, do hereby certify that the foregoing action was regularly introduced, passed, and adopted by said Board of Directors at a regular meeting thereof held on October 12, 2017 by the following vote.

Ayes:

Noes:

Abstain:

Absent:

Roland Sanford
General Manager & Secretary to the
Solano County Water Agency

Name of Project: **Regional Large Landscape Water Budget Program**

SOLANO COUNTY WATER AGENCY

AGREEMENT FOR PROFESSIONAL SERVICES

THIS AGREEMENT, **effective October 12, 2017**, is between SOLANO COUNTY WATER AGENCY, a public agency existing under and by virtue of Chapter 573 of the 1989 statutes of the State of California, hereinafter referred to as "Agency," and WaterFluence, hereinafter referred to as "Contractor."

The Agency requires services for a Regional Large Landscape Water Budget Program and the Contractor is willing to perform these services pursuant to the terms and conditions set out in this Agreement.

IT IS MUTUALLY AGREED, as follows:

1. SCOPE OF SERVICES

The Agency hereby engages the Contractor, and the Contractor agrees to perform the services for Urban Water Agencies within Solano County, as described in Exhibit A, in accordance with the terms of this Agreement and any applicable laws, codes, ordinances, rules or regulations. In case of conflict between any part of this Agreement, this Agreement shall control over any Exhibit.

2. COMPENSATION

Compensation for services shall be as follows: Hourly rate of personnel plus any allowed reimbursable expenses based on unit costs as indicated on any allowed reimbursable expense in Exhibit B **not to exceed \$70,000** for all work contemplated by this Agreement.

3. METHOD OF PAYMENT

Upon submission of an invoice by the Contractor, and upon approval of the Agency's representative, the Agency shall pay the Contractor monthly in arrears for fees and allowed expenses incurred the prior month, however in no event shall the cumulative total paid pursuant to this agreement exceed the maximum amount provided for in paragraph 2 of this Agreement. Every invoice shall specify hours worked for each task identified in Exhibit A undertaken.

Each invoice shall be accompanied by a spreadsheet showing, by month, costs incurred to date for the project broken down by the Tasks identified in Exhibit A. The spreadsheet shall show, for each task, budget amounts, total expended and remaining amounts. The spreadsheet shall show a subtotal for each fiscal year covered by the contract. Any amendments to the contract shall be

listed and incorporated into spreadsheet. An example of a typical spreadsheet shall be provided by the Agency.

4. TIME OF PERFORMANCE

This Agreement shall become effective as of the date it is executed and said services will take place between this date and **June 30, 2018** as directed by the Agency.

5. MODIFICATION AND TERMINATION

This Agreement may be modified or amended only by written instrument signed by the parties hereto, and the Contractor's compensation and time of performance of this Agreement shall be adjusted if they are materially affected by such modification or amendment.

Any change in the scope of the professional services to be done, method of performance, nature of materials or price thereof, or to any other matter materially affecting the performance or nature of the professional services will not be paid for or accepted unless such change, addition or deletion be approved in advance, in writing, by the Agency's General Manager.

This Agreement may be terminated by the Agency at any time, without cause, upon written notification to the Contractor. The Contractor may terminate this Agreement upon 30 days written notice to Agency.

Following termination by the Agency or the Contractor, the Contractor shall be reimbursed for all expenditures made in good faith in accordance with the terms of this Agreement that are unpaid at the time of termination.

6. INDEMNIFY AND HOLD HARMLESS

When the law establishes a professional standard of care for the Contractor's services, to the fullest extent permitted by law, Contractor will defend, indemnify and hold harmless the Agency, its directors, officers, employees, and authorized volunteers from all claims and demands of all persons that arise out of, pertain to, or relate to the Contractor's negligence, recklessness, or willful misconduct in the performance (or actual or alleged non-performance) of the work under this agreement. The Contractor shall defend itself against any and all liabilities, claims, losses, damages, and costs arising out of or alleged to arise out of Contractor's performance or non-performance of the work hereunder, and shall not tender such claims to Agency nor to its directors, officers, employees, or authorized volunteers, for defense or indemnity.

Other than in the performance of professional services, to the fullest extent permitted by law, Contractor will defend, indemnify and hold harmless the Agency, its directors, officers, employees and authorized volunteers from all claims and demands of all persons arising out of the performance of the work or furnishing of materials; including but not limited to, claims by the Contractor or Contractor's employees for damages to persons or property except for the sole negligence or willful misconduct or active negligence of the Agency, its directors, officers, employees, or authorized volunteers.

7. INSURANCE

By his/her signature hereunder, Contractor certifies that he/she is aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and that Contractor will comply with such provisions before commencing the performance of the professional services under this agreement. Contractor and sub-contractors will keep workers' compensation insurance for their employees in effect during all work covered by this agreement.

Contractor will file with the Agency, before beginning professional services, a certificate of insurance satisfactory to the Agency evidencing professional liability coverage of not less than \$1,000,000 per claim and annual aggregate, requiring 30 days notice of cancellation (10 days for non-payment of premium) to the Agency. Any insurance, self-insurance or other coverage maintained by the Agency, its directors, officers, employees, or authorized volunteers shall not contribute to it. Coverage is to be placed with a carrier with an A.M. Best rating of no less than A-:VII, or equivalent, or as otherwise approved by the Agency. The retroactive date (if any) is to be no later than the effective date of this agreement. In the event that the Contractor employs other contractors (sub-contractors) as part of the work covered by this agreement, it shall be the Contractor's responsibility to require and confirm that each sub-contractor meets the minimum insurance requirements specified above.

Contractor will file with the Agency, before beginning professional services, certificates of insurance satisfactory to the Agency evidencing general liability coverage of not less than \$1,000,000 per occurrence (\$2,000,000 general and products-completed operations aggregate (if used)) for bodily injury, personal injury and property damage; auto liability of at least \$1,000,000 for bodily injury and property damage each accident limit; workers' compensation (statutory limits) and employer's liability (\$1,000,000) (if applicable); requiring 30 days (10 days for non-payment of premium) notice of cancellation to the Agency. Any insurance, self-insurance or other coverage maintained by the Agency, its directors, officers, employees, or authorized volunteers shall not contribute to it. The general liability coverage shall give the Agency, its directors, officers, employees, and authorized volunteers insured status using ISO endorsement CG2010, CG2033, or equivalent. Coverage is to be placed with a carrier with an A.M. Best rating of no less than A-:VII, or equivalent, or as otherwise approved by the Agency. In the event that the Contractor employs other contractors (sub-contractors) as part of the work covered by this agreement, it shall be the Contractor's responsibility to require and confirm that each sub-contractor meets the minimum insurance requirements specified above.

If any of the required coverages expire during the term of this agreement, the Contractor shall deliver the renewal certificate(s) including the general liability additional insured endorsement to the Agency at least ten (10) days prior to the expiration date.

8. COMPLIANCE WITH LAW

The Contractor shall be subject to and comply with all federal, state and local laws and regulations applicable with respect to its performance under this Agreement, including but not limited to, licensing, employment and purchasing practices; and wages, hours and conditions of employment.

9. SUBCONTRACT AND ASSIGNMENT

This Agreement binds the heirs, successors, assigns and representatives of the Contractor. The Contractor shall not enter into subcontracts for any work contemplated under this Agreement and shall not assign this Agreement or monies due or to become due, without the prior written consent of the General Manager of the Agency or his designee, subject to any required state or federal approval. *(Note: list any subcontractors here)*

10. NONRENEWAL

The Contractor understands and agrees that there is no representation, implication, or understanding that the services provided by the Contractor under this Agreement will be purchased by the Agency under a new agreement following expiration or termination of this Agreement, and waives all rights or claims to notice or hearing respecting any failure to continue purchase of all or any such services from the Contractor.

11. NOTICE

Any notice provided for herein are necessary to the performance of this Agreement and shall be given in writing by personal delivery or by prepaid first-class mail addressed as follows:

AGENCY

CONTRACTOR

Roland Sanford, General Manager
Solano County Water Agency
810 Vaca Valley Parkway, Suite 203
Vacaville, CA 95688

The parties have executed this Agreement the day and year first above written. If the Contractor is a corporation, documentation must be provided that the person signing below for the Contractor has the authority to do so.

Solano County Water Agency
a Public Agency

By: _____
Roland Sanford, General Manager
Solano County Water Agency

By: _____

EXHIBIT A

SCOPE OF SERVICES

Setup

1. Site Selection. Agency provides Waterfluence with account billing information (customer and historic water use files) for accounts to potentially add to program. Waterfluence consolidates accounts to sites and ranks sites by potential water savings. Agency selects sites to participate in program.
2. Platform Data. For selected sites, Waterfluence adds account billing information used in site selection into the Platform database. Waterfluence collects water prices and local weather data from CIMIS, NOAA, or other sources. Agency provides digital file of its logo.
3. Site Map. Waterfluence creates a map for each site using aerial imagery. The maps include square footage measurements of irrigated turf, irrigated shrubs/trees, and water features using Google Earth, ArcMap or similar.
4. Water Use Report. Waterfluence creates a one-page report for each site containing customer information, site characteristics, historical water use, a water budget range based on site characteristics and daily local weather matched exactly in time with billing cycle, customized messaging, and peer-based irrigation performance ranking.
5. Introduction Packet. Waterfluence produces and distributes a packet to each site that includes an introduction letter, FAQ, and Water Use Report. Waterfluence provides a generic introduction letter for Agency to customize. Waterfluence contacts each site about two weeks after sending the Introduction Packet to check if it got to the right person, get details about the site contacts (email addresses), identify the landscaper and/or others involved with irrigation decisions, and answer any questions about the program.
6. Platform Access. All site contacts get access to view their site information via the online Platform at www.waterfluence.com. Platform provides interactive water use charts, alerts and messages, and customized recommendations. Contacts can authorize third parties such as HOA board members and landscape contractors to also access their site information.
7. Agency Administrative Portal. Agency staff get an online portal to view all program information including site details, field survey queue, and summary statistics.

Annual Maintenance

1. Data Collection. At the beginning of each month, Agency forwards Waterfluence a file with the previous month's water use for accounts in the program. Waterfluence collects daily weather data from CIMIS, NOAA, or other sources and updates water rates when relevant. Waterfluence performs quality controls measures and updates all program information.
2. Report Distribution. Each month, Waterfluence either notifies online site contacts when updated information is ready to view or mails hard copies of the updated water use reports.
3. Contact Management. Waterfluence continually updates site contact information. This includes monitoring changes in account number, investigating returned mail envelopes, and investigating email bounce backs. The customer (water bill payer) can authorize third parties to view site information. Agency staff can assist with site contact management to maximize program engagement.

4. **Messaging.** Agency can have Waterfluence send specific messages to sites. Messages might include information on other landscape programs, events, useful hyperlinks, or irrigation policies.
5. **Customer Service.** Waterfluence provides customer service to site contacts via Platform messages, email and toll-free telephone number. Waterfluence will correct any map errors identified by site contacts or agency staff.
6. **Platform Maintenance.** Waterfluence continuously maintains the features and security of its online Platform software.

Landscape Field Surveys

1. **Targeting and Marketing.** Using the Agency Administrative Portal, Agency staff can target / preapprove sites eligible to receive a field survey. The Platform will market the field survey opportunity to preapproved sites. Preapproved sites can accept the field survey opportunity via the platform with a click-through agreement. Sites accepting a field survey will be added to our field survey queue.
2. **Performing Field Surveys.** Waterfluence staff will schedule field surveys for sites in the queue. The survey process includes: (1) refining the site map and water budget assumptions, (2) operating portions of the irrigation system to evaluate performance, and (3) document findings and recommendations in a Landscape Field Survey Report.
3. **Distributing Field Survey Report.** Completed field survey reports will be posted online and all site contacts notified. Waterfluence will address any follow up questions. The Agency Administrative Portal documents all field survey activity, dates, and final report.

EXHIBIT B

RATE OF COMPENSATION

Waterfluence Annual Program Fees			
Description	Unit Cost	x Quantity Number of Sites	= Total Cost
Startup (one time)	\$150		
Annual Subscription	\$75		
Landscape Field Surveys	\$1,500		
Total			

**ACTION OF
SOLANO COUNTY WATER AGENCY**

DATE: October 12, 2017

SUBJECT: STATE WATER PROJECT TOLLING AGREEMENT

RECOMMENDATION:

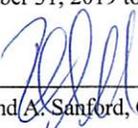
Authorize General Manager to execute seventh amendment to Tolling Waiver Agreement with the California Department of Water Resources, regarding State Water Project charges.

FINANCIAL IMPACT:

None.

BACKGROUND:

The California Department of Water Resources - operators of the State Water Project - requires annual protest letters to challenge State Water Project charges identified in the annual Statement of Charges for the State Water Project. The proposed seventh amendment to the Tolling Waiver Agreement is in essence the required annual protest letter. Together, the Tolling Waiver Agreement and associated amendments constitute a list of disputed charges. Among other things, the proposed seventh amendment extends the term of the Tolling Waiver Agreement to December 31, 2019 to allow all parties additional time to resolve disputed charges.

Recommended: 
Roland A. Sanford, General Manager

Approved as
recommended

Other
(see below)

Continued on
next page

Modification to Recommendation and/or other actions:

I, Roland A. Sanford, General Manager and Secretary to the Solano County Water Agency, do hereby certify that the foregoing action was regularly introduced, passed, and adopted by said Board of Directors at a regular meeting thereof held on October 12, 2017 by the following vote.

Ayes:

Noes:

Abstain:

Absent:

Roland A. Sanford
General Manager & Secretary to the
Solano County Water Agency

SEVENTH AMENDMENT TO TOLLING AND WAIVER AGREEMENT

This SEVENTH AMENDMENT TO TOLLING AND WAIVER AGREEMENT (“Seventh Amendment”), which shall be effective as of December 15, 2017 (“Effective Date of Seventh Amendment”), is entered into by and between _____ (“AGENCY”) and the CALIFORNIA DEPARTMENT OF WATER RESOURCES (“DWR”). AGENCY and DWR are referred to individually as a “Party” and collectively as the “Parties.”

RECITALS

A. In 2007, the Parties entered into a Tolling and Waiver Agreement (“Agreement”), and thereafter entered into the First Amendment with an effective date of December 15, 2007 (“First Amendment”), Second Amendment with an effective date of December 15, 2008 (“Second Amendment”), Third Amendment with an effective date of September 15, 2009 (“Third Amendment”), Fourth Amendment with an effective date of December 15, 2010 (“Fourth Amendment”), Fifth Amendment with an effective date of December 15, 2012 (“Fifth Amendment”) and Sixth Amendment with an effective date of December 15, 2015 (“Sixth Amendment”). Except as otherwise set forth in this Seventh Amendment, capitalized terms have the meanings given to such terms in the Agreement, as amended.

B. Among other things, the Agreement, as currently amended through the Sixth Amendment, tolls the statute of limitations with regard to certain Claims beginning with the Effective Date of the Agreement through and including December 31, 2017. The Claims specified in the Agreement, as amended through the Sixth Amendment, include, with certain exceptions, DWR’s bills to the Contractors for calendar years 2007 through and including 2018, but do not include bills for subsequent years.

C. Thus, in the absence of an amendment to extend the tolling period beyond December 31, 2017, AGENCY will be required to formally protest and/or take other legal action to preserve its rights to pursue Claims under the Agreement, as amended, upon expiration of the tolling period on December 31, 2017. In addition, in the absence of an amendment to the Agreement regarding the SWP bills for 2019 and 2020, AGENCY will be required to formally

**Seventh Amendment to
Tolling and Waiver Agreement**

protest its SWP bills for 2019 and 2020 and/or take other legal action to preserve any claims it may have with respect to such bills.

D. The Parties currently are engaged in good faith discussions concerning a possible resolution of the claims related to the SWP bills issued for calendar years 2007 through and including 2018, and certain other claims related to the State Water Project. In order to facilitate these discussions, the Parties agree that the applicable tolling period for pursuing Claims as set out in the Agreement, as amended, (with the exception of the issues set out in Exhibit 1, Exhibit 2A and Exhibit 2B) should be extended through December 31, 2019 and that claims related to the SWP bills issued by DWR for 2019 and 2020, including any revisions made on or before December 31, 2019, should also be tolled.

E. The Parties also recognize that there may be issues that they are not able to resolve through good faith discussions and that a Party to this Agreement and/or a Contractor which has entered into a similar, but separate, tolling and waiver agreement with DWR may desire to seek formal dispute resolution or other legal action on such issues before the end of the tolling period on December 31, 2019. Accordingly, the Parties have included procedures in this Agreement, as amended, and DWR has included similar procedures in its tolling and waiver agreements with other Contractors to allow any party (including DWR) to exclude issues from the tolling provisions before the end of the tolling period and to have such exclusion apply to and bind DWR and all other Contractors with tolling and waiver agreements with DWR.

