MID-PENINSULA
WATER DISTRICT

REGULAR MEETING
BOARD OF DIRECTORS
WEDNESDAY, DECEMBER 16, 2015 – 6:30PM
3 DAIRY LANE, BELMONT CALIFORNIA

AGENDA

1. OPENING

A. Call to Order
B. Pledge of Allegiance
C. Receive Certificate from San Mateo County Chief Elections Officer dated November 24, 2015
D. Administer Oath of Office: Louis J. Vella and Matthew P. Zucca
E. Establishment of Quorum
F. Election of Officers (Followed by a Reception)

2. PUBLIC COMMENT

Members of the public may address the Board on the Consent Agenda or any item of interest within the jurisdiction of the Board but not on its agenda today. In compliance with the Brown Act, the Board cannot discuss or act on items not on the agenda. Please complete a speaker's form and give it to the District Secretary. Each speaker is limited to three (3) minutes.

3. AGENDA REVIEW: ADDITIONS/DELETIONS AND PULLED CONSENT ITEMS

4. ACKNOWLEDGEMENTS/PRESENTATIONS

Jon Tscharner, Maintenance Technician: Service Anniversary – 25 Years
Henry Young, Field Operations Supervisor: Service Anniversary – 15 Years

5. CONSENT AGENDA

All matters on the Consent Agenda are to be approved by one motion. If Directors wish to discuss a consent item other than simple clarifying questions, a request for removal may be made. Such items are pulled for separate discussion and action after the Consent Agenda as a whole is acted upon.

A. Approve Minutes for the Regular Board Meeting of November 16, 2015

B. Approve Expenditures from November 5, 2015, through December 2, 2015

C. Approve Professional Services Agreement in the amount of $38,860 with Managewater Consulting, Inc., for the 2015 Urban Water Management Plan with an Option Not to Exceed $10,000 to Revise MPWD's Water Shortage Contingency Plan

6. HEARINGS AND APPEALS

A. Public Hearing to Consider Ordinance 115 Adopting the BAWSCA Regional Model Water Efficiency Landscape Ordinance (MWELO), effective February 1, 2016

7. DROUGHT AND WATER CONSERVATION

A. Water Conservation Progress Report

8. REGULAR BUSINESS AGENDA

A. Consider Resolution 2015-21 Adopting MPWD 5-Year Capital Improvement Program for Fiscal Years 2016/2017 through FY 2020/2021

B. Consider Resolution 2015-22 Authorizing the Commencement of Proceedings in Connection with the Financing of Water System Improvements and Appointing a Municipal Advisor, a Bond Counsel, and a Disclosure Counsel

C. Schedule MPWD Strategic Planning Special Meeting in January 2016

D. BAWSCA Update

9. MANAGER'S AND BOARD REPORTS

A. General Manager's Report
   1. Supplemented by Administrative Services Manager's Report
   2. Supplemented by Operations Manager's Report
   3. Supplemented by District Engineer's Report

B. Financial Reports

C. Director Reports

10. FUTURE AGENDA ITEMS

Requests from Board members to receive feedback, direct staff to prepare information, and/or request a formal agenda report be prepared and the item placed on a future agenda. No formal action can be taken.

11. COMMUNICATIONS

12. CLOSED SESSION

PUBLIC EMPLOYEE PERFORMANCE EVALUATION
AND ASSOCIATED NEGOTIATIONS
Government Code §§54957 and 54957.6
Title: General Manager

13. ADJOURNMENT

This agenda was posted at the Mid-Peninsula Water District's office, 3 Dairy Lane, in Belmont, California, and on its website at www.midpeninsulawater.org.

ACCESSIBLE PUBLIC MEETINGS
Upon request, the Mid-Peninsula Water District will provide written agenda materials in appropriate alternative formats, or disability-related modification or accommodation (including auxiliary aids or services), to enable individuals with disabilities to participate in public meetings. Please contact the District Secretary at (650) 591-8941 to request specific materials and preferred alternative format or auxiliary aid or service at least 48 hours before the meeting.

Next Regular Board Meeting: January 28, 2016, at 6:30PM

Mark Church

Chief Elections Officer & Assessor-County Clerk-Recorder

555 County Center
Redwood City, CA 94063
phone 650.363.4988 **fax** 650.363.1903
email mchurch@smcare.org
web www.smcare.org

November 24, 2015

Ms. Tammy Rudock
General Manager
Mid-Peninsula Water District
3 Dairy Lane
Belmont, CA 94002

Subject: Certificate of the Chief Elections Officer for the Consolidated Municipal, School and Special District All-Mailed Ballot Election held on Tuesday, November 3, 2015

Dear Ms. Rudock:

I am writing to let you know that we have completed the Official Canvass of the vote and I have certified the election results.

Attached hereto is the official Chief Elections Officer's Certification of the November 3, 2015 Election for your jurisdiction that was held in conjunction with the Consolidated Municipal, School and Special District All-Mailed Ballot Election.

It has been a pleasure to work with you in conducting this election and I look forward to serving you again in future elections.