NOW, THEREFORE, AGENCY and DWR, for good and adequate consideration, the sufficiency of which is hereby acknowledged, agree to the following:

TERMS OF SEVENTH AMENDMENT

1. The text in Paragraph 1(b) of the Agreement, as amended by the Sixth Amendment, is deleted in its entirety and replaced with the following text, shown here in italics:

(b) (i) The term "Claims" is broadly defined to include any and all claims for relief, actions, suits, causes of action, damages, debts, costs, demands, losses, liabilities and obligations of whatever nature, whether legal or equitable, and notices of contest under

Seventh Amendment to
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Article 29(i) of the State Water Contracts that arise out of or are related to: (1) the Metropolitan Claim; (2) the use, prior to July 1, 2006, of revenue bond proceeds and commercial paper note proceeds to pay "costs incurred for the enhancement of fish and wildlife or for the development of public recreation"; (3) the related establishment, restatement or adjustment of charges and rate reductions under the State Water Contracts; (4) the accounting for the costs of the San Joaquin Drainage Program; (5) the allocation of the costs of certain facilities in the Delta to the purposes of the development of public recreation and the enhancement of fish and wildlife; (6) DWR's bills to the Contractors for calendar years 2007 through and including 2020, including any revisions to such bills made on or before December 31, 2019; provided that the term "Claims" does not include the issue set out in Exhibit 1, attached hereto, effective January 1, 2009; the issues set out in Exhibit 2A, attached hereto, effective January 1, 2016 and the issues set out in Exhibit 2B, attached hereto, effective January 1, 2018. To the extent the issue set out in Exhibit 1 was heretofore included within the term "Claims", the Tolling Period Expiration Date for such issue as used in Paragraph 4 shall be deemed to be December 31, 2008. To the extent the issues set out in Exhibit 2A were heretofore included within the term "Claims", the Tolling Period Expiration Date for such issues as used in Paragraph 4 shall be deemed to be December 31, 2015. To the extent the issues set out in Exhibit 2B were heretofore included within the term "Claims", the Tolling Period Expiration Date for such issues as used in Paragraph 4 shall be deemed to be December 31, 2017. In addition, the term "Claims" shall not include any issue to the extent such issue is excluded from the term "Claims" pursuant to the provisions of Paragraph 1(b)(ii) or 1(b)(iii)

(ii) Any Party (including DWR) to this Agreement may elect to remove one or more of the issues set out in Exhibit 3 from the term "Claims" by giving 60 days advance written notice to DWR and the other Contractors which have tolling and waiver agreements with DWR with a tolling period expiration date that has been extended to December 31, 2019. Such notice shall specify the effective date of such exclusion and shall apply to and be binding upon DWR and the other Contractors listed in Exhibit 4 which have a tolling and waiver agreement with DWR with a tolling period expiration

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date that has been extended to December 31, 2019. Exhibit 4 contains a listing of all water contractors which entered into the previous tolling and waiver agreement amendment extending the tolling period to December 31, 2017, and which are expected to enter into amendments to extend their tolling periods to December 31, 2019. To be effective, such notice must be received by DWR and shall be effective as to all other Contractors with tolling and waiver agreements with DWR with a tolling period expiration date that has been extended to December 31, 2019, even if one or more of such Contractors do not receive such notice. The effect of such notice by one Party or by any Contractor with a tolling and waiver agreement with DWR shall be to exclude such issue or issues from the term "Claims" in this Agreement and in the tolling and waiver agreements of DWR and the other Contractors listed in Exhibit 4 with a tolling period expiration date that has been extended to December 31, 2019. To the extent the issue or issues set out in the notice were heretofore included within the term "Claims", the Tolling Period Expiration Date for each such issue as used in Paragraph 4 shall be the issue exclusion date so specified in the notice.

(iii) Any Party (including DWR) to this Agreement may elect to remove one or more issues (other than those listed in Exhibit 3, which are addressed in Paragraph 1(b)(ii)) from the definition of the term "Claims" by giving 120 days advance written notice to DWR and the other Contractors which have tolling and waiver agreements with DWR with a tolling period expiration date that has been extended to December 31, 2019; provided, however, that such Party (if other than DWR) shall notify DWR at least 30 days in advance of the issuance of such 120 day notice and allow DWR the opportunity to discuss the matter with that Party. The Party shall use its best efforts to describe clearly in the notice the issue or issues to be excluded and shall specify the effective date of such exclusion. The notice shall apply to and be binding upon DWR and the other Contractors listed in Exhibit 4 which have a tolling and waiver agreement with DWR with a tolling period expiration date that has been extended to December 31, 2019. To be effective, such notice must be received by DWR and shall be effective as to all other Contractors with tolling and waiver agreements with DWR with a tolling period expiration date that has been extended to December 31, 2019, even if one or more of such Contractors do not

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receive such notice. The effect of such notice by one Party or by any Contractor with a tolling and waiver agreement with DWR shall be to exclude such issue or issues from the term "Claims" in this Agreement and in the tolling and waiver agreements of DWR and the other Contractors listed in Exhibit 4 with a tolling period expiration date that has been extended to December 31, 2019. To the extent the issue or issues set out in the notice were heretofore included within the term "Claims", the Tolling Period Expiration Date for each such issue as used in Paragraph 4 shall be the issue exclusion date so specified in the notice.

2. The text in Paragraph 4 of the Agreement, as amended by the Sixth Amendment, is deleted in its entirety and replaced with the following text, shown here in italics:

The Tolling Period Expiration Date is December 31, 2019; provided that DWR may, upon giving 60 days advance written notice to Agency, change the Tolling Period Expiration Date to a date earlier than December 31, 2019 if the sum of the maximum Table A amounts for all Contractors who enter into a Seventh Amendment to the Tolling and Waiver Agreement with DWR (plus the Table A amount for the County of Butte, if the County enters into a Sixth Amendment to the Tolling and Waiver Agreement with DWR) is less than 95% of the sum of the maximum Table A amounts for the 27 Contractors who signed the Monterey Amendment; and provided further that the Tolling Period Expiration Date as to any specific issue may be set at an earlier date pursuant to the provisions of Paragraph 1(b)(ii) or 1(b)(iii). For the time period between the Effective Date of the Agreement and the Tolling Period Expiration Date, inclusive (the "Tolling Period"), Agency and DWR agree that, except as provided for in this Agreement, all Periods of Limitation applicable to all Claims between the Parties, including without limitation those described in the Metropolitan Claim, shall be tolled and waived, shall not run or expire, and shall not operate in any manner so as to prejudice, bar, limit, create a defense to or in any way restrict Claims between the Parties. Except as provided in Paragraph 2 herein, after the Tolling Period Expiration Date, the Parties shall have the same rights, remedies, and damages each of them had on the Effective Date of the Agreement and the Tolling Period shall be excluded from any time calculation in determining whether any period of limitations has run; provided, however, that with

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regard to Claims pertaining to DWR's bills to the Contractors for calendar years 2007 through and including 2020, AGENCY shall have until 60 days from the Tolling Period Expiration Date to submit notices of contest to DWR for Claims pertaining to any such bills for calendar years 2007 through and including 2020. Except for the Parties' waiver of the Statute of Limitations as provided herein and except as provided in Paragraph 2 herein, this Agreement shall not operate as a waiver of any Claims or defenses that either Party may have against the other.

3. Exhibit 1, entitled "Issue Not Included in the Term "Claims" Effective January 1, 2009", which title was changed by the Fifth Amendment, remains unchanged as a part of this Agreement and is attached.

4. Exhibit 2, entitled "Issues Not Included in the Term "Claims" for Purposes of the Tolling and Waiver Agreement Extension Beginning January 1, 2013", which was added by the Fifth Amendment, did not have any issues listed and was therefore deleted in its entirety and replaced in the Sixth Amendment by Exhibit 2, entitled "Issues Not Included in the Term "Claims" Effective January 1, 2016". Exhibit 2 is hereby renumbered as Exhibit 2A and remains entitled "Issues Not Included in the Term "Claims" Effective January 1, 2016 and is attached and remains a part of this Agreement.

5. Exhibit 2B, entitled "Issues Not Included in the Term "Claims" Effective January 1, 2018", is attached and made a part of this Agreement.

6. Exhibit 3, entitled "Issues that May be Excluded from the Term "Claims" upon 60 Days Advance Notice", which was added by the Fourth Amendment, is amended by listing additional issues, if any, to issues 1 and 2 previously listed therein, and such Exhibit 3 as amended is attached and remains a part of this Agreement.

7. Exhibit 4, entitled "Contractors which Signed Prior Tolling Agreement Amendment Extending Tolling Period to December 31, 2015 and which are Expected to Enter into Amendment to Extend Tolling Period to December 31, 2017", which was added by the Sixth

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Amendment, is deleted in its entirety and replaced by Exhibit 4 entitled "Contractors which Signed Prior Tolling Agreement Amendment Extending Tolling Period to December 31, 2017, and which are Expected to Enter into Amendment to Extend Tolling Period to December 31, 2019", which is attached and made a part of this Agreement.

8. All other terms and conditions of the Agreement, as amended, are unchanged by this Seventh Amendment and shall remain in full force and effect.

9. In consideration of the extension of the tolling period provided by this Seventh Amendment, the Parties intend to continue to use their best efforts to discuss and seek to resolve, in a timely manner, as many of the remaining issues as practicable that have been tolled by this agreement or that have otherwise been raised in the resolution process established in response to this Agreement.

10. Each individual signing below represents and warrants that he or she is authorized to execute this Seventh Amendment on behalf of the respective Parties to this Seventh Amendment and does so freely and voluntarily.

11. Each Party warrants and represents that, in executing this Seventh Amendment, it has relied upon legal advice from counsel of its choice; that the terms of this Seventh Amendment have been read and its consequences have been completely explained to it by counsel; that it fully understands the terms of this Seventh Amendment; and that it knows of no reason why this Seventh Amendment shall not be a valid and binding agreement of that Party.

12. This Seventh Amendment may be executed in counterparts.

DATED: _____

SPENCER KENNER
Chief Counsel
Attorney for DWR

DATED: _____

Name:

**Seventh Amendment to
Tolling and Waiver Agreement**

**Title:
For AGENCY**

EXHIBIT 1

**ISSUE NOT INCLUDED IN THE TERM "CLAIMS"
EFFECTIVE JANUARY 1, 2009**

1. The validity of charges for costs incurred by DWR at Perris Reservoir for beach sand, the ADA fishing pier, and marina repairs and relocation, which have been billed to and included in the annual Statements of Charges issued to Metropolitan Water District, Coachella Valley Water District and Desert Water Agency for calendar years 2008 and 2009.

EXHIBIT 2A

ISSUES NOT INCLUDED IN THE TERM "CLAIMS" EFFECTIVE JANUARY 1, 2016

FOR THE COMPLETE LIST OF "ISSUES NOT INCLUDED IN THE TERM "CLAIMS" EFFECTIVE JANUARY 1, 2016" PLEASE REFER TO EXHIBIT 2 IN THE SIXTH AMENDMENT. THOSE ISSUES ARE DEEMED INCORPORATED HEREIN AS THOUGH FULLY SET FORTH IN THIS EXHIBIT 2A.

EXHIBIT 2B

ISSUES NOT INCLUDED IN THE TERM "CLAIMS" EFFECTIVE JANUARY 1, 2018

1. Whether the delta cross channel study costs and other Delta-related costs totaling approximately \$5,960,000 were improperly allocated statewide from 2009-2014 instead of through the Delta Water Charge. Resolution: The Department corrected the allocation by reallocating the costs to Reach 300 in the Delta and this was reflected in the 2016 and 2017 Statements of Charges.
2. Whether the Central Coast Water Agency on behalf of Santa Barbara overpaid the Coastal Extension debt service by approximately \$328,882 as of 4/20/2010. Resolution: The Department verified that the overpayment amounted to approximately \$328,882 as of April 20, 2010 and credited back the overpayment to Santa Barbara and this was reflected in the 2011 Statements of Charges.
3. Whether the litigation settlement costs of approximately \$2 million for the San Luis Canal and Arroyo Pasajero Flood Control Improvement Project were incorrectly allocated to the Contractors in 2010. Resolution: The Department reviewed this item and determined that it had correctly allocated the costs to the Contractors and no changes were necessary.
4. Whether the 2009 LADWP peaking credit of approximately \$583,000 was included twice in the transportation variable charges. Resolution: The Department removed the duplicate peaking credit of approximately \$583,000 and this was reflected in the 2017 Statements of Charges.
5. Whether a reconciliation of the 2009 power data compiled by the Joint Operations Center (JOC) and SWPAO was not performed by the Department and whether the 2009 Preliminary Allocation of Power Costs (PALPOC) has not been reconciled to the Department's Accounting software (SAP) in the 2011 Statements of Charges. Resolution: The Department does not reconcile the PALPOC to the JOC, only to the Financial Accounting System (PR5) and then it becomes a Final Allocation of Power Cost (FALPOC). The Department, therefore, determined no corrective action is required.
6. Whether replacement parts totaling approximately \$1,195,000 were included in the Delta Water Charge in error. Resolution: The replacement parts were purchased as inventory therefore the costs were properly included in the Delta Water Charge. The costs will be removed from and credited to the Delta Water Charge and included in and paid from the Replacement Accounting System when the replacement parts are placed in service.

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- 7. Whether the Delta-related costs in cost center 1101FAD890 were incorrectly allocated statewide. Resolution: The Department reallocated the costs back to Reach 300 in the Delta and this was reflected in the 2015 Statements of Charges.**
- 8. Whether the 2013 variable charges were overstated by approximately \$225,000 due to the misposting of a credit for Hyatt Thermalito refurbishment costs. Resolution: The Department corrected the posting of this credit and this was reflected in the 2017 Statements of Charges.**
- 9. Whether expenditures were posted with an incorrect cost element in the accounting system related to gas hedging fee credits in the Utility Cost Allocation Billing System (UCABS), but were not reflected in the Financial Accounting System (PR5), causing an imbalance between the two systems in the 2013 Statements of Charges. Resolution: In September 2015, the Department reversed the credits that were incorrectly posted in UCABS, totaling approximately \$973,666. The balance in UCABS and PR5 are now the same.**
- 10. Whether multiple reach allocations (alpha allocation cycles) for 2011 used the 2010 listing of functional areas, resulting in an understatement to Metropolitan by \$8,291. Resolution: The Department updated the alpha allocation cycles through 2013, and the change was reflected in 2014 Statements of Charges.**
- 11. Whether the incremental revenues and incremental costs in the calculation of the 2013 Delta Water Charges included errors. Resolution: The Department corrected the incremental revenues and incremental costs in the calculation of the 2013 Delta Water Charges and this was reflected in the 2014 Statements of Charges.**
- 12. Whether station service credits were miscalculated for 2011 by using 2009 estimated station service energy and excluding East Branch Extension plants from the calculation in the 2013 Statements of Charges. Resolution: The Department updated station service credits to include East Branch Extension plants in the calculation for 2011 and this was reflected in the 2016 Statements of Charges.**
- 13. Whether replacement parts for Edmonston and Chrisman Pumping Plants totaling approximately \$2,900,000 were included in the transportation minimum component in error. Resolution: The replacement parts were purchased as inventory. Therefore the costs were properly included in transportation minimum component. The costs will be removed from and credited to the transportation minimum component and included in and paid from the Replacement Accounting System when the replacement parts are placed in service.**
- 14. Whether water data used to calculate the 2012 off-aqueduct charges were outdated, resulting in an overstatement of Metropolitan's refund. Resolution: The Department updated water delivery data to calculate 2012 off-aqueduct power**

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charges and the change was reflected in the final version of water delivery data released in May 2014.

15. Whether multiple reach allocations (alpha allocation cycles) for 2012 should not have used the 2010 listing of functional areas. Resolution: The Department updated the alpha allocation cycles through 2013 and the change was reflected in 2014 Statements of Charges.
16. Whether costs related to the LOSBANOS cost center group were miscalculated in the three-year average calculation in the 2014 Statements of Charges. Resolution: The Department corrected a formula error that incorrectly included a three-year average value. This correction was reflected in the 2015 Statements of Charges.
17. Whether the Department manually included the project costs for the San Joaquin River Flow Augmentation Program (SJRFAP) in the Delta Water Charge calculation for 2013 and removed these costs in the subsequent year through the Delta Water Charge (DWC) calculation causing a present value misstatement. Resolution: The Department reviewed this item and determined that the Department's approach was consistent with the Contractors' Board of Director's prior recommendation and that; therefore, no changes are required.
18. Whether station service credits were miscalculated for 2012 by excluding East Branch Extension plants from the calculation in the 2014 Statements of Charges. Resolution: The Department updated the station service credits to include East Branch Extension plants in the calculation for 2012 and this was reflected in the 2016 Statements of Charges.
19. Whether there is a variance in the 2014 Statements of Charges between the Contractors' variable transportation component for 2012 included in Attachment 4C when compared to SAP. Resolution: The Department corrected this item in the Rebill for 2014 Statements of Charges by using actual costs from SAP, totaling approximately \$187,445,000.
20. Whether CAISO ancillary services revenue for 2014 and 2015 were incorrectly entered in the 2015 Statements of Charges. Resolution: The Department adjusted the calculations with a positive value, rather than a negative value, which decreased net power costs. This was only a projection issue that occurred within years that were 100% projection based. This was corrected for the variable projections in 2015 and this was reflected in the 2016 Statements of Charges.
21. Whether 2015 costs totaling approximately \$3.7 million that appear to benefit the Oroville Division were allocated statewide through the conservation and transportation minimum components. Resolution: The Department revised costs totaling approximately \$3.1 million that benefit the Oroville Division from a

**Seventh Amendment to
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statewide allocation to the Oroville Division and this was reflected in the 2017 Statements of Charges.