Sincerely,

Mark Church

Enclosures

CERTIFICATE OF CHIEF ELECTIONS OFFICER

State of California
ss.
County of San Mateo

I, MARK CHURCH, Chief Elections Officer of the County of San Mateo, State of California, do hereby certify that:

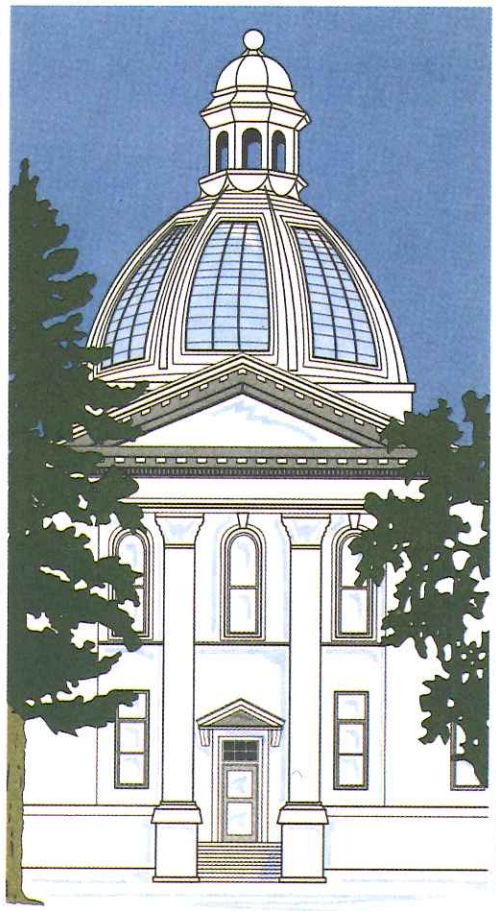
WHEREAS, the number of nominees for the Office of Member, Board of Directors, does not exceed the number of offices required by law to be filled at the Consolidated Municipal, School and Special District All-Mailed Ballot Election within the MID-PENINSULA WATER DISTRICT, held on November 3, 2015, the time within which nominations may be made has expired, and a petition signed by ten percent (10%) of the voters or 50 voters, whichever is the smaller number, requesting that said election be held, was not presented to the Chief Elections Officer within the time provided by law.

NOW, THEREFORE, pursuant to Elections Code §10515, the following qualified persons as listed below, are required to be appointed to two (2) seats for four (4) year terms:

Matthew Zucca Louis J. Vella

IN WITNESS WHEREOF, I hereunto affix my hand and seal this 24th day of November, 2015.

MARK CHURCH
Chief Elections Officer &
Assessor-County Clerk-Recorder



COUNTY OF SAN MATEO

CERTIFICATION OF ELECTION

This is to certify that

Louis J. Vella

was appointed to the office of

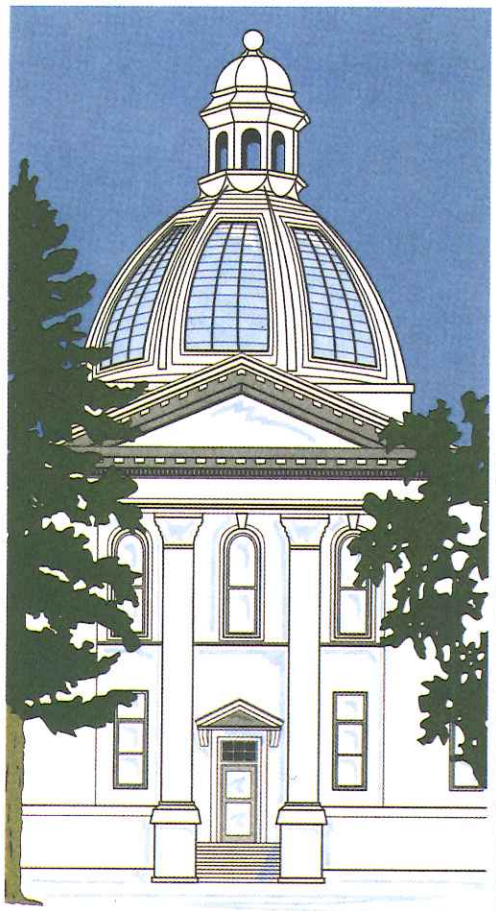
Member, Board of Directors

Mid-Peninsula Water District

In lieu of holding the Consolidated Municipal, School and Special District All-Mailed Ballot Election in San Mateo County on the 3rd day of November, 2015.

In witness whereof, I have hereunto set my hand and affixed my official seal this 24th day of November, 2015.

MARK CHURCH
Chief Elections Officer &
Assessor-County Clerk-Recorder



COUNTY OF SAN MATEO

CERTIFICATION OF ELECTION

This is to certify that

Matthew Zucca

was appointed to the office of

Member, Board of Directors

Mid-Peninsula Water District

In lieu of holding the Consolidated Municipal, School and Special District All-Mailed Ballot Election in San Mateo County on the 3rd day of November, 2015.

In witness whereof, I have hereunto set my hand and affixed my official seal this 24th day of November, 2015.

MARK CHURCH
Chief Elections Officer &
Assessor-County Clerk-Recorder

REGULAR MEETING
OF THE BOARD OF DIRECTORS
OF THE MID-PENINSULA WATER DISTRICT

November 16, 2015
Belmont, California

1. OPENING

A. Call to Order:
The regular meeting of the Mid-Peninsula Water District Board of Directors was called to order by Acting President Zucca at 7:48 PM.

B. Pledge of Allegiance – The Pledge of Allegiance was led by Director Vella.

C. Establishment of Quorum:
PRESENT: Directors Zucca, Stuebing, and Vella.

ABSENT: President Linvill and Director Warden.

A quorum was present.

ALSO PRESENT: General Manager Tammy Rudock, Administrative Services Manager Candy Pina, Operations Manager Rene Ramirez, District Counsel Julie Sherman, District Engineer Joubin Pakpour, and District Treasurer Jeff Ira.

2. PUBLIC COMMENTS

None.

3. AGENDA REVIEW: ADDITIONS/DELETIONS AND PULLED CONSENT ITEMS

General Manager Rudock requested that Regular Business Agenda Item 8.B. be considered first in order to accommodate consultant schedules.

4. ACKNOWLEDGEMENTS/PRESENTATIONS

None.