22. Whether the Department improperly reversed a credit of approximately \$420,000 recorded in 2006 for Hyatt refurbishment project related costs and charged it to the contractors in the 2013 Statements of Charges, Resolution: The Department removed the charge of approximately \$420,000 and the change was reflected in the 2017 Statements of Charges.
23. Whether costs totaling approximately \$4,400,000 related to the fish science building and the Curtis Landing fish release site were double counted in the 2015 Statements of Charges. Resolution: The Department adjusted the accounting entries for the costs related to the fish science building and the Curtis Landing fish release site to remove the double counting and this was reflected in the rebill of the 2015 Statements of Charges.
24. Whether two recreation cost centers (M540395142 and M540395242) were improperly included in the calculation of the Contractor's charges and one cost center (M540395112) was improperly excluded. Resolution: The Department removed the two recreation cost centers and included the one cost center in the calculation of the Contractor's charges and this was reflected in the 2016 Statements of Charges.
25. Whether revenues totaling approximately \$428,000 from a contract between the Department and the East Contra Costa Irrigation District were not properly included to reduce the Contractor's charges. Resolution: The Department included the revenues from the East Contra Costa Irrigation District contract to reduce the Contractors' charges and this was reflected in the 2016 Statements of Charges.
26. Whether the mill rates of 96 and 137 to compute 2014 recovery generation charges for Alamo and Mojave Siphon, respectively, were incorrect in the 2015 Statements of Charges. Resolution: The Department corrected the mill rates and used 92 and 140 as presented in the Bulletin 132-14 and the change was reflected in the 2016 Statements of Charges.
27. Whether the methodology for calculating projected O&M costs used in the Alamo recovery generation calculation was improperly modified for the 2015 Statements of Charges. Resolution: The Department applied the previous method using the most recent three-year average for calculating projected O&M costs and the change was reflected in the 2016 Statements of Charges.
28. Whether 2015 compliance costs of approximately \$432,000 were improperly excluded from the transportation minimum component. Resolution: The Department corrected this by including the compliance costs totaling

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approximately \$432,000 in the transportation minimum component and this was reflected in the 2016 Statements of Charges.

29. Whether the 2013 estimate for Southern California power facility relicensing costs was used to compute the contractors' 2014 variable charges instead of the 2014 estimate. Resolution: The Department reviewed the issue and determined to capitalize the Southern California power facility relicensing costs (FERC 2426) for 2013 and forward. The revisions were reflected in the 2015 Statements of Charges Rebill.
30. Whether the cost center C540395112, which was created in 2012, was not included in the Cost Allocation and Repayment Analysis Cost Center System's (CARACCS) hierarchy until after the Department calculated the capital Delta Water Charge for 2015. Resolution: The Department added the cost center C540395112 to the CARACCS hierarchy and it was reflected in the capital Delta Water Charge. This was included in the November 2014 Rebill of the 2015 Statements of Charges.
31. Whether a cost center (M540395112), created in 2013, was not properly included in the calculation of the Delta Water Charge minimum component. Resolution: The Department included the cost center in the calculation of the Delta Water Charge minimum component and this was reflected in the rebill of the 2015 Statements of Charges.
32. Whether the calculation of the Hyatt-Thermalito credit did not include the Thermalito debt service charge and resulted in an overstatement of Metropolitan's capital costs in the 2014 Statements of Charges. Resolution: The Department included the Thermalito debt service charge in the calculation of the Hyatt-Thermalito credit and the revision was reflected in the 2015 Statements of Charges Rebill.
33. Whether the Coastal reallocation did not include all transportation minimum costs that were allocated to Reaches 33B, 34, and 35 in years 2000 - 2013. Resolution: The Department corrected the Coastal reallocation to include all transportation minimum costs of Reaches 33B, 34, and 35 and this was reflected in the 2014 Rebill of the 2015 Statements of Charges.
34. Whether a cost of \$11,546 was improperly charged directly to reach CA-28G, rather than the Southern Field Division in the 2013 Statements of Charges. Resolution: The Department reviewed the issue and determined the cost was properly allocated and charged.
35. Whether a new cost center (C540391212) was not properly included in the calculation of the Delta Water Charge capital component of the 2015 Statements of Charges. Resolution: The Department included the cost center in the

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calculation of the Delta Water Charge capital component and this was reflected in the rebill of the 2015 Statements of Charges.

36. Whether there were discrepancies in the amounts of water billed versus delivered to the Central Coast Water Agency in 2011 and 2014. Resolution: The Department corrected the water data for 2011 and this was reflected in the 2018 Statements of Charges. The Department reviewed and determined that no changes are required to the 2014 water data.
37. Whether the Hyatt Unit 6 leak investigation costs of approximately \$7,543,000 were double billed when entries were made to move the costs from the conservation minimum to the conservation capital component in 2014. Resolution: The Department corrected the double billing of the Hyatt Unit 6 investigation costs and this was reflected in the 2017 Statements of Charges.
38. Whether South Bay Improvement debt service costs included in the variable charges were overstated for 2015 by approximately \$31,000. Resolution: The Department reduced the South Bay Improvement debt service costs included in the variable charges for 2015 by approximately \$29,000 and this was reflected in the 2017 Statements of Charges.
39. Whether the 2015 Hyatt Thermalito Operations & Maintenance estimate included in the computation of the variable component is understated by approximately \$334,000 and the 2016 Hyatt Thermalito Operations & Maintenance estimate included as a credit in the computation of the Delta Water Rate is understated by approximately \$70,000. Resolution: The Department corrected these items and these changes were reflected in the 2017 Statements of Charges.
40. Whether the adjustments to reflect the use of emission allowances were improperly excluded from the 2013 and 2014 variable charges. Resolution: The Department included the emission allowances adjustments in the 2013 and 2014 variable charges and this was reflected in the 2017 Statements of Charges.
41. Whether the renewable power procurement costs of approximately \$8,004,000 were improperly excluded from the net power costs for 2016. Resolution: The Department included the renewable power procurement costs totaling approximately \$8,004,000 in the net power costs for 2016 and this was reflected in the 2017 Statements of Charges.

EXHIBIT 3

**ISSUES THAT MAY BE EXCLUDED FROM THE TERM "CLAIMS" UPON 60 DAYS
ADVANCE NOTICE**

1. The Department of Water Resources' change in funding the costs of the San Joaquin Valley Drainage program from the Capital Facilities Account (as established pursuant to Article 51 (b) (1) of the State Water Contract) prior to 2006 to operations and maintenance costs beginning in 2006, but not including the Department's retention of unused Capital Facility Account balances in 2006 and 2007 for anticipated future year capital expenditures (which retention issue shall not be subject to exclusion upon 60 days notice).

2. All Claims arising out of or related to the determination, allocation and/or payment of fish and wildlife enhancement and recreation costs incurred in constructing, operating and maintaining the State Water Project Perris Reservoir and any of its appurtenant, ancillary or related facilities, including, but not limited to, such costs associated with any actions taken at Perris Reservoir to address seismic safety issues. ("Claims" as used in this item 2, does not include the issue described in Exhibit 1, item 1.)

Seventh Amendment to
Tolling and Waiver Agreement

EXHIBIT 4

**CONTRACTORS WHICH SIGNED PRIOR TOLLING AGREEMENT AMENDMENT
EXTENDING TOLLING PERIOD TO DECEMBER 31, 2017 AND WHICH ARE EXPECTED
TO ENTER INTO AMENDMENT TO EXTEND TOLLING PERIOD TO
DECEMBER 31, 2019**

Jill Duerig, General Manager
Alameda County FC&WCD, Zone 7
100 North Canyons Parkway
Livermore, CA 94551

Dale Melville, Manager-Engineer
Dudley Ridge Water District
286 W. Cromwell Ave
Fresno, CA 93711-6162

Robert Shaver, General Manager
Alameda County Water District
43885 So. Grimmer Blvd.
Fremont, CA 94537

John Howe, Manager
Empire West Side Irrigation District
P.O. Box 66
Stratford, CA 93266

Dwayne Chisam, General Manager
Antelope Valley/East Kern Water Agency
6500 West Avenue N
Palmdale, CA 93551-2855

Curtis Creel, General Manager
Kern County Water Agency
P.O. Box 58
Bakersfield, CA 93302

Bruce Alpert, County Counsel
Butte County
2279 Del Oro Avenue, Suite A
Oroville, CA 95965

Larry Spikes, Administrative Officer
County Of Kings
1400 West Lacey Blvd
Hanford, CA 93230

Matthew Stone, General Manager
Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350

James Chaisson, General Manager
Littlerock Creek Irrigation District
35141 N.87th Street East
Littlerock, CA 93543

Steve Kroeger, City Manager
City of Yuba City
1201 Civic Center Blvd
Yuba City, CA 95993

Jeff Kightlinger, General Manager
Metropolitan Water District
P.O. Box 54153
Los Angeles, CA 90054

Jim Barrett, General Manager
Coachella Valley Water District
P.O. Box 1058
Coachella, CA 92236

Tom McCarthy, General Manager
Mojave Water Agency
13846 Conference Center Drive
Apple Valley, CA 92307

Roxanne Holmes, General Manager
Crestline/Lake Arrowhead Water Agency
P.O. Box 3880
Crestline, CA 92325

Phillip Miller, District Engineer
Napa County FC & WCD
1195 Third Street, Room 201
Napa, CA 94559

**Seventh Amendment to
Tolling and Waiver Agreement**

**Mark Krause, General Manager
Desert Water Agency
P.O. Box 1710
Palm Springs, CA 92263-1710**

**Anthea Hansen, Manager
Oak Flat Water District
P.O. Box 1596 / 17840 Ward Avenue
Patterson, CA 95363**

**Dennis Lamoreaux, General Manager
Palmdale Water District
2029 East Avenue Q
Palmdale, CA 93550**

**Norma Camacho, Chief Executive Officer
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118**

**Douglas Headrick, General Manager
San Bernardino Valley MWD
380 East Vanderbilt Way
San Bernardino, CA 92408**

**Roland Sanford, General Manager
Solano County Water Agency
810 Vaca Valley Parkway
Vacaville, CA 95688**

**Darin Kasamoto, General Manager
San Gabriel Valley MWD
P.O. Box 1299
Azusa, CA 91702**

**Mark Gilkey, General Manager
Tulare Lake Basin WSD
1001 Chase Avenue
Corcoran, CA 93212**

**Jeff Davis, General Manager
San Geronio Pass Water Agency
1210 Beaumont Avenue
Beaumont, CA 92223**

**Glenn Shephard, Director
Ventura County Watershed Protection District
800 S. Victoria Avenue
Ventura, CA 93009-1600**

and

**Mark Hutchinson, Deputy Director
San Luis Obispo County FC&WCD
976 Osos Street, Room 206
San Luis Obispo, CA 93408**

**Steve Wickstrum, General Manager
Casitas Municipal Water District
1055 Ventura Avenue
Oakview, CA 93022-9622**

**Fray Crease, Water Agency Manager
Santa Barbara County Water Agency
123 East Anapamu Street, 2nd Floor
Santa Barbara, CA 93101-2058**

and

**Ray Stokes, Executive Director
Central Coast Water Agency
255 Industrial Way
Buellton, CA 93427-9565**

SOLANO COUNTY WATER AGENCY



MEMORANDUM

TO: Board of Directors

FROM: Roland Sanford, General Manager

DATE: October 5, 2017

SUBJECT: October 2017 General Manager's Report

Cache Slough Complex

The Cache Slough Complex (CSC); located at the downstream end of the Yolo Bypass, in Solano County, is widely perceived by State and Federal resource agencies as an ideal setting for large scale habitat conservation and restoration. By virtue of its location and in view of the State and Federal interest in habitat conservation and restoration, the CSC and more specifically, what becomes of the CSC, is critically important to the Water Agency and the County's water supply future.

The North Bay Aqueduct is located in the CSC and water released from the Solano Project to Lower Putah Creek flows into the Yolo Bypass and ultimately through the CSC. The CSC also includes the southern portion of the Solano groundwater sub-basin, and nearly all of the CSC is located within the service area of the North Delta Water Agency. Simply stated, most of Solano County's urban and agricultural water supply is in some way connected to the CSC – either as the source or as a conduit.

In addition to water supply, the Water Agency's interest in the CSC also extends to flood control and most notably, operation and maintenance of the Ulatis Flood Control Project. The Ulatis Flood Control Project, portions of which are located in and near the City of Vacaville, ultimately drains to the CSC.

Much has been said about the potential conflict between the operation of the NBA intake at Barker Slough, within the CSC, and ongoing habitat conservation and restoration efforts. How the Solano Project and other surface water supplies, management of the Solano groundwater sub-basin, and/or operation and maintenance of the Ulatis Flood Control Project potentially impact the ecology of the CSC – for better or worse - is not well documented and largely unknown. Ignorance is bliss – so it has been said. Ignorance can also be fatal.

810 Vaca Valley Parkway, Suite 203
Vacaville, California 95688
Phone (707) 451-6090 • FAX (707) 451-6099
www.scwa2.com



Given the strategic importance of the CSC and our current understanding, or lack thereof, I feel strongly that the Water Agency must make significant investments to secure the information that will ultimately be needed to not only protect the Water Agency's interests vis-à-vis water supply and flood control, but to also place the Water Agency in a better position to leverage those interests, should the opportunities arise. Agenda Item 9, the proposed 3-Year Cache Slough Complex Water Quality, Productivity and Fisheries Study, is one such investment.

Late breaking news: Bay-Delta Plan Update documents released

On Wednesday, October 4, 2017 the State Water Resources Control Board released the final "Phase II Update of the Bay-Delta Plan: Inflows to the Sacramento River and Delta and Tributaries, Delta Outflows, Cold Water Habitat and Interior Delta Flows" document, which among other things is intended to provide the scientific basis for increased reservoir releases to the Bay-Delta. Staff commented on the draft report and will be reviewing the final report in the coming days. A State Water Resources Control Board "Fact Sheet" and supporting documents describing the Phase II Update of the Bay-Delta Plan and process by which stream flow releases will be determined is attached. At the moment there are more good questions than good answers.

Coastal Cleanup Day – tons of trash

September 16th was Coastal Cleanup Day. During the day, 143 volunteers removed 5,212 pounds of trash from Lower Putah Creek and portions of Dry Creek, near Winters. The good news is that fewer mattresses, electronics and appliances were found, in comparison to prior years. Tires, spray paint cans, cigarette butts, beverage bottles and food wrappers were common. Oddities included a bottle of stage blood and a hot tub.

Putah Creek Streamkeeper to receive award

Switching to lighter topics, I am pleased to report that the California/Nevada Chapter of the Soil and Water Conservation Society has selected Rich Marovich, the long-standing Putah Creek Streamkeeper, for the Chapter's 2017 Merit Award. The award has been granted for "Outstanding Leadership as Streamkeeper for the Lower Putah Creek Coordinating Committee". Rich is scheduled to receive the award on October 20, 2017, at the Chapter's "2017 Annual Conference: Preparing for Extreme Water Conditions" event in Reno, Nevada.

Annual Water Professionals Appreciation Week: October 7 – October 15

And finally, while every dog reportedly has their day, water professionals now have an entire week. Water Professionals Appreciation Week was established by Senate Concurrent Resolution (SCR) 80 – authored by Senator Bill Dodd - and approved by the Legislature on September 13, 2017. Water Professionals Appreciation Week officially begins on the first Saturday of October and ends on the Sunday of the following weekend, each year. On a serious note, there are certain sectors within the water profession, most notably wastewater treatment, that are not attracting

young recruits and are beginning to face labor shortages. Water Professionals Appreciation Week is one mechanism to promote the water profession and attract young talent.



Fact Sheet

Phase II Update of the Bay-Delta Plan: Inflows to the Sacramento River and Delta and Tributaries, Delta Outflows, Cold Water Habitat and Interior Delta Flows

The Importance of the Bay-Delta

The San Francisco Bay and Sacramento-San Joaquin Delta is one of the most important ecosystems in California as well as the hub of California's water system. As the largest tidal estuary on the western coast of the Americas, it nurtures a vast array of aquatic, terrestrial, and avian wildlife. The water that flows down the San Joaquin and Sacramento rivers into the Delta helps keep the taps running for more than two-thirds of Californians, supports industry, and irrigates millions of acres of farmland. It is the lifeblood of commercial and recreational fishing and boating businesses on the rivers, the Delta, the Bay, and into the ocean.