5. CONSENT AGENDA

A. Approve Minutes for the Regular Board Meeting of October 22, 2015.
B. Approve Expenditures from October 14, 2015, through November 4, 2015.
C. **Approve Contract for Professional Services in the amount of $42,400 with Cornerstone Structural Engineering Group, Inc., for Hallmark Water Storage Tanks Seismic Retrofit Evaluation and Strategy Development**
D. **Approve the Purchase of Four (4) Vehicles for MPWD Operations from Towne Ford of Redwood City for a Total Cost of $108,000**
E. Approve the Emergency Purchase and Replacement of a New Electric Motor for Pump #3 at MPWD's Tunnels Pump Station from Pump Repair Service Company of Daly City at a Cost Not to Exceed $60,000

Director Stuebing moved to approve the Consent Agenda, Director Vella seconded, and it was unanimously approved.

6. HEARINGS AND APPEALS

None.

7. DROUGHT AND WATER CONSERVATION

A. Water Conservation Progress Report

General Manager Rudock noted that October 2015 units were calculated by staff because the SFPUC meter at Tunnels, which had been changed out in the past month, appeared to be recording usage inaccurately. The October number of units will be updated and reported once this issue is resolved.

8. REGULAR BUSINESS AGENDA

A. Receive and Accept the Financial Audit Report for Fiscal Year Ended June 30, 2015, Presented by David Becker, CPA, of James Marta & Company LLP

General Manager Rudock acknowledged that David Becker, CPA, presented a summary of the Fiscal Year 2014/2015 financial audit. The auditor acknowledged an unqualified opinion for the MPWD, which is the best possible. The audit report was received and accepted by the Board.

B. Review MPWD PARS OPEB Trust Account Investment Structure and Performance, and Consider Resolution 2015-20 Approving Investment Portfolio for the OPEB Trust Account, and Receive Presentation about New PARS Pension Rate Stabilization Program

General Manager Rudock acknowledged that Jennifer Meza from PARS, and Andrew Brown from HighMark Capital Management, presented their annual summary of the OPEB trust account, and introduced the new PARS program:

C. Discuss Preliminary DRAFT of Proposed MPWD 5-Year Capital Improvement Program for Fiscal Years 2016/2017 through FY 2020/2021 and Financing Options

General Manager Rudock presented opening remarks regarding development of the 5-Year Capital Improvement Program (CIP) noting that this project is not only significant to the system but was an excellent team building opportunity for staff. Operations Manager Ramirez provided a summary of the rating criteria and ranking process by which staff analyzed each identified project and the final development of the proposed 5-year, 10-year, and beyond capital programs.

General Manager reported additional capital projects not included in the preliminary proposal, which included $1.5 million for Dairy Lane structural and property rehabilitation and improvements, $2 million to complete AMI installation project, and $1.5 million for SCADA system replacement, rehabilitation, and upgrade. Acting President Zucca asked that the additional capital projects be included in the CIP 5-year, 10-year, and beyond 10-year plans where appropriate. Director Vella requested assurance that the MPWD would be coordinating with the City of Belmont on these projects.

General Manager Rudock introduced debt service to finance the CIP work. Acting President Zucca asked that a plan be put together with options to accomplish more than what had been introduced. He also asked that options be given to include extending the payback period to 45 years. He also requested that there be a timeline considering what

would be done in each of the first five years. He asked that there be consideration given to how the pay-go funds ($1 million each year) would be spent.

9. MANAGER'S AND BOARD REPORTS

A. General Manager's Report

General Manager Rudock highlighted the 2015 UWMP, noting that six (6) firms received the MPWD's Request for Proposal (RFP). She disclosed that EKI was not included on the consultant list, because of Acting President Zucca's affiliation with the firm. The Board confirmed that staff review the proposals and recommend the firm for the Board's consideration.

1. Supplemented by Administrative Services Manager's Report

Administrative Services Manager Pina commented on the successful San Carlos Charter Learning Center field trip, noting that parents said this field trip was the best one they had been to, and thanked staff for their work.

2. Supplemented by Operations Manager's Report

Operations Manager Ramirez highlighted that all 22 pressure regulating valves found at the 12 system stations have been rebuilt over the past four months. This is the first time in 10 years that all regulators are fully functional at the same time.

3. Supplemented by District Engineer's Report

District Engineer Pakpour discussed five projects:

a. Survey field work on the MPWD's Folger properties will be completed by the end of November;
b. Karen Road water main replacement project survey will be completed by the end of November;
c. Alameda de las Pulgas water main replacement project 80% design plans were submitted to staff for review;
d. DeKoven tanks' structural and seismic review is underway; and
e. Hallmark tanks' structural and seismic review will be initiated now that the consultant services contract has been approved.

B. Financial Reports

General Manager Rudock noted that total revenues and expenses are on target.

C. Director Reports

Director Stuebing reported he attended the San Mateo County California Special District Association (CSDA) meeting, where it was discussed that the county will be moving forward with a community choice allocation. This is related to cleaner and greener options for electricity.

10. FUTURE AGENDA BUSINESS ITEMS

General Manager Rudock highlighted next month's draft agenda

11. COMMUNICATIONS

None.

Director Stuebing motioned to adjourn at 9:04PM, Director Vella seconded, and it was unanimously approved.