The Bay and Delta are also in ecological crisis. For decades, valuable habitat has been converted to farmland and urban uses, the quality of water in the channels has been degraded, there has been a substantial overall reduction in flows and significant changes in the timing and distribution of those flows, and species have been cut off from natal waters. This has led to severe declines, and in some cases extinctions, of native fish. The overall health of the estuary is in trouble, and expeditious action is needed on the watershed level to address the crisis, including actions by the State Water Resources Control Board (State Water Board or Board), fisheries agencies, water users, and others to address the array of issues impacting the watershed. The State Water Board is the primary agency responsible for addressing the flow and water quality issues. Other agencies are responsible for and are currently engaged in addressing habitat and other concerns. Those efforts should continue in an integrated way with the State Water Board's efforts. In particular, voluntary solutions that address flow and nonflow issues comprehensively are encouraged for their ability to achieve tailored, timely, and more durable efforts to improve ecosystem, water supply, and fishery benefits at the least cost.

Update of the Bay-Delta Water Quality Control Plan

The State Water Board is responsible for allocating surface water rights and protecting water quality, including drinking water, surface water, and groundwater, while protecting the public trust and public interest and preventing the waste and unreasonable use of water. These responsibilities all converge in the Bay-Delta where the State Water Board must balance many responsibilities and interests.

State law requires that the State Water Board and Regional Water Quality Control Boards (Water Boards) adopt Water Quality Control Plans that ensure beneficial uses of water in an area are protected. The Water Quality Control Plan for the Bay-Delta (Bay-Delta Plan) includes water quality objectives to protect municipal and industrial, agricultural, and fish and wildlife beneficial uses, among others. The State Water Board and Regional Water Quality Control Boards establish water quality objectives for the protection of beneficial uses of water and programs of implementation to achieve those objectives that seek to maximize all beneficial uses of water. The objectives are both narrative and numeric. Narrative objectives describe the general water quality and flow conditions that must be attained through watershed management. They also serve as the basis for the detailed numerical



objectives. Numeric objectives are exactly how they sound: specific numbers, for example, cubic-feet per second (cfs) of flow or percentages of unimpaired flow. There are also other flow-related requirements, like salinity, dissolved oxygen, and water project operational requirements to protect fish and other aquatic species.

The State Water Board has typically implemented the Bay-Delta Plan through changes to water rights. Currently, responsibility for meeting the Bay-Delta Plan objectives falls primarily on only two water right holders in the watershed: the Department of Water Resources (DWR) and U.S. Bureau of Reclamation (Reclamation) for the State Water Project and Central Valley Project (collectively Projects), respectively. The Bay-Delta Plan is implemented through the State Water Board's water right Decision 1641 (D-1641). In D-1641, the State Water Board accepted various agreements between DWR and Reclamation and other water users to assume responsibility for meeting specified Bay-Delta Plan objectives for a period of time.

The current Bay-Delta Plan and its implementation through a limited subset of water users on a limited subset of streams and for parts of the year has failed to protect fish and wildlife that require protection throughout the watershed and throughout the year. The current Bay-Delta Plan requirements, as implemented, result in overburdening some streams to the detriment of all beneficial uses in that stream while at the same time failing to protect beneficial uses in other streams and the watershed at large. The Bay-Delta Plan and its implementation require updating to address these issues in an expedited manner to halt and reverse the ecosystem collapse.

The State Water Board identified the need to update the Bay-Delta Plan and its implementation many years ago, and it plans to complete that process without further delay. In that effort, the State Water Board is planning to pursue expeditious completion of the update of the Bay-Delta Plan. The Board will also explore all available options for expediting implementation efforts. Because voluntary agreements may provide the most efficient and effective route to durable solutions to ensure the reasonable protection of fish and wildlife, the State Water Board is encouraging voluntary agreements that achieve and implement the objectives.

The Bay-Delta Plan is being updated in two separate phases. Phase I addresses flow requirements in the San Joaquin River watershed for the protection of fish and wildlife, and salinity requirements in the southern Delta for the protection of agriculture. Phase II addresses requirements for flows and cold water habitat in the Sacramento River, its tributaries and tributaries to the Delta (the Mokelumne, Cosumnes and Calaveras rivers); Delta outflows; and water project operations in the interior Delta.

Each phase involves developing a Scientific Basis Report (Science Report) identifying the best available science supporting potential changes to the Bay-Delta Plan. Based on that science, potential changes to the Bay-Delta Plan and alternatives are developed along with a Staff Report or Substitute Environmental Document (SED) that analyzes the potential environmental and economic impacts related to those potential changes. Then a Staff Report/SED is released for public review and comment. Following the comment period, the State Water Board reviews and considers the public comments and prepares responses and any needed changes to the proposed Bay-Delta Plan revisions and analyses.

The science, environmental, economic, and other assessments and public comments provide critical knowledge that informs the State Water Board's decisions on how to balance the needs of all beneficial uses of water, including fish and wildlife, municipal, agricultural, hydropower, and other uses, when determining what changes to make to the Bay-Delta Plan.

Phase I of the Bay-Delta Plan update is nearing completion, with responses to comments on the environmental, economic, and other analyses currently under development. Phase II recently completed the final Science Report process, including consultation and input from the Delta Independent Science Board (ISB). The State Water Board appreciates all of the helpful comments it received from the ISB and the public. Based on those comments, the Science Report and conceptual basis for proposed changes to the Bay-Delta Plan were revised. Chapter 1 of the final Science Report describes how the report and proposed conceptual basis for changes to the Bay-Delta Plan were modified to address specific comments from the ISB and the public. Those changes include clarifying the approach for the proposed flow requirements and adaptive management process for the flow requirements; bolstering the report's discussion of climate change, management of water temperatures, nonflow stressors, and scientific uncertainty; and incorporation of new science since the working draft Science Report was released. The final Science Report with these changes (available [here](#)) was submitted for independent blind peer review. The State Water Board received the peer review responses (available [here](#)) indicating that the Science Report is based on sound science. Accordingly, no substantive changes were made to the report. While not required, State Water Board staff prepared responses to comments and questions from the peer reviewers (available [here](#)).

State Water Board staff are now developing proposed changes to the Bay-Delta Plan as part of Phase II, including the project alternatives and associated environmental and economic analyses that will be part of the Staff Report/SED that is submitted for public review and comment. To help refine the potential Phase II changes to the Bay-Delta Plan, State Water Board staff posted a series of questions for public input on its website (available [here](#)). Any public input should be provided by November 9, 2017. A notice to the public on how to stay informed on the Phase II update of the Bay-Delta Plan has also been distributed and can be found on the State Water Board's website (available [here](#)).

The State Water Board has also posted the latest version of its Sacramento Water Allocation Model (SacWAM) (available [here](#)). The model allows staff to evaluate the potential effects of different possible changes to the Bay-Delta Plan on the watershed and water supplies. A prior initial version of SacWAM was released for public review and for review by a panel of experts assembled by the Delta Science Program (DSP). The DSP review panel provided comments on SacWAM in December, 2016 (available [here](#)). Based on those comments, the public comments and internal review, SacWAM was updated and responses to the DSP peer review were prepared (available [here](#)). The State Water Board appreciates the very helpful comments from the DSP peer review panel and the assistance of the public in informing the development of SacWAM.

The Science Report Documents the Ecological Crisis

The Science Report for Phase II of the Bay-Delta Plan update documents the current ecological crisis in the watershed, including a prolonged and precipitous decline in numerous native species, including spring-run and winter-run Chinook salmon, longfin smelt, Delta smelt, and Sacramento splittail. The species declines are attributable to numerous stressors in the ecosystem, including reduced and modified flows, loss of habitat, invasive species, and water pollution. The Science Report discusses the significant impacts non-flow stressors like habitat loss are having on the ecosystem and the importance of also addressing these stressors in order to protect the Bay-Delta ecosystem. Although the Report acknowledges the importance of addressing non-flow stressors to protect the ecosystem, it focuses on flows, because flows are the direct responsibility of the State Water Board, and because flows are an essential part of restoring healthy ecosystem functions.

With respect to flows, the Science Report explains how drastically the hydrology in the Bay-Delta watershed has been modified and how much further flows could be reduced without additional flow requirements. On average, annual outflow from the Delta into the Bay has been reduced by more than half and sometimes by much greater quantities at critical times for native species. Inflows from rivers into the Delta on many tributaries have been reduced by much greater amounts, with as much as 100 percent of flows diverted at critical times for native species. Additionally, because existing Bay-Delta Plan flow requirements are far below current flow levels most of the time, additional regulatory requirements are needed to prevent flows from being substantially reduced in the future.

Further, in most of the watershed, dams have deprived salmon species of access to the cold water that they need for survival, trapping them in lower warmer elevations resulting in failure to protect beneficial uses and failure to keep fish in good condition below dams per the requirements of the Fish and Game Code.¹ This sometimes fatal condition will be exacerbated by climate change and more limited water supplies. At the same time, once salmon and other species reach the estuary, they need protection from the effects of Project water diversions in the southern Delta. The diversions confuse the migratory signals that fish follow, trap fish at the export pumps where direct mortality occurs, create poor habitat conditions for native species, and increase predation due to favoring invasive species and inhibiting the ability of native fishes to evade predators.

Using the Science to Develop Proposed Phase II Changes to the Bay-Delta Plan

The Science Report recommends a holistic approach for developing instream flows in which the ecosystem as a whole is considered and flows generally resemble the natural flow regime to which native species are adapted. Based on the Science Report, new inflow and cold water habitat requirements and new and modified Delta outflows and interior Delta flow requirements are proposed with adaptive management provisions, as well as complementary actions to address other stressors and monitoring, evaluation, and reporting requirements. The approach proposed is flexible in recognition of the complexity of the watershed, additional complicating factors like climate change, and the need for expedient action.

Many of the streams under consideration have no inflow, cold water habitat, or Delta outflow requirements. Where requirements do exist they may only be for parts of the year or may be inadequate, particularly with respect to contribution to Delta outflows. The proposed inflow requirements would establish a unifying regulatory approach for instream flows for all tributaries that support salmon species in the Bay-Delta watershed for the entire year. The inflow requirements would be managed to meet the needs for flows and cold water in the tributaries and would contribute to needed Delta outflows. The approach addresses the existing altered hydrology and landscape, and the reality that flows need to address a variety of purposes. Under the proposed approach, a portion of the inflow to a watershed would be dedicated to environmental purposes. The ecosystem and water users would share the streams in wet times and dry times preserving the patterns of flows that native fish and other species evolved to.

The amount or budget of environmental flow water would be determined based on the unimpaired flow of each water body and would be implemented based on the specific needs and circumstances within

¹ Pursuant to Fish and Game Code section 5937, the owner of any dam shall allow sufficient water at all times to pass through, over or around a dam to keep fish in good condition below the dam.

each tributary. Unimpaired flow represents the total amount of water available at a specific location and time for all uses. In a regulatory setting, use of unimpaired flows allows the State Water Board to allocate a certain amount of the available supply of a stream to the environment while recognizing other uses of water. While unimpaired flow is not the same as natural flow,² it generally reflects the frequency, timing, magnitude, and duration of the natural flows to which native fish and wildlife have adapted. Where unimpaired flows may not optimally provide for natural flow functions, those flows may be shaped and sculpted under the proposed approach. Ranges for the unimpaired flows and flexibility in implementing flows are proposed to address specific needs within tributaries, climate change, drought, cold water needs, other factors, and the possibility that non-flow actions may reduce the needs for flows because they help fish and wildlife in other ways like providing habitat, temperature control, and other measures.

The inflow, cold water habitat, and Delta outflow requirements may be implemented in a variety of ways to provide maximum benefits to fish and wildlife. These include targeted pulses to cue migration, summer cold water releases, minimum flows, and other functions. Flows could be implemented in a manner that generally follows unimpaired flows in watersheds where there is little change from natural conditions to which native species are adapted. In more physically altered watersheds, the pattern of these flows would likely be modified from unimpaired to achieve specific purposes or functions. With increasing climate change, it is expected that further sculpting and shaping of flows will be needed. New and existing tools could be used for shaping the flows based on the availability of information for a watershed (e.g., specific instream flow studies, presence of reservoirs). Monitoring and special studies would then inform adaptive management of the environmental flows. Biological goals that incorporate “SMART” (specific, measurable, achievable, relevant, and time-bound) principles that are tied to controllable factors within specific watersheds are proposed to be developed. These goals can assist in measuring flow and other management actions for determining adaptive management solutions.

Coordination with other Science, Planning, and Regulatory Efforts

Some of the potential changes to the Bay-Delta Plan are related to efforts by other agencies and groups. Specifically, changes are proposed to the Bay-Delta Plan to incorporate existing federal and state endangered species act requirements, including biological opinions (BiOp) and incidental take permit requirements for the Projects in the Bay-Delta Plan. Any Bay-Delta Plan requirements that are related to these or other regulatory requirements would be coordinated to avoid redundancy and inefficiencies while ensuring that the State Water Board meets its obligations to protect fish and wildlife.

The State Water Board will continue to coordinate with the DSP and ISB as appropriate through completion and implementation of updates to the Bay-Delta Plan. The State Water Board is also committed to collaborating and coordinating with other science efforts including the Delta Plan Interagency Implementation Committee (information available [here](#)), Interagency Ecological Program (information available [here](#)), the Collaborative Science and Adaptive Management Program (information available [here](#)), and other efforts. In particular, the State Water Board is interested in input from these groups on adaptive management, monitoring, reporting, and analysis efforts.

² Natural flows are the theoretical flows that would exist without the changes to the flows and landscape in a watershed that have occurred over time including levees, dams, changes in vegetation, and water diversions. There are estimates of natural flows, but those estimates are highly uncertain given all of the changes that have occurred in the watershed over time. Given all of the changes, it would be impossible to return to these natural flow conditions but it is possible to produce more natural flows.

There are also other activities underway by other agencies that the State Water Board plans to coordinate and collaborate with including the: California Water Action Plan (information available [here](#)); species Recovery Plans; California EcoRestore (information available [here](#)); the Water Quality, Supply, and Infrastructure Improvement Act (information available [here](#)); and others. Successful implementation of these efforts is expected to complement the State Water Board's water quality control planning and implementation efforts and will inform adaptive management decisions regarding needed flows and operational measures.

Proposed Changes to the Bay-Delta Plan

The Bay-Delta watershed is an inextricably linked ecosystem—from streams where native fish spawn through to the ocean. Chemical, physical and biological processes in the Bay and Delta are shaped by flows and associated processes that originate hundreds of miles upstream and all along the way. The reverse is also true, with the tributaries intricately linked to conditions in the Bay and Delta. Migratory fish in particular depend on adequate conditions throughout the ecosystem from spawning grounds through the Delta and Bay. In recognition of this fact, proposed Phase II changes to the Bay-Delta Plan are meant to provide for a flow regime that supports a connected and functioning ecosystem linking and integrating inflow, cold water habitat, Delta outflow, and interior Delta flow requirements as well as habitat and other nonflow measures by others.

Tributary Inflows: The first element proposed to be changed in the Bay-Delta Plan to ensure comprehensive protection of the Bay-Delta ecosystem is the addition of new tributary inflow requirements. Currently the Bay-Delta Plan only specifies minimal flows for the mainstem Sacramento River for a small part of the year and does not address the critical importance to the ecosystem of flows within tributaries and connecting those flows with the Delta and out to the ocean. Proposed changes to the Bay-Delta Plan are structured using a holistic ecosystem approach that connects nesting areas for anadromous fish with the Delta and ocean. Specifically, new year-round inflow requirements are proposed from the Phase II project area to the Delta.

Specific functions provided by these flows include supporting habitat conditions for migration and rearing of native fish species (primarily Chinook salmon and steelhead) and contributions to Delta outflows to protect species in the estuary. Different runs of these native species are present in the Delta and its tributaries all year. Flows are needed that more closely resemble the conditions to which native fish species have adapted, including the frequency, timing, magnitude, and duration of flows, as well as the proportionality of flows from tributaries. These flow attributes support key functions that are important to native species. Those functions include providing for: floodplain inundation that improves growth and survival of native fish through improved food supplies and shelter; temperature control to prevent mortality and disease caused by high temperatures; and migratory cues for fish and other aquatic species going upstream and downstream that help fish to stay on the appropriate migratory route and avoid getting stranded without access to water or straying in the wrong direction. Flows that come from the entire watershed throughout the year are critical to the long term survival of native fish species. These flows support both genetic and life history diversity that allow native species to distribute the risks that droughts, fires, disease, food availability, and other natural and human-made stressors present to populations.

The proposed new inflow objective is both narrative and numeric and is intended to set the foundation for integrating inflow, cold water habitat, and outflow requirements. All three of these requirements are proposed to work together in an integrated fashion. Cold water management affects inflows, inflow

management affects outflows and vice versa. Thus, all three requirements must be considered together as part of a comprehensive package. The narrative portion of the inflow objective describes the needs for inflows to provide appropriate conditions in tributaries and to contribute flows to the Delta. The numeric portion requires inflows from the Sacramento River, its tributaries and the Delta eastside tributaries to remain in the stream for environmental purposes. The numeric requirements may be managed as a block of water for the environment. That block would be based on a percentage of the inflows to the watersheds (unimpaired flows), allocating a portion of the water in the watershed to the environment to be managed to optimize benefits for fish and wildlife for inflow and outflow purposes.