_____
DISTRICT SECRETARY

APPROVED:

_____
BOARD PRESIDENT

Type	Num	Date	Name	Account	Paid Amount
Check		**11/06/2015**	**ADP Payroll Fees**	**1030 · Cash- Checking**	
				7106 · Prof Serv - Accting & Payroll	$ (309.65)
					$ (309.65)
Check		**11/10/2015**	**ACH Returns**	**1030 · Cash- Checking**	
				4013 · Returned Water Charges	$ (129.50)
					$ (129.50)
Check		**11/12/2015**	**Client Analysis Svs Charge**	**1030 · Cash- Checking**	
				6201 · Customer Credit Card Svs Fees	$ (3,884.58)
					$ (3,884.58)
Check	**EFT111015-1**	**11/10/2015**	**ICMA contributions**	**1030 · Cash- Checking**	
				1430 · Payroll Clearing A/C	$ (666.24)
					$ (666.24)
Check	**EFT111115-1**	**11/11/2015**	**CALPERS**	**1030 · Cash- Checking**	
				1430 · Payroll Clearing A/C	$ (1,262.03)
				1430 · Payroll Clearing A/C	$ (1,103.86)
					$ (2,365.89)
Check	**ET112415-1**	**11/24/2015**	**ICMA contributions**	**1030 · Cash- Checking**	
				1430 · Payroll Clearing A/C	$ (666.24)
					$ (666.24)
				1430 · Payroll Clearing A/C	$ (3,110.39)
					$ (3,110.39)
Check	**EFT111115-2**	**11/11/2015**	**ICMA contributions**	**1030 · Cash- Checking**	
				1430 · Payroll Clearing A/C	$ (887.98)
Check	**ET112415-2**	**11/24/2015**	**Health Equity**	**1030 · Cash- Checking**	
				1430 · Payroll Clearing A/C	$ (859.58)
					$ (859.58)
Check	**EFT111015-3**	**11/10/2015**	**Health Equity**	**1030 · Cash- Checking**	
				1430 · Payroll Clearing A/C	$ (559.58)
				7106 · Prof Serv - Accting & Payroll	$ (56.05)
					$ (615.63)

Check	**EFT111115-3**	**11/11/2015**	**Health Equity**	**1030 · Cash- Checking**		
				1430 · Payroll Clearing A/C	$	(250.00)
					$	(250.00)
Check	**ET112415-3**	**11/24/2015**	**CALPERS**	**1030 · Cash- Checking**		
				1430 · Payroll Clearing A/C	$	(3,110.39)
				1430 · Payroll Clearing A/C	$	(3,556.05)
					$	(6,666.44)
Check	**EFT111115-4**	**11/18/2015**	**CALPERS**	**1030 · Cash- Checking**		
				1430 · Payroll Clearing A/C	$	(7,448.00)
					$	(7,448.00)
Check	**ET112415-4**	**11/20/2015**	**ADP Payroll Fees**	**1030 · Cash- Checking**		
				7106 · Prof Serv - Accting & Payroll	$	(244.59)
					$	(244.59)
Check	**ACHRtn11271**	**11/27/2015**	**ACH Returns**	**1030 · Cash- Checking**		
				4013 · Returned Water Charges	$	(875.00)
					$	(875.00)
Bill Pmt -Check	**30115**	**11/11/2015**	**ACWA DUES**	**1030 · Cash- Checking**		
Bill		11/02/2015		1410 · Prepaid Expenses	$	(13,573.33)
					$	(13,573.33)
Bill Pmt -Check	**30116**	**11/11/2015**	**AIRGAS, LLC**	**1030 · Cash- Checking**		
Bill	9931282546	11/01/2015		6501 · M&R - Buildings & Grounds	$	(114.95)
					$	(114.95)
Bill Pmt -Check	**30117**	**11/11/2015**	**AT&T 60197**	**1030 · Cash- Checking**		
Bill	7223405	11/01/2015		7005 · Utilities - Telephones	$	(17.95)
Bill	7230800	11/01/2015		7005 · Utilities - Telephones	$	(1.10)
Bill	7241768	11/01/2015		7005 · Utilities - Telephones	$	(34.85)
					$	(53.90)
Bill Pmt -Check	**30118**	**11/11/2015**	**GRANITE ROCK, INC.**	**1030 · Cash- Checking**		
Bill	925132	11/01/2015		6405 · Meters & Service	$	(560.66)
					$	(560.66)

Bill Pmt -Check	**30119**	**11/11/2015**	**JAMES MARTA & COMPANY**	**1030 · Cash- Checking**		
Bill	9183	10/31/2015		7104 · Prof Serv - Annual FinanceAudit	$	(3,100.00)
					$	(3,100.00)
Bill Pmt -Check	**30120**	**11/11/2015**	**OFFICE DEPOT, INC.**	**1030 · Cash- Checking**		
Bill	802928422001	11/01/2015		6701 · Office Supplies	$	(161.03)
					$	(161.03)
Bill Pmt -Check	**30121**	**11/11/2015**	**OFFICE TEAM**	**1030 · Cash- Checking**		
Bill	44324539	11/04/2015		7110 · Prof Serv - Miscellaneous	$	(750.00)
					$	(750.00)
Bill Pmt -Check	**30122**	**11/11/2015**	**PG&E CFM/PPC DEPT**	**1030 · Cash- Checking**		
Bill	2454-4NOV15	11/04/2015		7003 · Utilities - Electric - Pumping	$	(25.81)
Bill	3667-2NOV15	11/04/2015		7003 · Utilities - Electric - Pumping	$	(60.73)
Bill	7816-1NOV15	11/04/2015		7003 · Utilities - Electric - Pumping	$	(237.87)
Bill	8936-0NOV15	11/05/2015		7003 · Utilities - Electric - Pumping	$	(3,959.49)
Bill	6556-8NOV15	11/05/2015		7003 · Utilities - Electric - Pumping	$	(78.74)
Bill	7951-5NOV15	11/05/2015		7003 · Utilities - Electric - Pumping	$	(149.77)
					$	(4,512.41)
Bill Pmt -Check	**30123**	**11/11/2015**	**RECOLOGY SAN MATEO**	**1030 · Cash- Checking**		
Bill		11/01/2015		6501 · M&R - Buildings & Grounds	$	(645.24)
					$	(645.24)
Bill Pmt -Check	**30124**	**11/11/2015**	**RUTH NORRIS**	**1030 · Cash- Checking**		
Bill		11/05/2015		6307 · Lawn-Be-Gone Rebates	$	(1,710.00)
					$	(1,710.00)
Bill Pmt -Check	**30125**	**11/18/2015**	**ACCELA, INC. #774375**	**1030 · Cash- Checking**		
Bill	2050	11/01/2015		1751 · FMS - Prof Svs CY	$	(28,752.50)
					$	(28,752.50)
Bill Pmt -Check	**30126**	**11/18/2015**	**ACWA- GROUP INS.**	**1030 · Cash- Checking**		
Bill	0379505	11/04/2015		1410 · Prepaid Expenses	$	(38,134.18)
					$	(38,134.18)

Bill Pmt -Check	**30127**	**11/18/2015**	**AMERICAN WATER WORKS ASSOCIATION**	**1030 · Cash- Checking**		
Bill		11/17/2015		1410 · Prepaid Expenses	$	(255.00)
Bill		11/17/2015		1410 · Prepaid Expenses	$	(255.00)
					$	(510.00)
Bill Pmt -Check	**30128**	**11/18/2015**	**AT&T 60197**	**1030 · Cash- Checking**		
Bill	7269757	11/10/2015		7005 · Utilities - Telephones	$	(17.98)
Bill	7269930	11/10/2015		7005 · Utilities - Telephones	$	(130.73)
					$	(148.71)
Bill Pmt -Check	**30129**	**11/18/2015**	**BRAVO PROMOTIONAL MARKETING, INC.**	**1030 · Cash- Checking**		
Bill	17607	11/12/2015		6303 · Public Outreach & Education	$	(1,233.62)
					$	(1,233.62)
Bill Pmt -Check	**30130**	**11/18/2015**	**C G UHLENBERG LLP**	**1030 · Cash- Checking**		
Bill		11/02/2015		7106 · Prof Serv - Accting & Payroll	$	(1,325.00)
					$	(1,325.00)
Bill Pmt -Check	**30131**	**11/18/2015**	**COMCAST**	**1030 · Cash- Checking**		
Bill		11/10/2015		7001 · Utilities - Internet/Cable	$	(94.02)
Bill		11/10/2015		7001 · Utilities - Internet/Cable	$	(94.02)
Bill		11/10/2015		7001 · Utilities - Internet/Cable	$	(94.02)
Bill		11/10/2015		7001 · Utilities - Internet/Cable	$	(80.71)
					$	(362.77)
Bill Pmt -Check	**30132**	**11/18/2015**	**CORNERSTONE**	**1030 · Cash- Checking**		
Bill	13138	11/01/2015		1741 · Dekoven - Prof Svs CY	$	(25,025.00)
					$	(25,025.00)
Bill Pmt -Check	**30133**	**11/18/2015**	**COUNTY OF SAN MATEO**	**1030 · Cash- Checking**		
Bill		11/16/2015		6802 · Gov't Fees & Licenses	$	(6,611.00)
					$	(6,611.00)
Bill Pmt -Check	**30134**	**11/18/2015**	**EEAP THE SAFETY PEOPLE, INC.**	**1030 · Cash- Checking**		
Bill	48389	11/05/2015		1410 · Prepaid Expenses	$	(480.00)
					$	(480.00)
Bill Pmt -Check	**30135**	**11/18/2015**	**ESRI INC**	**1030 · Cash- Checking**		
Bill	93054498	11/12/2015		1410 · Prepaid Expenses	$	(1,045.00)
					$	(1,045.00)

Bill Pmt -Check	**30136**	**11/18/2015**	**GRANITE ROCK, INC.**	**1030 · Cash- Checking**		
Bill	926642	11/07/2015		6405 · Meters & Service	$	(585.60)
					$	(585.60)
Bill Pmt -Check	**30137**	**11/18/2015**	**HACH COMPANY INC**	**1030 · Cash- Checking**		
Bill		11/06/2015		6401 · Water Quality	$	(1,459.98)
					$	(1,459.98)
Bill Pmt -Check	**30138**	**11/18/2015**	**JRocket Design77**	**1030 · Cash- Checking**		
Bill	2013	11/01/2015		7110 · Prof Serv - Miscellaneous	$	(2,623.73)
					$	(2,623.73)
Bill Pmt -Check	**30139**	**11/18/2015**	**NORTHERN SAFETY CO. INC.**	**1030 · Cash- Checking**		
Bill	901685745	11/06/2015		6408 · Employee Safety	$	(37.25)
					$	(37.25)
Bill Pmt -Check	**30140**	**11/18/2015**	**OFFICE TEAM**	**1030 · Cash- Checking**		
Bill	44385485	11/12/2015		7110 · Prof Serv - Miscellaneous	$	(971.00)
					$	(971.00)
Bill Pmt -Check	**30141**	**11/18/2015**	**PAKPOUR CONSULTING GROUP, INC**	**1030 · Cash- Checking**		
Bill		11/15/2015		7102 · Prof Serv - District Engineer	$	(500.00)
					$	(500.00)
Bill Pmt -Check	**30142**	**11/18/2015**	**PARS**	**1030 · Cash- Checking**		
Bill	32995	11/06/2015		7110 · Prof Serv - Miscellaneous	$	(300.00)
					$	(300.00)
Bill Pmt -Check	**30143**	**11/18/2015**	**PG&E CFM/PPC DEPT**	**1030 · Cash- Checking**		
Bill	9032-7NOV2015	11/12/2015		7003 · Utilities - Electric - Pumping	$	(10,292.59)
					$	(10,292.59)
Bill Pmt -Check	**30144**	**11/18/2015**	**PRECISE, INC.**	**1030 · Cash- Checking**		
Bill	15506	11/09/2015		7107 · Prof Serv - Customer Billing	$	(630.83)
					$	(630.83)
Bill Pmt -Check	**30145**	**11/18/2015**	**PUMP REPAIR SERVICE CO**	**1030 · Cash- Checking**		
Bill	037086	11/01/2015		6402 · Pumping	$	(4,963.00)
					$	(4,963.00)