Through adaptive management, these unimpaired flows could be sculpted to provide maximum benefits to fish and wildlife, including targeted pulses to cue migration, summer cold water releases, minimum flows, floodplain inundation, and other functions. In some tributaries where flows are currently significantly impaired (reduced below unimpaired levels), these new inflow requirements are needed to improve conditions for fish and wildlife in those tributaries and to provide for connection with the Delta and contribution of flow to the Delta. In other tributaries where flows are less impaired, new inflow requirements are needed to ensure that those flows are not reduced in a way that is harmful to native fish.

The numeric inflow requirement would include a range for the flows to allow for adjustment up or down within the range to address the unique needs and conditions of the tributaries (including cold water needs), changing information (new science), and changing conditions (implementation of non-flow measures, drought, etc.). The science indicates that higher inflows up to and beyond 75 percent of unimpaired flows are most protective of the ecosystem. However, these flow levels are not necessarily reasonable or feasible given all of the competing uses for water in the watershed, including cold water habitat. The decision on the range for the inflow objective will be a balancing decision to determine reasonable protection considering competing uses of water, environmental, economic, and other considerations. The Board will make that determination by considering information in the Science Report, Staff Report/SED, and public comments. When determining the numeric inflow levels, instream tributary flow needs as well as cold water habitat and Delta outflow needs are proposed to be considered. The range under consideration is from 35 to 75 percent of unimpaired flows and generally does not provide for flows lower than existing conditions. This range is consistent with the Delta outflow range discussed below in recognition of the linkage between outflow and inflow.

To ensure that beneficial uses are protected in a meaningful timeframe, it is the State Water Board's intent that the inflow and cold water habitat objectives will be implemented in a timely manner and that tributaries will share in the responsibility to meet Delta outflows in the near term. Flexibility is proposed to be provided for implementing these objectives through voluntary agreements in which tributary or regional plans are developed provided that those voluntary agreements meet minimum criteria and can be developed expeditiously. All tributaries are proposed to be responsible for providing inflows within a specified range and are generally expected to meet a specific minimum flow level identified in that range. Voluntary agreements that are developed prior to the State Water Board's adoption of the objectives could be integrated into the program of implementation and implemented upon adoption. In the absence of these agreements, however, the State Water Board does not intend to delay implementation while voluntary agreements are developed. As such, the program of implementation will include provisions for implementing the inflow and cold water habitat requirements and for contributing to Delta outflows in a timely manner that will be effective unless and until adequate tributary plans are developed through voluntary agreements.

Cold Water Habitat: A necessary companion to the inflow requirements discussed above to ensure the protection of the ecosystem, and specifically salmon species in the tributaries, and to ensure that there are not redirected impacts from the new inflow and outflow requirements is the addition of cold water habitat requirements. Elevated temperatures during the early life stages of salmon species reduce survival. Needed temperature conditions throughout the year to protect against elevated temperatures depend on the race of salmon, the life stage, and other factors. Currently the Bay-Delta Plan does not include cold water habitat requirements. While some other State Water Board cold water habitat requirements and requirements of other agencies exist, those requirements are not comprehensive and are not integrated with inflow and outflow requirements and are not necessarily protective. To address these issues, a new narrative cold water habitat requirement is proposed to be added to the Bay-Delta Plan. The requirement would ensure that cold water flows from reservoirs are maintained and timed to provide for downstream temperatures to protect salmon species, or that alternate measures are implemented to protect fish from temperature impacts (e.g., passage above dams) to protect native fish and wildlife beneficial uses and to meet the requirements of the Fish and Game Code (section 5937).

Actions needed to manage temperatures in tributaries will depend on the specific circumstances of that tributary. Specific implementation actions will depend on the needs of the fish in each tributary and the actions that are available to protect salmon species from temperature effects. As such, a general narrative objective for cold water management is proposed that will be implemented with inflows as discussed above.

Delta Outflow: In addition to inflows and cold water habitat requirements, outflow requirements that recognize the imperative of providing for a connected watershed that integrates all of these requirements are proposed. Changes to outflow requirements are also proposed to address the fact that current outflow volumes are inadequate to protect the ecosystem and that even these inadequate levels will not be maintained with existing requirements. Current outflow levels are usually greater than requirements because of an inability to store and use that water. With additional storage and diversion facilities, the additional outflows that occur now will be reduced, potentially substantially, without additional regulatory requirements. Finally, new fall Delta outflow requirements are proposed to ensure that the Bay-Delta Plan provides for comprehensive protection of native species while at the same time coordinating and integrating with existing BiOp requirements.

Monitoring of fish and their food species that serve as an indicator of the health of the estuary continues to show the importance of Delta outflows in protection of the ecosystem. The dramatic declines in population size of these indicator species like longfin smelt indicate that current Delta outflows are not sufficient to protect the ecosystem. Freshwater outflow influences chemical, physical, and biological conditions through its effects on food, pollution, and the movement of flows not only in the Delta, but throughout the watershed and into the Bay and ocean.

The survival and abundance of many native species is closely related to Delta outflows and how those outflows affect the location where freshwater from the rivers mixes with seawater from the ocean. This mixing concentrates food and provides other functions that multiple life stages of a diversity of fish and other species depend. The quality, location, and extent of habitat in the estuary fluctuates in response to outflows and other factors. Generally, the further this mixing zone is downstream of the Sacramento and San Joaquin rivers due to increased Delta outflows, the better native fish and other aquatic species respond and the better habitat conditions are. Delta outflow is also an important factor in the migration of salmon and other species. While the exact mechanisms that drive all of these relationships are not perfectly understood, the evidence is expansive and perfect science is not required to move forward.

The changes to the Bay-Delta Plan are proposed to be implemented in a way that improves scientific understanding and adapts to that new understanding.

To protect the ecosystem and the native fish and wildlife species dependent on that ecosystem, new and modified narrative and numeric Delta outflow objectives are proposed. The narrative Delta outflow objective is proposed to describe the outflow conditions that protect native fish and aquatic species populations. Changes to the numeric Delta outflow requirements are proposed to integrate the Delta outflow requirements with the proposed inflow and cold water habitat requirements to provide for comprehensive integrated watershed management in a feasible and flexible way.

In order to ensure that minimum quantities of Delta outflow are provided to the estuary in all months and all years, minimum year round Delta outflows from the current Bay-Delta Plan would be maintained. Specifically, the existing July through January Delta outflow requirements in Table 3 of the Bay-Delta Plan that range from 3,000 cfs to 8,000 cfs based on water year type would be maintained. In addition, base February through June flows of 7,100 cfs would also be maintained (Footnote 11 to Table 3.) Under the existing Bay-Delta Plan, this requirement may also be met by achieving specified salinity levels. The methods by which this objective may be met are proposed to be reevaluated to ensure that intended protections are provided, while providing flexibility to reduce water supply impacts.

The remaining existing Delta outflow requirements included in Table 4 of the existing Bay-Delta Plan would be replaced with an "inflow-based Delta outflow" objective that integrates inflow and outflow requirements. This objective is proposed to achieve a higher level of protection than provided under the current requirements in terms of quantity, timing, and connectivity. The proposed new inflow-based Delta outflow objective is just that, an outflow objective that is based on the required inflows. Specifically, the proposed objective would require that the quantities of required inflows be provided as outflows. The objective would also include adjustments to address additional inflows and natural losses downstream, including adjustments for floodplain inundation that is encouraged.

Required inflows will be determined by considering the needs for tributaries to contribute to outflows, specific tributary needs, and the need to balance competing uses of water. In addition to tributary inflows contributing to outflows, water use downstream of the tributaries on the valley floor and in the Delta may be limited to achieve required outflow levels consistent with the unimpaired inflow approach on the tributaries and water right priorities. The required outflow would be calculated by adding up the required inflows and making appropriate adjustments for natural losses and gains scaled to the percent of unimpaired flow level. The Science Report identifies the outflows that would be achieved with different percentages of unimpaired inflows assuming those inflows go out to Delta outflow with adjustments for downstream natural accretions and depletions scaled to the percent of unimpaired flow level. The Science Report also identifies the frequencies that the percent of unimpaired inflow scenarios meet the flow thresholds that are associated with improved conditions for fish. The higher the percentage of inflow and the less water use that occurs downstream on the valley floor and in the Delta, the higher the outflow and the greater the benefits are for various species. When determining the required inflows and associated inflow-based Delta outflows, the benefits to species will need to be balanced with needs for water to support other beneficial uses, including municipal and agricultural uses, as well as cold water storage considerations. The Staff Report/SED will include information to help inform that decision.

The inflow-based Delta outflow objective acknowledges that outflows are a product of inflows and that proportional inflows will produce outflows necessary to provide both the quantity of needed flows and functioning migratory corridors. The approach recognizes that flow is the lifeblood of the watershed. It

is more than just a quantity of water but is a process that transports, distributes, mixes, and transforms chemicals, nutrients, aquatic organisms, sediments, gravel, and other materials up and down the watershed. The functioning of the upstream processes in the watershed is integral to the functioning of the downstream processes and vice versa. Limiting contributions to Delta outflows to part of the watershed results in overreliance on that part of the watershed and a failure to protect beneficial uses in that watershed and in the greater Bay-Delta watershed. In addition to not providing full protection for beneficial uses, relying on only a subset of the watershed that has control of a subset of the flows (the Projects) to provide Delta outflows will not be feasible as water use expands and climate change intensifies, particularly with higher outflow levels that are needed to protect fish and wildlife.

Flexibility is proposed to be provided through adaptive management of the inflow-based outflow objective to address the complexities of the watershed in the most effective and feasible ways. At the same time, it provides for rigor to protect beneficial uses. The flexibility is intended to be compatible with the flexibility provided for inflows, and to allow for voluntary solutions that allow water users to help shape how responsibility for flows needed to meet the narrative objective and protect beneficial uses is distributed. Flexibility could allow for implementation of nonflow measures that reduce the need for flows and allow for transfers, exchanges, purchases, and other agreements.

The science generally indicates that higher outflows, up to and beyond 75 percent of unimpaired Delta outflows, provide better conditions for the estuary (i.e., the higher the inflow-based outflow the better for native fish and other species). However, there are many other important competing uses for water in the watershed; so the decision on required outflows will need to be balanced with these other considerations, including cold water needs. Like inflows, the decision regarding required outflows for the reasonable protection of fish and wildlife will be based on the science as well as consideration of these other needs for water, environmental, economic, and other considerations. The inflow-based Delta outflows under consideration are consistent with the range of inflows discussed above. With respect to the quantity of San Joaquin River flow that would contribute to the inflow-based Delta outflow, it would be consistent with whatever the current requirement is in the Bay-Delta Plan. This includes any changes to the San Joaquin River inflow requirements that may result from the Phase I update to the Bay-Delta Plan when those changes become effective ensuring that required San Joaquin River inflows are protected and contribute to outflows.

In addition to the above, to ensure that the Bay-Delta Plan comprehensively protects fish and wildlife, additional fall Delta outflow requirements are proposed. The State Water Board has an independent obligation to reasonably protect beneficial uses of water in the Bay-Delta regardless of federal and state endangered species act requirements. As such, fall Delta outflow requirements from the U.S. Fish and Wildlife Service (USFWS) BiOp that are needed to reasonably protect fish and wildlife are proposed to be incorporated into the Bay-Delta Plan. These requirements include additional Delta outflow requirements in September through December when the preceding period was a wet or above normal water year. The fall Delta outflow requirements that would be added to the Bay-Delta Plan would be integrated with existing BiOp requirements and would include flexibility to address potential changes that may occur to the BiOp requirements while ensuring that the Board's independent obligations to protect beneficial uses is met.

Interior Delta Flows: Finally, to complete the package of measures needed to provide for an integrated and comprehensive functioning flow regime in the Bay-Delta watershed, changes to interior Delta flow requirements in the Bay-Delta Plan are proposed. Changes are proposed to provide for more natural flow patterns from spawning streams out to the ocean and to provide more natural ecosystem functions. Diversions in the south Delta and associated operations cause unnatural flow patterns with

inflows traveling toward the Project export facilities, rather than toward the ocean. Fish that travel into the interior Delta have very low survival levels due to operation of the pumps and the poor habitat surrounding the pumps. This includes large numbers of predators and warm channels devoid of food and shelter. Interior Delta flow requirements are needed to keep migrating fish out of the interior Delta and on the correct migration pathway.

The proposed narrative interior Delta flow requirement would establish the overall needed flow conditions in the interior Delta to reasonably protect native fish populations migrating through and rearing in the Delta. Changes to numeric objectives are proposed to be consistent with requirements that are already included in the USFWS BiOp, National Marine Fisheries Service (NMFS) BiOp, and California Department of Fish and Wildlife (DFW) Incidental Take Permit for the current operations of the Projects including: new Old and Middle River reverse flow limitations and changes to Project export and Delta Cross Channel gate restrictions to expand the level of protection for those existing requirements in the Bay-Delta Plan. Similar to the existing process, the interior Delta flow requirements for Old and Middle reverse flows, export limits, and Delta Cross Channel gate closures are proposed to be determined and based on monitoring of fish presence and a consultation process involving staff from the fisheries agencies, DWR, and Reclamation, with the addition of the State Water Board.

All of the interior Delta flow requirements would include adaptive management provisions to allow the requirements to adapt to new scientific knowledge as it becomes available, through various efforts. New or modified requirements include: additional Delta Cross Channel gate closures in October consistent with the NMFS BiOp; new Old and Middle River reverse flow limits from December through June consistent with the USFWS and NMFS BiOps; and modified export constraints based on San Joaquin River flows that apply from April through May consistent with the NMFS BiOp with flexibility to shift the constraints during the February through June time period to maximize protection for fish species if agreeable to NMFS.

Adaptive Management

The Bay-Delta ecosystem is exceedingly complex, and there will always be uncertainty. To address this uncertainty and respond to new and changing information over the long term and in real time, adaptive management is a component of all of the recommendations for potential changes to the Bay-Delta Plan. Adaptive management actions are proposed to be guided by measuring success at achieving biological goals specific to tributary and estuarine needs. Specifically, adaptive management provides opportunities to shift and sculpt flows to more effectively achieve functions for fish and wildlife and perform experiments to improve understanding of the underlying biological mechanisms.

Voluntary Agreements

The State Water Board encourages the ongoing efforts of various stakeholders to develop voluntary agreements that would implement updated Bay-Delta Plan objectives. The State Water Board recognizes that voluntary agreements can help inform and expedite implementation of the water quality objectives and can provide durable solutions in the Bay-Delta watershed. Subject to acceptance by the State Water Board, a voluntary agreement may serve as an implementation mechanism for some of the tributaries or for the Phase II project as a whole, or some combination thereof. The Phase II changes to the Bay-Delta Plan, like the Phase I changes, are proposed in a way to allow for stakeholders to come together through voluntary agreements to identify ways to help restore fish and wildlife in a more real time, measurable manner.

Voluntary agreements may be proposed in both processes that include commitments to meet the flow requirements and to undertake non-flow actions. If the voluntary agreements include non-flow actions recommended by the State Water Board or by DFW, the non-flow measures may support a change in the required percent of unimpaired flow, within the range prescribed by the flow objectives. Any such changes must be supported by DFW and satisfy specific criteria for adaptive management. At a minimum, to be considered by the State Water Board, voluntary agreements must include provisions for transparency and accountability, monitoring and reporting, and for planning, adaptive management, and periodic evaluation. The State Water Board encourages parties to present any executed voluntary agreements related to Phase II to the State Water Board for its review as soon as feasible to improve conditions in the watershed.

For more information on the key attributes of successful voluntary agreements go [here](#).

Additional Information

For additional information concerning the State Water Board's review of the Bay-Delta Plan, please visit the State Water Board's website at

http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/.

If you would like to receive updates on the process to revise the Bay-Delta Plan please sign up for the State Water Board's email distribution list at

http://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.shtml.

If you would like to provide input on the further development of the Bay-Delta Plan, please see the notice available [here](#) and provide responses by November 9, 2017.

The State Water Board appreciates the continued efforts and public input as reconciliation of the Bay-Delta ecosystem will require an unprecedented level of coordination and cooperation with interested parties, including the Delta Stewardship Council, fisheries and water management agencies, water users, environmental groups, and other stakeholders.

(This fact sheet was updated on October 4 2017)

State Water Resources Control Board

October 4, 2017

Notice Regarding Information and Future Updates on the Phase II Update of the Bay-Delta Plan

The purpose of this notice is to advise interested persons how they can stay informed on Phase II of the State Water Resources Control Board's (State Water Board) current process to update the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta) (Bay-Delta Plan) related to Sacramento River, Delta flow, and water project operational requirements.