Bill Pmt -Check	**30146**	**11/18/2015**	**PWWA**	**1030 · Cash- Checking**		
Bill		11/17/2015		1410 · Prepaid Expenses	$	(45.00)
					$	(45.00)
Bill Pmt -Check	**30147**	**11/18/2015**	**RICOH Philadelphia**	**1030 · Cash- Checking**		
Bill	47765258	11/07/2015		6705 · Printing/Printing Supplies	$	(472.93)
					$	(472.93)
Bill Pmt -Check	**30148**	**11/18/2015**	**RICOH USA, INC. Pasadena**	**1030 · Cash- Checking**		
Bill	5038706441	11/01/2015		6706 · Equipment Services/Maintenance	$	(1,382.50)
					$	(1,382.50)
Bill Pmt -Check	**30149**	**11/18/2015**	**TAMMY A. RUDOCK**	**1030 · Cash- Checking**		
Bill		11/16/2015		7205 · Meeting Expenses	$	(40.00)
Bill		11/16/2015		7204 · Employee Travel/Training	$	(33.49)
Bill		11/16/2015		6701 · Office Supplies	$	(188.75)
					$	(262.24)
Bill Pmt -Check	**30150**	**11/18/2015**	**GORDON MACPHERSON**	**1030 · Cash- Checking**		
Bill		11/13/2015		6308 · Rain Barrels Rebate	$	(175.98)
					$	(175.98)
Bill Pmt -Check	**30151**	**11/18/2015**	**HORST WEND**	**1030 · Cash- Checking**		
Bill		11/13/2015		6308 · Rain Barrels Rebate	$	(159.94)
					$	(159.94)
Bill Pmt -Check	**30152**	**11/18/2015**	**JOHN SCHEIBE**	**1030 · Cash- Checking**		
Bill		11/13/2015		6308 · Rain Barrels Rebate	$	(72.69)
					$	(72.69)
Bill Pmt -Check	**30153**	**11/18/2015**	**LAWRENCE AKVTAGAWA**	**1030 · Cash- Checking**		
Bill		11/13/2015		6308 · Rain Barrels Rebate	$	(79.99)
					$	(79.99)
Bill Pmt -Check	**30154**	**11/18/2015**	**MIRIAM SCHACH**	**1030 · Cash- Checking**		
Bill		11/13/2015		6308 · Rain Barrels Rebate	$	(89.97)
					$	(89.97)
Bill Pmt -Check	**30155**	**11/18/2015**	**ROSE KUME**	**1030 · Cash- Checking**		
Bill		11/13/2015		6308 · Rain Barrels Rebate	$	(200.00)
					$	(200.00)

Bill Pmt -Check	**30156**	**11/18/2015**	**SHIRLEY MCMAHON**	**1030 · Cash- Checking**		
Bill		11/13/2015		6308 · Rain Barrels Rebate	$	(87.99)
					$	(87.99)
Bill Pmt -Check	**30157**	**11/18/2015**	**DEBRA STROTHER**	**1030 · Cash- Checking**		
Bill		11/13/2015		6305 · HET (High Efficiency Toilet)	$	(300.00)
					$	(300.00)
Bill Pmt -Check	**30158**	**11/18/2015**	**DENNIS LUU**	**1030 · Cash- Checking**		
Bill		11/13/2015		6305 · HET (High Efficiency Toilet)	$	(100.00)
					$	(100.00)
Bill Pmt -Check	**30159**	**11/18/2015**	**ELIZABETH NAJERA-KANG**	**1030 · Cash- Checking**		
Bill		11/13/2015		6305 · HET (High Efficiency Toilet)	$	(200.00)
					$	(200.00)
Bill Pmt -Check	**30160**	**11/18/2015**	**GENE SNYDER**	**1030 · Cash- Checking**		
Bill		11/13/2015		6305 · HET (High Efficiency Toilet)	$	(200.00)
					$	(200.00)
Bill Pmt -Check	**30161**	**11/18/2015**	**JACK HAMILTON**	**1030 · Cash- Checking**		
Bill		11/13/2015		6305 · HET (High Efficiency Toilet)	$	(600.00)
					$	(600.00)
Bill Pmt -Check	**30162**	**11/18/2015**	**JEREMY HUI**	**1030 · Cash- Checking**		
Bill		11/13/2015		6305 · HET (High Efficiency Toilet)	$	(100.00)
					$	(100.00)
Bill Pmt -Check	**30163**	**11/18/2015**	**JU-CHING LIN**	**1030 · Cash- Checking**		
Bill		11/13/2015		6305 · HET (High Efficiency Toilet)	$	(200.00)
					$	(200.00)
Bill Pmt -Check	**30164**	**11/18/2015**	**KWANG LIU**	**1030 · Cash- Checking**		
Bill		11/13/2015		6305 · HET (High Efficiency Toilet)	$	(100.00)
					$	(100.00)
Bill Pmt -Check	**30165**	**11/18/2015**	**MIRIAM SCHACH**	**1030 · Cash- Checking**		
Bill		11/13/2015		6305 · HET (High Efficiency Toilet)	$	(100.00)
					$	(100.00)