Background

The Bay-Delta is a critically important natural resource for California and the nation. It is both the hub of California's water supply system and the most valuable estuary and wetlands on the western coast of the Americas. The Bay-Delta is also an estuary in ecological crisis. The State Water Board is responsible for protecting fish and wildlife uses in the Bay-Delta so is taking actions to address the current ecological crisis. Specifically, state law requires the adoption of Water Quality Control Plans that identify beneficial uses of waters and establish water quality objectives to reasonably protect these uses and implementation and monitoring elements. The State Water Board is in the process of reviewing and updating the Bay-Delta Plan to ensure the reasonable protection of fish and wildlife beneficial uses of water in the Bay-Delta watershed in a balanced manner considering other uses of water including agriculture, municipal, hydropower, recreation and other uses.

The Bay-Delta Plan is being updated in two separate phases. Phase I addresses flow requirements in the San Joaquin River watershed for the protection of fish and wildlife and salinity requirements in the southern Delta for the protection of agriculture. Information regarding Phase I is available at: <http://www.waterboards.ca.gov/DeltaWQCP-Phase1>.

Phase II addresses the reasonable protection of fish and wildlife beneficial uses in the Sacramento River and its tributaries, the Delta, and the Mokelumne, Calaveras, and Cosumnes rivers (Delta eastside tributaries). Information regarding Phase II is available at: <http://www.waterboards.ca.gov/DeltaWQCP-Phase2>.

The proposed Phase II changes to the Bay-Delta Plan include: new inflow requirements for the Sacramento River, its tributaries, and Delta eastside tributaries; new and modified Delta outflow requirements; new requirements for cold water habitat; new and modified interior Delta flow requirements; recommendations for complementary ecosystem protection actions that others should take; and adaptive management, monitoring, evaluation, special study, and reporting provisions.

A Fact Sheet providing additional information on the State Water Board's Phase II update of the Bay-Delta Plan, including a description of the proposed changes to the Bay-Delta Plan's water quality objectives and implementation approach, is available on the State Water Board's website at:

http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/201710_phase_sell_factsheet.pdf.

To help inform potential Phase II implementation measures in the Bay-Delta Plan, State Water Board staff has posted a series of questions for public input on its website at:

http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/201710_phase_sell_input.pdf.

The questions provide an optional opportunity to provide early constructive and meaningful input to help develop effective and workable implementation measures for the Bay-Delta Plan. Responses to the questions are **due by November 9, 2017**. A formal public comment period on the environmental and other analyses supporting proposed changes to the Bay-Delta Plan will occur at a later date. If you would like to receive notice of that formal comment period and other notices regarding the Phase II update of the Bay-Delta Plan, please inform the State Water Board per the procedures described below.

Future Notice on the Phase II Update of the Bay-Delta Plan

The State Water Board is circulating this notice broadly to ensure that all interested parties are included on the State Water Board's distribution list for the project. To receive future State Water Board announcements about the Phase II update of the Bay-Delta Plan, please subscribe to the State Water Board's email list for "Bay Delta Notices" under the Water Rights category at: http://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.shtml. If you have already subscribed to this email distribution list, no additional action is needed.

To ensure timely delivery of updates and other information, the State Water Board encourages interested persons to sign up to receive notices via email. However, if you are unable to receive emails, you may request to be placed on a hard copy mailing list. If you do not request to be placed on this mailing list or to remain on the hard copy mailing list, you will not receive information via hard copy in the mail. To be placed on the hard copy mailing list, you must notify Ryan Babb at: P.O. Box 2000; Sacramento, CA 95812-2000, **by November 9, 2017**. If you do not request to be placed on the hard copy mailing list by November 9, 2017, you will not receive hard copy notices until such time as you request to be placed on the mailing list.

Questions and Additional Information

Please direct any questions regarding this correspondence to Jason Baker at: (916) 341-5354 or by email at: Jason.Baker@waterboards.ca.gov.

State Water Resources Control Board

October 4, 2017

OPPORTUNITY TO PROVIDE INPUT TO INFORM THE DEVELOPMENT OF THE PROGRAM OF IMPLEMENTATION FOR THE PHASE II UPDATE TO THE BAY-DELTA PLAN

Opportunity to Provide Input

This notice provides the public with the opportunity to comment on the development of potential changes to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary Bay-Delta (Bay-Delta Plan). The State Water Resources Control Board (State Water Board or Board) is in the process of updating the Bay-Delta Plan in two separate phases. This notice concerns Phase II of the update to the Bay-Delta Plan focused on protection of fish and wildlife beneficial uses in the Sacramento River, Delta and associated tributaries.¹ A Fact Sheet that further describes the Phase II process and the conceptual basis for proposed changes the Bay-Delta Plan is available on the State Water Board's website at:

www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/201710_phasell_factsheet.pdf. The Final Phase II Scientific Basis Report (Science Report) documenting the science upon which potential changes to the Bay-Delta Plan are based is also posted on the State Water Board's website at:

http://waterboards.ca.gov/water_issues/programs/peer_review/docs/scientific_basis_phase_ii/201710_bdphasell_sciencereport.pdf. To help further develop the potential Phase II changes to the Bay-Delta Plan program of implementation, the State Water Board provides a list of questions below for optional and early public input. Written responses to the questions should be **limited to 20 pages** and should be provided **by noon on, November 9, 2017**, to be considered. Comments should be submitted by email to Bay-Delta@waterboards.ca.gov with the subject line of "Phase II Bay-Delta Plan Input." Input received as a result of this notice will inform further development of proposed changes to the Bay-Delta Plan. Those changes and the potential environmental and economic effects of those changes and alternative changes to the Bay-Delta Plan will be identified in a draft Staff Report/Substitute Environmental Document that will be circulated for formal public review and comment at a later date.

Issues for Comment

State Water Board staff is soliciting focused stakeholder on the questions listed below for consideration in the development of the program of implementation for the Phase II Update of the Bay-Delta Plan. A response is optional and need not address every question.

¹ Phase I is addressing the protection of beneficial uses in the San Joaquin River watershed and southern Delta in a separate proceeding.

1. What specific provisions should be included in the program of implementation to ensure the expeditious implementation of the inflow and cold water habitat objectives?
 - a. How long should the State Water Board allow for voluntary tributary or regional plans to be developed and implemented to meet the inflow and cold water habitat objectives and what are the minimum provisions those plans should include to be acceptable?
 - b. What measures should the State Water Board take to implement the inflow and cold water habitat objectives if satisfactory voluntary tributary or regional plans are not developed?
2. How should the State Water Board ensure that water released to meet objectives is protected through the system and not rediverted for other purposes?
3. What improvements should be made to measure compliance with the existing Delta outflow objectives (that are intended to be retained), and with the proposed new inflow-based Delta outflow objectives?
4. Understanding that the proposed outflow objective is derived from the inflow objective but will require some accounting methodology to accommodate Valley floor and Delta accretions and depletions and floodplain inundation, how should implementation and compliance with the new inflow and inflow-based Delta outflow objectives be coordinated?
5. What approach should the State Water Board use to transition from the current Delta outflow objective in Table 4 of the 2006 Bay-Delta Plan to a new inflow-based Delta outflow objective to ensure that Delta outflows are not reduced while the tributary inflow requirements are being implemented?
6. How should the State Water Board account for flows provided for floodplain inundation to benefit native species?
7. How should the State Water Board structure adaptive management for the new objectives?
8. How should the State Water Board ensure that non-flow measures included in voluntary tributary or regional plans are implemented in a timely and effective manner?
9. What specific drought measures should be included in the Bay-Delta Plan?
10. What should be the threshold for triggering drought measures?
11. How could the State Water Board incentivize creative voluntary drought measures?

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FAIRFIELD-SUISUN CITY, CALIFORNIA



Students from Karen Olson's class at Vaca Pena Middle School engaged during the nature walk on the field trip. (Courtesy photo)

[Fairfield-Suisun School District](#)

Solano students get hands-on experience studying Suisun Marsh

By [Daily Republic staff](#)

From [page A4](#) | September 27, 2017

SUISUN CITY — The Suisun Marsh attracts professional scientists from all over the world who come to study it.

Few people know that young, local scientists have been studying the marsh consistently for the past eight years thanks to a free opportunity offered by the Solano Resource Conservation District.

About 1,000 sixth- and seventh-graders will conduct soil, water and plant analysis during visits that began Monday and continue into early December. Testing happens during a visit to Rush Ranch Open Space, owned by Solano Land Trust.

Every student is provided three preparatory classroom lessons by Solano Resource Conservation District staff before their field trip, as well as two post-trip lessons on water conservation and pollution prevention.

This year's lessons incorporate more hands-on activities and modeling to help students meet the Next Generation Science Standards, the new science framework unrolling in K-12

classrooms across the country. Students actually test out common wetland metaphors using household objects such as sponges to relate how wetlands absorb water to prevent flooding. Students also sort out "marine

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debris” to determine what types of trash affect Solano County’s waterways and what might eventually end up in the Pacific Ocean.

At the heart of the program is the Rush Ranch Open Space, a working ranch that serves as a living laboratory for visitors.

Students see wildlife coexisting with domestic animals on a 1,050-acre property representing more than 10 percent of the remaining wetland area in California. While visiting the marsh, students hike through one of the last intact wetlands in the Bay Area and study its soil, water and plants using real scientific testing equipment.

Participants also hike to Rush Ranch’s Overlook Hill and write poems about their experience for submission to the River of Words International Art and Poetry Contest.

Participating schools are Riverview Middle School from Rio Vista, Gretchen Higgins Middle School from Dixon, Vaca Pena Middle School from Vacaville, Travis Elementary School, Crystal Middle School in Suisun City, the Mare Island Technology Academy in Vallejo and Benicia Middle School.

Funding for the field trip program comes from the Solano County Water Agency, the Solano County Department of Resource Management and the Fairfield-Suisun Sewer District.

More information about the Suisun Marsh Watershed Education Program is available at solanorcd.org.

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**REPORT OF CONSTRUCTION CHANGE ORDERS AND
CONTRACTS APPROVED BY GENERAL MANAGER UNDER
DELEGATED AUTHORITY**

Construction Contract Change Orders (15% of original project costs or \$50,000, whichever is less) - none

Construction Contracts (\$30,000 and less) - none

Professional Service Agreements (\$30,000 and less)

Sierra Controls – SCWA/SID OPC Support - \$7,500

Non-Professional Service Agreements (\$30,000 and less) - none

Construction contracts resulting from informal bids authorized by SCWA Ordinance- none

Note: Cumulative change orders or amendments resulting in exceeding the dollar limit need Board approval.

ADVISORY
COMMISSION
UPDATES

**Solano Water Advisory Commission
Meeting Minutes
August 23, 2017**

Present: Roland Sanford, Thomas Pate and Alex Rabidoux, Solano County Water Agency; Felix Riesenbergh, Fairfield; Royce Cunningham, Steve Sawyer and Justen Cole, Vacaville; Cary Keaton, Solano Irrigation District; Bryan Busch, RD 2068; Richard Wilson, Vallejo; Christian Di Renzo and Leo Larkin, Benicia; Misty Kaltreider, Solano County; Joe Leach, Dixon; Don Holdener, Maine Prairie Water District; John Curry, Dixon RCD; Jim Christensen, Travis AFB; and Rick Wood.

The meeting was called to order at 12:35 PM.

1. Approval of Minutes

The minutes of the July 26, 2017 meeting were approved.

2. SCWA General Manager's Report

Roland reminded the Commission that one of the top items in the SCWA Strategic Plan is a countywide Water Supply-Demand Analysis. The study will likely focus on agricultural, as the urban supply is already covered by the Urban Water Management Plans. To move the study forward, Roland would like to establish a working group, to create the scope followed by a Request for Proposals. Misty Kaltreider informed the Commission that the County has already done a high level water supply analysis, primarily focusing on groundwater. The Water Supply-Demand Working Group will consist of the following members: Thomas Pate, SCWA; Cary Keaton, SID; Misty Kaltreider, Solano County; Steve Sawyer, Vacaville; John Curry, Dixon RCD; and Rick Wood, SCWA/SID Consultant.

Roland informed the Commission that Rick Wood will be conducting a NBA Water Quality Treatment study. The study will look at cost differences in water treatment between poor water quality at the NBA in comparison to Solano Project water as a surrogate for the NBA AI.

Roland gave an update on the Ulatis Working Group. Currently there are a variety of regulatory threats to the Ulatis Project, NBA, and Solano Project with a significant focus on the Cache Slough Complex. Current scientific research shows that the Ulatis System may be playing an important but uncertain role in the Cache Slough System. There is a need to catalog the various uses and interests in the Ulatis Watershed and to formulate a uniform strategy amongst all the users.

For future Board Items, the Agency would like to fund an existing UC Davis fisheries monitoring program in the Cache Slough Complex. The study will cost approximately \$1.5 million over three years. The goal of the study will be to improve our understanding of the Cache Slough Complex system and take the lead on any future regulatory changes that may impact our operations.

On Solano Project issues, the State Water Resources Control Board was notified of a potential cyanotoxin bloom in July. The State Board will be conducting cyanotoxin monitoring at several locations around Lake Berryessa in advance of the Labor Day weekend.

In regards to flood issues, Roland has been unable to setup a Flood Workshop with the Board Members. A formal policy is needed to address flood control work on private property as well as the potential for a Home Raising Program in the Thomasson Lane area. The Commission suggested that it might be helpful to give the Board a presentation on the Agency's different funds and how that money is and can be legally spent, particularly in regards to flood control.

3. Groundwater Planning

For SGMA, a MOU is being developed between the various Solano subbasin agencies. The MOU will allow the agencies to apply for an upcoming planning grant to assist in developing the Solano Subbasin Groundwater Sustainability Plan.

4. Solano County Report

None

5. PSC/NBA Maintenance

None

6. Solano Water Authority Report

None

7. Water Conservation

None

8. Legislative/Initiative/Court Decision Issues Not Discussed Above

Several Commission members had concerns with a proposed water tax, which would place a tax on urban water users to generate funds for disadvantaged communities.

9. New Business

The Commission requested a tour of the recently purchased Peterson Ranch.

10. Public Comments

None

The next meeting will be September 27, 2017 at 12:30 PM.

The meeting adjourned at 2:00 PM.

SWAC Minutes.08-23-2017 (ID 219971)

ACTION OF
SOLANO COUNTY WATER AGENCY

DATE: October 12, 2017

SUBJECT: 3-year Cache Slough Complex Water Quality, Productivity and Fisheries Study

RECOMMENDATION:

Authorize General Manager to execute \$1,259,017 contract with UC Davis for the 3-year Cache Slough Complex Water Quality, Productivity and Fisheries Study.

FINANCIAL IMPACT:

FY 2017-2018	\$ 423,872
FY 2018-2019	\$ 432,378
FY 2019-2020	\$ 402,767

Sufficient funding has been included in the FY 2017-2018 State Water Project budget for the first year of the proposed study. If the study is approved, sufficient funding will be programmed into the Water Agency budgets for FY 2018-2019 and FY 2019-2020, respectively.

BACKGROUND:

Why is the Cache Slough Complex important to the Water Agency?

The Cache Slough Complex (CSC); located at the downstream end of the Yolo Bypass, in Solano County, is widely perceived by State and Federal resource agencies as an ideal setting for large scale habitat conservation and restoration. By virtue of its location and in view of the State and Federal interest in habitat conservation and restoration, the CSC and more specifically, what becomes of the CSC, is critically important to the Water Agency and the County's water supply future.

The North Bay Aqueduct intake is located in the CSC and water released from the Solano Project to Lower Putah Creek flows into the Yolo Bypass and ultimately through the CSC. Similarly, the City of Vallejo's "Vallejo Permit Water", a significant water source for not only Vallejo and at times Fairfield and Benicia, but also American Canyon in Napa County, is obtained from the CSC. The CSC also includes the southern portion of the Solano groundwater sub-basin, and nearly all of the CSC is located within the service area of the North Delta Water Agency. Simply stated, **most of Solano County's urban and agricultural water supply is in some way connected to the CSC – either as the source or as a conduit.**

Recommended: 
Roland Sanford, General Manager

<input type="checkbox"/> Approved as recommended	<input type="checkbox"/> Other (see below)	<input checked="" type="checkbox"/> Continued on next page
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Modification to Recommendation and/or other actions:

I, Roland Sanford, General Manager and Secretary to the Solano County Water Agency, do hereby certify that the foregoing action was regularly introduced, passed, and adopted by said Board of Directors at a regular meeting thereof held on October 12, 2017 by the following vote.

Ayes:

Noes:

Abstain:

Absent:

Roland Sanford
General Manager & Secretary to the

In addition to water supply, the Water Agency's interest in the CSC also extends to flood control and most notably, operation and maintenance of the Ulatis Flood Control Project. The Ulatis Flood Control Project, portions of which are located in and near the City of Vacaville, ultimately drains to the CSC. In addition to its flood control function, the Ulatis Flood Control Project is used to capture and reuse agricultural irrigation return flow water, and serves as a receiving water body for the City of Vacaville's treated wastewater.

Much has been said about the potential conflict between the operation of the NBA intake at Barker Slough, within the CSC, and ongoing habitat conservation and restoration efforts. How the Solano Project and other surface water supplies, management of the Solano groundwater sub-basin, and/or operation and maintenance of the Ulatis Flood Control Project potentially impact the ecology of the CSC – for better or worse - is not well documented and largely unknown.

What is the purpose of this study and what will the information be used for?

This study is part of a larger, long-term objective of the Water Agency: to become well informed and a recognized authority on the physical and biological characteristics of the Cache Slough Complex. Ultimately, it is anticipated that the information obtained from this and other in-house or Water Agency sponsored studies will allow for more informed policy decisions by the Water Agency vis-à-vis the Solano Project, North Bay Aqueduct, and Ulatis Flood Control Project.

Specifically, it is anticipated that the information obtained from this study will among other things, help address the following questions:

- a) Could the North Bay Aqueduct Alternate Intake Project be reformulated to provide additional environmental benefits within the CSC, thereby possibly justifying State and Federal investments beyond traditional infrastructure funding sources?
- b) If pursuant to the ongoing Bay-Delta Plan update, the Solano Project is ultimately obligated to release additional water for the environmental purposes in the Yolo Bypass and CSC, what can be done to achieve those environmental benefits with maximum efficiency and effectiveness?
- c) How does current operation of the Ulatis Flood Control Project impact the physical and biological characteristics of the CSC and what can be done to preserve if not enhance current uses and at the same time amplify environmental benefits to the CSC?
- d) What actions can be taken at the Water Agency's Petersen Ranch to maximize habitat mitigation credits while preserving ongoing agricultural operations?

Why UC Davis?

Given the aforementioned intended uses of the information, it is critically important that the data derived from the proposed study be credible in the eyes of the scientific community and perhaps more importantly, State and Federal resource agencies. The UC Davis Center for Watershed Sciences and Dr. John Durand, the principal investigator of the proposed study, more than satisfy that requirement. Dr. Durand and his graduate students have conducted a number of the studies – and published scientific papers pertaining to - the ecology of the CSC and surrounding area. Dr. Durand's knowledge of the CSC and the fact that UC Davis, along with the university's water quality laboratory and field equipment, are near the CSC is a significant asset.

Staff considered contracting with private-sector firms to conduct the study, and while there are capable firms, none can match the qualifications the UC Davis Center for Watershed Sciences has with respect to the CSC. Furthermore, the UC Davis' net costs to conduct the study, while substantial, are still very reasonable in comparison to private sector firms – actually cheaper than most private sector firms – due to the availability of graduate students for labor intensive field tasks.

Study oversight and conduct

Water Agency staff will be working closely with their UC Davis counterparts, as there are certain elements of the proposed study that interface with ongoing Water Agency streamflow/quality monitoring efforts in and near the CSC. Pursuant to the proposed contract, the study may be terminated by either party at any time, without cause, upon written notification to the other party. Given the importance of the study, staff anticipates making quarterly briefings to the SCWA Advisory Commission and the SCWA Board on the status of work completed and findings to date. As discussed earlier, funding for the first year of this study has been programed into the Water Agency's FY 2017-2018 budget. Funding for the successive years of the study will continue to be at the discretion of the SCWA Board.

SOLANO COUNTY WATER AGENCY

AGREEMENT FOR PROFESSIONAL SERVICES

THIS AGREEMENT, effective October 12, 2017 is between SOLANO COUNTY WATER AGENCY, a public agency existing under and by virtue of Chapter 573 of the 1989 statutes of the State of California, hereinafter referred to as "Agency" and THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, hereinafter referred to as "Contractor."

The Agency requires services for the **Cache Slough Water Quality, Productivity and Fisheries Study**; and the Contractor is willing to perform these services pursuant to the terms and conditions set out in this Agreement.

IT IS MUTUALLY AGREED, as follows:

1. SCOPE OF SERVICES

The Agency hereby engages the Contractor, and the Contractor agrees to perform the services for evaluating the **Cache Slough Water Quality, Productivity and Fisheries Study**, as described in Exhibit A, in accordance with the terms of this Agreement and any applicable laws, codes, ordinances, rules or regulations. In case of conflict between any part of this Agreement, this Agreement shall control over any Exhibit.

2. COMPENSATION

Compensation for services shall be as follows: Percentage of effort for personnel plus any allowed reimbursable expenses based on costs incurred as indicated on any allowed reimbursable expense in Exhibit B not to Exceed **\$1,259,017** for all work contemplated by this Agreement.

3. METHOD OF PAYMENT

Upon submission of an invoice by the Contractor and upon approval of the Agency's representative, the Agency shall pay the Contractor quarterly in arrears for fees and allowed expenses incurred the prior month, up to the maximum amount provided for in paragraph 2 of this agreement.

4. TIME OF PERFORMANCE

This Agreement shall become effective as of October 12, 2017 and continue until June 30, 2020 as directed by the Agency.

5. WARRANTY

Except as provided herein, the University makes no warranty respecting the accuracy of data or materials furnished hereunder nor the results to be obtained from using such data or materials for intended purpose or any other purpose. University liability shall be limited to the amount of this order. The Agency has relied upon the ability and training of the Contractor as a material inducement to enter into this Agreement. The Contractor hereby represents that all of its work will be performed in accordance with the requirements of applicable federal, state and local laws, it being understood that acceptance of the Contractor's work by Agency shall not operate as a waiver or release.

6. MODIFICATION AND TERMINATION

This Agreement may be modified or amended only by written instrument signed by the parties hereto, and the Contractor's compensation and time of performance of this Agreement shall be adjusted if they are materially affected by such modification or amendment.

Any change in the scope of the services to be done, method of performance, nature of materials or price thereof, or to any other matter materially affecting the performance or nature of the professional services will not be paid for or accepted unless such change, addition or deletion be approved in advance, in writing, by the Agency's General Manager.

This Agreement may be terminated by the parties at any time, without cause, upon written notification to the other.

Following termination by the Agency or the Contractor, the Contractor shall be reimbursed for all expenditures made in good faith, including any uncancellable obligations, in accordance with the terms of this Agreement that are unpaid at the time of termination.

7. PERMITS

Permits required by governmental authorities will be obtained at the Contractor's expense, and the Contractor will comply with local, state and federal regulations and statutes including Cal/OSHA requirements.

8. MUTUAL INDEMNIFICATION

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA shall defend, indemnify and hold harmless SOLANO COUNTY WATER AGENCY, its agencies, officers, employees, and agents from and against any and all liability, loss, expense, attorneys' fees or claims for injury or damages arising from the performance of this agreement, but only in proportion to and to the extent such liability, loss, expense, attorneys' fees or claims for injury or damages are caused by or result from the negligence or intentional acts or omissions of THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, its agencies, officers, employees and agent.

SOLANO COUNTY WATER AGENCY shall defend, indemnify and hold harmless THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, its agencies, officers, employees and agents, from and against any and all liability, loss, expense, attorneys' fees or claims for injury or damages arising from the performance of this agreement, but only in proportion to and to the extent such liability, loss, expense, attorneys' fees or claims for injury or damages are caused by or result from the negligence or intentional acts or omissions of SOLANO COUNTY WATER AGENCY, its agencies, officers, employees and agent.

9. INSURANCE

By his/her signature hereunder, Contractor certifies that he/she is aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and that Contractor will comply with such provisions before commencing the performance of the professional services under this agreement. Contractor and subcontractors will keep workers' compensation insurance for their employees in effect during all work covered by this agreement.

Contractor will file with the Agency, before beginning professional services, certificates of insurance satisfactory to the Agency evidencing general liability coverage of not less than \$1,000,000 per occurrence (\$2,000,000 general and products-completed operations aggregate (if used)) for bodily injury, personal injury and property damage; auto liability of at least \$1,000,000 for bodily injury and property damage each accident limit; workers' compensation (statutory limits) and employer's liability (\$1,000,000) (if applicable); requiring 30 days (10 days for non-payment of premium) notice of cancellation to the Agency. Any insurance, self-insurance or other coverage maintained by the Agency, its directors, officers, employees, or authorized volunteers shall not contribute to it. The general liability coverage shall give the Agency, its directors, officers, employees, and authorized volunteers insured status using ISO endorsement CG2010, CG2033, or equivalent. Coverage is to be placed with a carrier with an A.M. Best rating of no less than A- :VII, or equivalent, or as otherwise approved by the Agency. In the event that the Contractor employs other contractors (subcontractors) as part of the work covered by this agreement, it shall be the Contractor's responsibility to require and confirm that each subcontractor meets the minimum insurance requirements specified above.

If any of the required coverages expire during the term of this agreement, the Contractor shall deliver the renewal certificate(s) including the general liability additional insured endorsement to the Agency at least ten (10) days prior to the expiration date.

10. COMPLIANCE WITH LAW

The Contractor shall be subject to and comply with all federal, state and local laws and regulations applicable with respect to its performance under this Agreement, including but not limited to, licensing, employment and purchasing practices; and wages, hours and conditions of employment.

11. SUBCONTRACT AND ASSIGNMENT

This Agreement binds the officers, employees and agents of the Contractor. The Contractor shall not enter into subcontracts for any work contemplated under this Agreement and shall not assign this Agreement or monies due or to become due, without the prior written consent of the General Manager of the Agency or his designee, subject to any required state or federal approval.

12. NONRENEWAL

The Contractor understands and agrees that there is no representation, implication, or understanding that the services provided by the Contractor under this Agreement will be purchased by the Agency under a new agreement following expiration or termination of this Agreement, and waives all rights or claims to notice or hearing respecting any failure to continue purchase of all or any such services from the Contractor.

13. NOTICE

Any notice provided for herein are necessary to the performance of this Agreement and shall be given in writing by personal delivery or by prepaid first-class mail addressed as follows:

AGENCY

CONTRACTOR

**Roland Sanford, General Manager
Solano County Water Agency
810 Vaca Valley Parkway, Suite 203
Vacaville, CA 95688**

**Ahmad Hakim-Elahi, Executive Director
Office of Research, Sponsored Programs
University of California
1850 Research Park Drive, Suite 300
Davis, CA 95618**

EXHIBIT A-Scope of Work

OVERVIEW

The north Delta is the principal remaining habitat for native fishes in the upper San Francisco Estuary. Suisun Marsh, Cache Slough, Lindsey Slough, Liberty Island, the Yolo Bypass, and the Deep Water Shipping Channel form an arc of fresh and brackish habitats that offer the highest potential for tidal restoration projects.

The North Delta Arc and Water Quality Study was started in 2012 to describe the Cache-Lindsey Slough Complex (CLC) and its response to changes in environmental conditions. During the course of the study, the region has been subject to drought, record water flows, experimental water releases, and tidal restoration projects. The study has tracked water quality, nutrients, food-web dynamics, and fish populations in the CLC. Maintaining this time series offers an opportunity to understand basic estuarine ecosystem function, the effect of climate change and sea-level rise, and the influence of tidal restoration actions. It also serves as a platform from which to mount targeted experimental approaches that answer nuanced questions about the function of restoration, flows, and other changes to the system.

Our research at UC Davis Center for Watershed Sciences (CWS) suggests differences in function between Cache and Lindsey sloughs that we suspect result from water inputs and withdrawals. To understand the effects more completely, we are proposing experimental studies of water quality that would complement and extend the ongoing time series that has been conducted here.

Objectives:

1. Use Cache and Lindsey Slough complexes as a comparative experimental system to understand how variability in physical structure, management, water quality, and food-web production supports fish abundance and community composition in the Delta
2. Understand the effect of flow pulses from up-slough sources (e.g., overland flow, agriculture returns, and Ulati Creek) on the longitudinal distribution of water-quality conditions and the pelagic food web.
3. Understand impacts of drought, flood and climate change on the environment and water management needs and practices.
4. Recommend actions to support successful restoration outcomes for food webs and desirable fishes
5. Recommend actions to manage invasive plants and animals
6. Recommend flow regimes and water management practices that would optimize water-quality conditions for consumptive use and environmental restoration

INTRODUCTION

Interfaces between ecosystems provide sources and sinks of nutrients, carbon, and organisms. The historic connectivity between terrestrial and aquatic systems largely has been lost in the Sacramento-San Joaquin Delta because of the dramatic re-engineering and hardening of the

landscape into channels contained by levees. However, a few examples of connectivity remain: the Mallard Slough complex in Suisun Marsh; the Yolo Bypass/Sacramento River during flood years; and the western terminal ends of the Cache-Lindsey Slough system. Cache and Lindsey sloughs would have been connected historically to Maine and Jepson prairies. Today, urban and agricultural runoff, including flows from Vacaville's Easterly Waste Water Treatment Plant, are directed into Ulatis Creek with unknown implications for water quality, food webs, and fishes. Cache and Lindsey sloughs have very different features, in spite of their close physical proximity. Cache Slough is highly leveed but subject to periodic large water inputs from the upstream Ulatis Creek Watershed, which provides both local flood control and conveyance for irrigation tail water. It has at times had a high proportion of native fishes, including delta smelt and other planktivores. It has relatively less submersed and floating aquatic vegetation than other parts of the Delta.

In contrast, Lindsey Slough is leveed near the mouth but opens up into somewhat extensive intertidal and riparian habitat in the upper reaches. Water inputs come mostly from Jepson Prairie overland flow, the Big Ditch, and the Barker Slough Watershed. However, flows may be influenced by withdrawals for the North Bay Aqueduct from the Barker Slough Pumping Plant (BSPP). A major tidal restoration project recently implemented remains largely unstudied. The fish community is dominated by alien littoral species, and has a much higher proportion of submersed and floating aquatic vegetation than Cache Slough.

Physical and hydrodynamic differences between the two systems provide an opportunity to evaluate mechanisms that drive the biological differences. Water withdrawals and inputs are likely to affect hydrodynamics, water quality, ecosystem production, and species composition of Cache and Lindsey sloughs. The main up-slough elements with potential to affect the system are 1) Ulatis Creek inputs; 2) inputs from agricultural returns (for example, Hass Slough and the Big Ditch system); 3) overland flow (for example, at upper Lindsey/Calhoun and Barker sloughs); and 4) municipal and agricultural withdrawals including the BSPP. The main down-slough elements with potential to affect Cache and Lindsey Sloughs are 1) winter/spring Yolo Bypass flows during flood years; 2) fall Yolo Bypass planned releases from rice fields to support the Delta Smelt Resiliency Strategy; and 3) Sacramento River flows and changes in water quality (for example, due to changes resulting from the Sacramento Waste Water Treatment plant upgrade, expected in 2021-23).

We hypothesize that differences in exports and imports have a large influence on the ecological characteristics of Cache and Lindsey sloughs. We propose to study patterns of upslope runoff and connectivity with the slough complex in response to storm events, overland flow into Lindsey Slough, flow releases from Ulatis into Cache, and releases from the Yolo Bypass in spring and fall. We propose to study changes in conditions at the terminal ends of Cache, Lindsey, and Barker sloughs to understand how interactions at the terrestrial-aquatic interface

affect nutrient chemistry and ecosystem productivity. As part of this, we will include a study of ecosystem dynamics in Barker, Cache, and/or Ulatis sloughs, where flows may be highly unidirectional at times from municipal and agricultural operations or runoff events and water, nutrients, and productivity are exported. The study will also investigate flow and velocity magnitudes to identify what impacts municipal and agricultural operations may have on native and non-native fisheries. To understand the impact of Barker Slough withdrawals and Ulatis Creek inputs on the entire slough complex, the study will focus on capturing major runoff events and shutdown events for the NBA through a collaborative effort between CWS and the Solano County Water Agency (SCWA).

CWS is currently completing the first stage of an open-source depth-averaged hydrodynamic, sediment transport, and water-quality model of the Cache-Lindsey Slough region. The grid and Digital Elevation Model (DEM) are built on existing grids generated at CWS and bathymetry observations collected by California Department of Water Resources (DWR), CWS, and others. The model will be calibrated and updated using water level, flow, salinity, temperature, and turbidity from existing data collected by CWS. A range of flow conditions will be considered, and the model validation period will be for distinctly different flow conditions than the calibration period. The model will be used to quantify transport time scales which characterize exchange rates between different reaches of the slough systems. Output from the hydrodynamic model will be used to formulate hypotheses to be tested by experimental approaches. By combining analysis of estimated transport time scales and export rates, we will hypothesize what conditions optimize food production or other desired water-quality conditions. These hypotheses can be tested by first improving our understanding of the various water operations and then targeting key periods of overland flow, changes in water operation, and during operational shutdowns.

The system response will be studied using several investigative approaches, including:

- 1) Geographic studies of regional connectivity, management practices, and sea-level rise;
- 2) Continuous real-time monitoring of water quality and flow;
- 3) Nutrient inputs and uptake;
- 4) Production rate experiments;
- 5) Stable isotope analyses; and
- 6) Fish, invertebrate, and water-quality time series

1) GEOGRAPHIC STUDIES OF CONNECTIVITY, MANAGEMENT PRACTICES AND SEA LEVEL RISE

Geographic studies will support integrated understanding of water use and management among stakeholders in the region in order to tie that into positive restoration outcomes, and support experimental design for biological studies.