Bill Pmt -Check	**30166**	**11/18/2015**	**PATRICIA JEWETT**	**1030 · Cash- Checking**		
Bill		11/13/2015		6305 · HET (High Efficiency Toilet)	$	(100.00)
					$	(100.00)
Bill Pmt -Check	**30167**	**11/18/2015**	**ROBERT SAWAYA**	**1030 · Cash- Checking**		
Bill		11/13/2015		6305 · HET (High Efficiency Toilet)	$	(188.00)
					$	(188.00)
Bill Pmt -Check	**30168**	**11/18/2015**	**WHITLEY PROPERTY MANAGEMENT**	**1030 · Cash- Checking**		
Bill		11/13/2015		6305 · HET (High Efficiency Toilet)	$	(600.00)
					$	(600.00)
Bill Pmt -Check	**30169**	**11/18/2015**	**CONSTANCE McCREADIE**	**1030 · Cash- Checking**		
Bill		11/13/2015		6307 · Lawn-Be-Gone Rebates	$	(368.99)
					$	(368.99)
Bill Pmt -Check	**30170**	**11/23/2015**	**AT&T 60197**	**1030 · Cash- Checking**		
Bill	7344106	11/17/2015	AT&T 60197	2100 · Accounts Payable	$	-
Bill	7344104	11/17/2015		7005 · Utilities - Telephones	$	(73.94)
					$	(73.94)
Bill Pmt -Check	**30171**	**11/23/2015**	**CARLMONT HARDWARE**	**1030 · Cash- Checking**		
Bill	858533	11/05/2015		6405 · Meters & Service	$	(98.84)
					$	(98.84)
Bill Pmt -Check	**30172**	**11/23/2015**	**CAROL SUNDERMEYER**	**1030 · Cash- Checking**		
Bill		11/23/2015		6307 · Lawn-Be-Gone Rebates	$	(1,350.00)
					$	(1,350.00)
Bill Pmt -Check	**30173**	**11/23/2015**	**CARQUEST AUTO PARTS**	**1030 · Cash- Checking**		
Bill	8292-450858	11/12/2015		6503 · M&R - Vehicle & Large Equip	$	(22.87)
					$	(22.87)
Bill Pmt -Check	**30174**	**11/23/2015**	**COMCAST**	**1030 · Cash- Checking**		
Bill		11/14/2015		7001 · Utilities - Internet/Cable	$	(213.78)
					$	(213.78)
Bill Pmt -Check	**30175**	**11/23/2015**	**CRWA**	**1030 · Cash- Checking**		
			CRWA	2100 · Accounts Payable	$	(350.00)
					$	(350.00)

Bill Pmt -Check	**30176**	**11/23/2015**	**GOLDEN STATE FLOW MEASUREMENT INC**	**1030 · Cash- Checking**		
Bill	1-049584	11/16/2015		1738 · Meter Chg Out - Parts	$	(5,281.05)
					$	(5,281.05)
Bill Pmt -Check	**30177**	**11/23/2015**	**GRANITE ROCK, INC.**	**1030 · Cash- Checking**		
Bill	927992	11/14/2015		6405 · Meters & Service	$	(203.45)
					$	(203.45)
Bill Pmt -Check	**30178**	**11/23/2015**	**HOME DEPOT**	**1030 · Cash- Checking**		
Bill	5264181	11/01/2015		6501 · M&R - Buildings & Grounds	$	(7.50)
Bill	5121806	11/01/2015		6501 · M&R - Buildings & Grounds	$	(73.17)
Bill	7235168	11/03/2015		6501 · M&R - Buildings & Grounds	$	(22.72)
Bill	7590204	11/03/2015		6502 · M&R - Equipment & Tools	$	(107.77)
Bill	4162648	11/16/2015		6501 · M&R - Buildings & Grounds	$	(4.34)
				6405 · Meters & Service	$	(63.87)
				6502 · M&R - Equipment & Tools	$	(153.11)
Bill	0302282	11/20/2015		6406 · Fire Hydrants	$	(24.00)
					$	(456.48)
Bill Pmt -Check	**30179**	**11/23/2015**	**Laura Ravella**	**1030 · Cash- Checking**		
Bill	674631330	11/18/2015		6701 · Office Supplies	$	(13.98)
					$	(13.98)
Bill Pmt -Check	**30180**	**11/23/2015**	**LINCOLN LIFE**	**1030 · Cash- Checking**		
Bill		11/15/2015		1430 · Payroll Clearing A/C	$	(175.00)
					$	(175.00)
Bill Pmt -Check	**30181**	**11/23/2015**	**LYNGSO GARDEN MATERIAL INC**	**1030 · Cash- Checking**		
Bill	907113	11/20/2015		6406 · Fire Hydrants	$	(16.35)
					$	(16.35)
Bill Pmt -Check	**30182**	**11/23/2015**	**MATCO TOOLS**	**1030 · Cash- Checking**		
Bill	237165	11/01/2015		6502 · M&R - Equipment & Tools	$	(189.71)
					$	(189.71)
Bill Pmt -Check	**30183**	**11/23/2015**	**OFFICE DEPOT, INC.**	**1030 · Cash- Checking**		
Bill	805924791001	11/12/2015		6701 · Office Supplies	$	(58.28)
Bill	806609302001	11/18/2015		6701 · Office Supplies	$	(757.96)
Bill	805924791002	11/18/2015		6701 · Office Supplies	$	(74.51)
					$	(890.75)