- a. Uses data that have been compiled by previous work, including GIS layers and regional planning documents, to support our understanding of the the physical connections with upslope habitat on prairies and towns in the basin. Analysis will include stakeholder ownership, agency jurisdictions, historic connectivity, wetland and levee extent, and current infrastructure.
- b. Work with SCWA and other regional stakeholders to create a synthesis of water use and management, including a description of water inputs and withdrawals and accompanying expected ranges during different water years. These data will be used as boundary conditions in the hydrodynamic model discussed below (d).
- c. Collaborate with BDCP, RMA, and California WaterFix to create an assessment of the effect of sea-level rise in the region on BSPP withdrawals, Ulatis Creek drainage, and restoration sites (including the Lindsey Slough Tidal Marsh Restoration) over a 100-year time span, using GIS layers showing potential water encroachment and summarizing potential changes in water management practices.
- d. Using computer models, generate quantitative predictions to changes in flow and turbidity in response to changes in withdrawals and imports. Using these predictions, make qualitative predictions about the impact on food-web constituents' biomass, productivity, and export. Ensure that SCWA has the resources and training to use the open source hydrodynamic model (UnTRIM, Delft3D) of the region developed at UC Davis since 2012.
- e. Determine possible pumping schedules to support experimental design of ecological studies, including nutrient and food-web export. Prepare experimental design to coordinate with releases from Ulatis Creek or other sites; or with storm events that will have anticipated significant run-off in Barker, Calhoun Cut or Lindsey Sloughs; or with changes in pumping rates from the BSPP.

2) CONTINUOUS REAL-TIME MONITORING OF WATER QUALITY AND FLOW

High-resolution data can document system responses to rain events, shifts in water export release, and tidal cycles. A sufficiently fine-scale array that includes flow gauges and water-quality instruments provides the opportunity to examine these responses in real time, and to allow researchers background data to know when to execute seasonal studies.

UC Davis researchers will coordinate with multiple agencies including US Geologic Survey (USGS), DWR, and SCWA to establish and maintain an array of continuously recording water- quality and flow gauges in an array across the Cache-Lindsey region.

The array will include multi-parameter sondes and flow gauges to measure the standard water-quality parameters (temperature, dissolved oxygen, electroconductivity, turbidity, and pH), plus additional probes for chlorophyll-*a* fluorescence, photosynthetically active radiation (PAR), depth, and dissolved organic carbon (fDOM). Fixed deployments will be

surveyed using real-time kinematic satellite navigation to establish elevation for tide stage estimation. These will be distributed across the region in a configuration as suggested in Figure 1.

- a. Gauges may be installed at several sites including Ulatis Creek, Hass, Upper and Lower Barker, Barker Pumping Plant, Upper Calhoun, Calhoun Cut, and Lindsey Restoration to measure water velocity and evaluate the impact of runoff and flow in upper Cache-Ulatis and Lindsey-Barker sloughs
- b. Coordinate with SCWA and USGS efforts to add a complement of water-quality parameters in existing or new water-quality stations including sites such as Ulatis Creek, Cache Terminus, Cache Below Ulatis, Hass Slough, Cache Below Hass, Upper and Lower Barker, Calhoun Cut, Lindsey Restoration, Middle Lindsey, and Lower Lindsey (electroconductivity, temperature, dissolved oxygen, turbidity, pH, photosynthetically active radiation, dissolved organic matter, and chlorophyll-*a* fluorescence).
- c. Collaborate with USGS and SCWA to conduct validation sampling and data post-processing as needed.



Figure 1. Proposed WQ monitoring stations. Yellow=flow gauges only; Green=water quality + flow gauge; Blue=water quality only.

3) NUTRIENT IMPORT AND EXPORT

Although the San Francisco Estuary is often characterized as a nutrient-rich, low-productivity ecosystem, this is not the case uniformly across the Delta. Nutrient exchanges across the terrestrial-aquatic interface, occurring in terminal sloughs and wetlands, may enhance bloom formation, which in turn can support high zooplankton and fish abundance. Although these sites appear to be nutrient-limited at times, allochthonous inputs (e.g., riparian vegetation), runoff from freshwater creeks and/or wastewater discharge may help fuel production. If true, restoration designs featuring mosaics of habitats with diverse nutrient and water sources may be a key aspect of supporting desirable food webs.

We propose to resolve uncertainties about up-slough production and export using targeted intensive sampling to determine nutrient sources, usage, and uptake rates. To do this, whole water grabs will be collected for lab analyses (which will be conducted in the Dahlgren geochemistry laboratory at UC Davis, using standard analysis techniques from “Standard methods for the examination of water and wastewater” Eaton, et al. 1998). Data will be used to validate sonde sensor readings (for chlorophyll-a, fDOM, and turbidity). Additional laboratory analyses will include electroconductivity, pH, turbidity, total phosphorous, total dissolved phosphorous, orthophosphate, total nitrogen, total dissolved nitrogen, ammonia, nitrate, dissolved organic carbon, total nitrogen:total phosphorous, chlorophyll-a, phaeophytin-a, total suspended solids, and volatile suspended solids.

- a. Whole-water sampling to track nutrient dispersion will be conducted to track allochthonous contributions to the aquatic food web.
- b. Sampling will occur monthly during Dec-June, or more frequently during mid/late winter and early spring storms, when overland flows impact the aquatic ecosystem, and during experimental manipulations of Ulatis Creek and BSPP. Experimental periods might include Fall Pulse flows, first flush event, major storms, major flow changes in Ulatis Creek and/or BSPP, or other experiments.
- c. For approximately three weeks during experimental periods (see above), nutrient, chlorophyll-a, and zooplankton collections will occur during each the peak of each spring and neap tidal cycle, with each day’s collection occurring once on the high tide and once on the low.
- d. Productivity incubations may be conducted concurrently with field collections on this schedule: once before event; once per week during spring and neap peaks following event; and once after return to typical (pre-experimental) conditions, as determined by water-quality parameters.
- e. Samples will be spatially discrete along the longitudinal axis of each slough system from upland creek to mouth, to examine the spatial extent of influence from external sources.

4) PRODUCTION RATE EXPERIMENTS

Growth rate experiments will be conducted to support nutrient and chlorophyll sampling. By measuring biological oxygen demand and phytoplankton growth rate in microcosms, we will be able to understand how inputs and withdrawals change ecosystem metabolism, in particular the impact of Ulatis Creek inputs from the Easterly Wastewater Treatment Plant and additional non-point sources.

- a. Collect whole water grabs for incubations on the same schedule as nutrient water/water quality grabs (above, part 3c).
- b. Split water samples into biological oxygen demand chambers (for bacterial/heterotrophic growth measurements) and light/dark bottle chambers (for phytoplankton growth measurements).
- c. Net pelagic microbial and phytoplankton productivity rates will be estimated from 24- to 48-hour incubations using biological oxygen demand chambers using light and dark chambers.
- d. Before the experimental period begins, establish baseline conditions from initial field collection samples and run incubations.
- e. Subsequent incubations shall be conducted from field collections on this schedule: once before event; once per week during spring and neap peaks following event; and once after return to typical (pre-experimental) conditions, as determined by water-quality parameters.
- f. Samples will be spatially discreet along the longitudinal axis of each slough system from upland creek to mouth, to examine the spatial extent of influence from external sources.

5) FISH, INVERTEBRATE, and WATER-QUALITY TIME SERIES

Monthly otter trawls and water-quality surveys will add to a time series dating from 2012, tracking changes to the ecosystem across both drought and flood conditions. These data provide background information to help interpret nutrient and stable isotope studies of local food webs, and how environmental conditions affect fish community composition, distribution, and relative abundance. They will also contribute to our understanding of the impact of drought and flood, and the effect of restoration projects on native and alien fish communities.

- a. Monthly otter trawling for fishes at ~16 stations throughout the north Delta: Cache, Ulatis, Hass, Lindsey, Calhoun Cut, Barker, and Liberty Island (Wildlands) sloughs (See Figure 2, below)
- b. Monthly seining for fishes at ~6 stations throughout the Cache Lindsey Slough region, including upper Barker, Lindsey and Cache near Hwy 113
- c. Biannual electrofishing at ~16 stations
- d. Monthly zooplankton biomass sampling at ~6 stations

- e. Monthly water grab sampling for nutrients, phytoplankton and water quality validation of WQ sonde array at ~8-16 stations
- f. Monthly water-quality longitudinal transects of Cache, Lindsey, Shag, Stairsteps, and Wildlands sloughs using a multiparameter sonde.

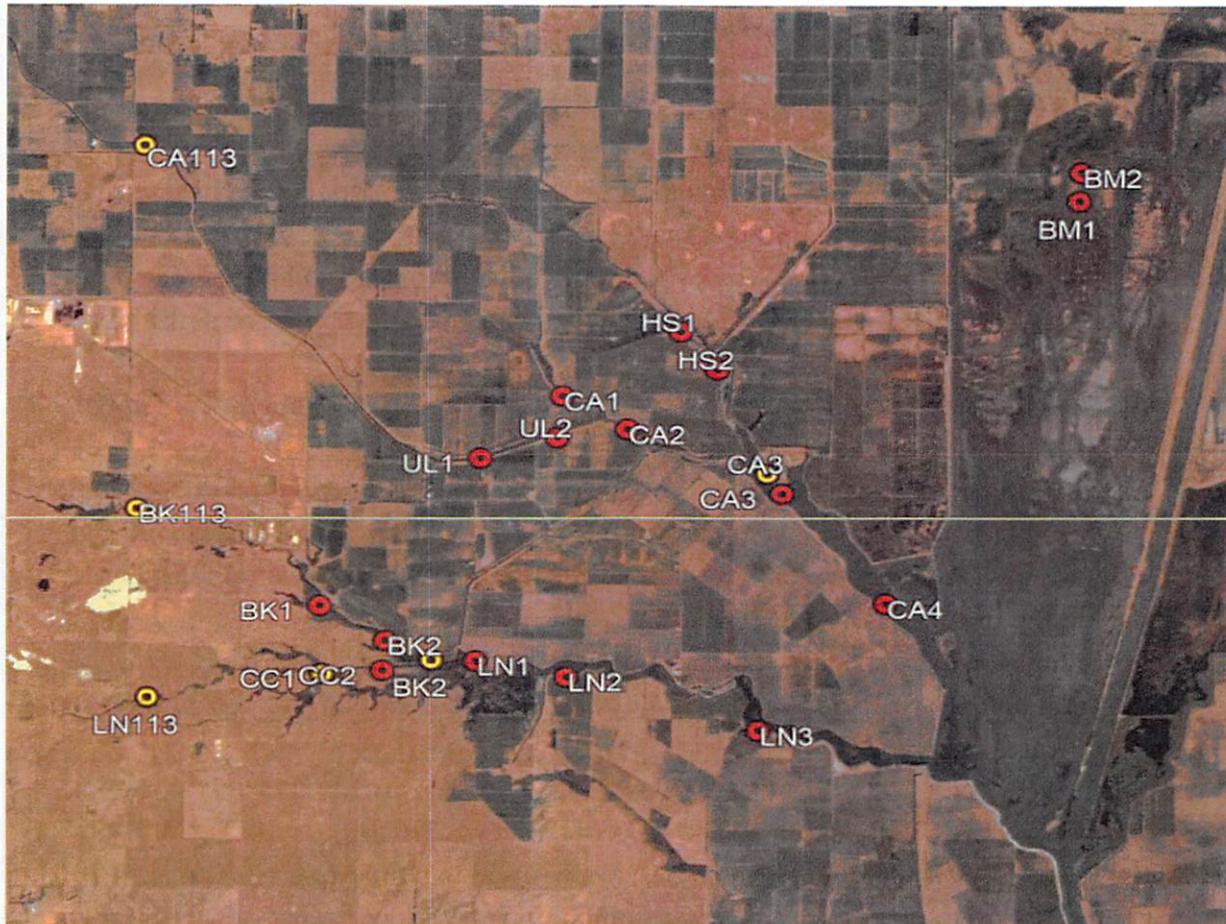


Figure 2. Fish trawling and seining stations in the Cache Lindsey Complex. Red markers indicate otter trawling stations; yellow markers indicate beach seines. Most of the stations have been sampled monthly since 2012.

DELIVERABLES

1. Annual Reports
2. Final Report
3. Three peer-reviewed papers:
 - a. Nutrient and water quality responses to changes in flow patterns, including water withdrawals and inputs to Cache and Lindsey Sloughs
 - b. Spatial and temporal patterns of phytoplankton productivity and export in the Cache Lindsey complex

- c. Spatial and temporal changes in fish community composition in response to environmental conditions and habitat restoration
4. Presentation of findings to SCWA and regional conferences
5. Consultations to local stakeholders and SCWA about regional management and restoration practices

SCHEDULE

See Table 1.

2017-2020

Monthly: Fish and water-quality transects

2019

December-June: Target two independent storm events to measure effects of overland flow

June-July: Flow modification experiments on Ulatis and Barker

August: Delta Smelt Resiliency Strategy fall pulse flow releases down Toe Drain

September-October: Flow modification experiments on Ulatis and Barker

2020

Analysis and results

Reports and publications

Table 1. Schedule

Year	Mo/YR	Activities					
		Task 1 Geo Studies	Task 2 WQ	T3 Nutrient Import and Export	T4 Phytoplankton Production	T5 Fish & WQ Timeseries	
Year 1	Oct-17					Trawling WQ	
	Nov-17					Trawling WQ	
	Dec-17					Trawling WQ	
	Jan-18					Trawling WQ	
	Feb-18					Trawling WQ	
	Mar-18					Trawling WQ	
	Apr-18					Trawling WQ	EF
	May-18					Trawling WQ	
	Jun-18					Trawling WQ	
	Jul-18					Trawling WQ	
	Aug-18					Trawling WQ	
	Sep-18					Trawling WQ	EF
Year 2	Oct-18					Trawling WQ	
	Nov-18					Trawling WQ	
	Dec-18					Trawling WQ	
	Jan-19					Trawling WQ	
	Feb-19					Trawling WQ	
	Mar-19			Storm1	Incubations	Trawling WQ	
	Apr-19			Storm2	Incubations	Trawling WQ	EF
	May-19					Trawling WQ	
	Jun-19			Ulatis/Barker1	Incubations	Trawling WQ	
	Jul-19			Ulatis/Barker1	Incubations	Trawling WQ	
	Aug-19			Yolo	Incubations	Trawling WQ	
	Sep-19			Ulatis/Barker2	Incubations	Trawling WQ	EF
Year 3	Oct-19			Ulatis/Barker2	Incubations	Trawling WQ	
	Nov-19					Trawling WQ	
	Dec-19					Trawling WQ	
	Jan-20					Trawling WQ	
	Feb-20					Trawling WQ	
	Mar-20					Trawling WQ	
	Apr-20					Trawling WQ	EF
	May-20					Trawling WQ	
	Jun-20					Trawling WQ	
	Jul-20					Trawling WQ	
	Aug-20					Trawling WQ	
	Sep-20					Trawling WQ	EF

EXHIBIT B

BUDGET

Table 2. Budget (estimated costs not finalized or approved by UC Davis)

Category	By Year			By Task				
	2017-18	2018-19	2019-20	T1 Geo Studies	T2 WQ	T3 Nutrient Import and Export	T4 Production Rate	T5 Fish & WQ Timeseries
Personnel	\$163,486	\$150,395	\$167,016	\$42,318	\$101,190	\$155,557	\$36,086	\$145,746
Benefits	\$64,131	\$33,542	\$42,150	\$20,820	\$27,254	\$49,232	\$8,616	\$33,903
Equipment	\$20,000			\$0	\$0	\$0	\$0	\$20,000
Travel/Transport	\$7,313	\$13,290	\$7,313	\$0	\$0	\$16,197	\$1,500	\$10,220
Supplies	\$12,294	\$49,294	\$9,294	\$0	\$0	\$0	\$40,000	\$30,882
GSR Fees		\$29,610	\$32,572		\$15,546	\$15,546	\$15,546	\$15,546
Other: Repair, Disposal, Rents	\$10,019	\$39,629	\$42,591	\$0	\$15,546	\$15,546	\$24,534	\$36,615
Direct Costs	\$277,243	\$286,150	\$268,364	\$63,138	\$143,989	\$236,531	\$110,735	\$277,365
Indirect Costs	\$146,629	\$146,228	\$134,402	\$32,433	\$73,965	\$121,502	\$56,882	\$142,478
Total Costs	\$423,872	\$432,378	\$402,766	\$95,571	\$217,954	\$358,032	\$167,617	\$419,843
Grand Total			\$1,259,017					\$1,259,017

Table 3. Labor hours summed by Task.

Task	Labor Hours
T1 Geo Studies	1,357
T2 WQ	4,026
T3 Nutrient Import and Export	4,966
T4 Production Rate	1,159
T5 Fish & WQ Timeseries	10,604