Bill Pmt -Check	**30184**	**11/23/2015**	**OFFICE TEAM**	**1030 · Cash- Checking**		
Bill	444433077	11/18/2015		7110 · Prof Serv - Miscellaneous	$	(537.50)
					$	(537.50)
Bill Pmt -Check	**30185**	**11/23/2015**	**OREILLY AUTO PARTS**	**1030 · Cash- Checking**		
Bill	3535-421600	11/06/2015		6503 · M&R - Vehicle & Large Equip	$	(16.94)
Bill	3535-421644	11/06/2015		6502 · M&R - Equipment & Tools	$	(28.30)
Bill	3535-421581	11/06/2015		6502 · M&R - Equipment & Tools	$	(104.61)
					$	(149.85)
Bill Pmt -Check	**30186**	**11/23/2015**	**PENINSULA BUILDING MATERIALS**	**1030 · Cash- Checking**		
Bill	303635	11/01/2015		6404 · Mains/Distribution	$	(766.27)
					$	(766.27)
Bill Pmt -Check	**30187**	**11/23/2015**	**PG&E CFM/PPC DEPT**	**1030 · Cash- Checking**		
Bill	4665-4NOV2015	11/13/2015		7003 · Utilities - Electric - Pumping	$	(599.58)
				7004 · Utilities - Electric-Bldgs&Grnd	$	(1,841.90)
					$	(2,441.48)
Bill Pmt -Check	**30188**	**11/23/2015**	**PRECISE, INC.**	**1030 · Cash- Checking**		
Bill	15595	11/12/2015		7107 · Prof Serv - Customer Billing	$	(628.64)
Bill	PI112315	11/23/2015		1410 · Prepaid Expenses	$	(7,500.00)
					$	(8,128.64)
Bill Pmt -Check	**30189**	**11/23/2015**	**PROFORMA**	**1030 · Cash- Checking**		
Bill	9063702378	11/01/2015		6303 · Public Outreach & Education	$	(1,473.69)
					$	(1,473.69)
Bill Pmt -Check	**30190**	**11/23/2015**	**ROBERTS & BRUNE CO. INC.**	**1030 · Cash- Checking**		
Bill	S1521447.001	11/01/2015		6404 · Mains/Distribution	$	(1,175.65)
Bill	S1526650.001	11/19/2015		6404 · Mains/Distribution	$	(534.72)
					$	(1,710.37)
Bill Pmt -Check	**30191**	**11/23/2015**	**SAN FRANCISCO WATER DEPT**	**1030 · Cash- Checking**		
Bill		11/17/2015		6101 · SFPUC Treated Water	$	(339,011.25)
				6102 · BAWSCA (Debt Service Surcharge)	$	(38,438.00)
				6104 · SFPUC Water Service Charge	$	(6,623.00)
					$	(384,072.25)

Bill Pmt -Check	**30192**	**11/23/2015**	**SANDIE ARNOTT**	**1030 · Cash- Checking**		
Bill	2015-2016PRTax	10/15/2015		2050 · Accrued Expenses	$	(810.54)
				1410 · Prepaid Expenses	$	(2,449.93)
					$	(3,260.47)
Bill Pmt -Check	**30193**	**11/23/2015**	**STANDARD INSURANCE COMPANY**	**1030 · Cash- Checking**		
Bill		11/23/2015		1410 · Prepaid Expenses	$	(780.01)
					$	(780.01)
Bill Pmt -Check	**30194**	**11/23/2015**	**UNLIMITED TOOL & REPAIR & FAB**	**1030 · Cash- Checking**		
Bill	16564	11/12/2015		6502 · M&R - Equipment & Tools	$	(493.79)
					$	(493.79)
Bill Pmt -Check	**30195**	**11/23/2015**	**UPS**	**1030 · Cash- Checking**		
Bill	0000546F3E465	11/14/2015		6704 · Postage	$	(29.43)
					$	(29.43)
Bill Pmt -Check	**30196**	**11/23/2015**	**VALLEY OIL COMPANY**	**1030 · Cash- Checking**		
Bill	814016	11/01/2015		6504 · M&R - Fuel	$	(671.70)
Bill	815354	11/12/2015		6504 · M&R - Fuel	$	(458.74)
					$	(1,130.44)
Bill Pmt -Check	**30197**	**12/01/2015**	**CINTAS CORPORATION**	**1030 · Cash- Checking**		
Bill	464509877	11/01/2015		6052 · Uniforms	$	(346.13)
Bill	464512711	11/01/2015		6052 · Uniforms	$	(338.55)
Bill	464515545	11/01/2015		6052 · Uniforms	$	(338.55)
Bill	464518352	11/01/2015		6052 · Uniforms	$	(338.55)
Bill	464521167	11/01/2015		6052 · Uniforms	$	(340.80)
					$	(1,702.58)
Bill Pmt -Check	**30198**	**12/01/2015**	**CONTROLLER'S OFFICE**	**1030 · Cash- Checking**		
Bill	ACHPmt113015	11/30/2015		6703 · Bank Service Fees	$	(1.00)
					$	(1.00)
Bill Pmt -Check	**30199**	**12/01/2015**	**GRANITE ROCK, INC.**	**1030 · Cash- Checking**		
Bill	929385	11/20/2015		6406 · Fire Hydrants	$	(351.51)
					$	(351.51)

Bill Pmt -Check	**30200**	**12/01/2015**	**HOME DEPOT**	**1030 · Cash- Checking**		
Bill	6232045	11/24/2015		6501 · M&R - Buildings & Grounds	$	(34.31)
Bill	5042368	11/24/2015		6501 · M&R - Buildings & Grounds	$	(10.83)
					$	(45.14)
Bill Pmt -Check	**30201**	**12/01/2015**	**LINCOLN LIFE**	**1030 · Cash- Checking**		
Bill		11/30/2015		1430 · Payroll Clearing A/C	$	(175.00)
					$	(175.00)
Bill Pmt -Check	**30202**	**12/01/2015**	**LYNGSO GARDEN MATERIAL INC**	**1030 · Cash- Checking**		
Bill	907178	11/23/2015		6404 · Mains/Distribution	$	(157.29)
					$	(157.29)
Bill Pmt -Check	**30203**	**12/01/2015**	**MHN**	**1030 · Cash- Checking**		
Bill	3200074273	11/16/2015		1410 · Prepaid Expenses	$	(45.54)
					$	(45.54)
Bill Pmt -Check	**30204**	**12/01/2015**	**OFFICE TEAM**	**1030 · Cash- Checking**		
Bill	44491639	11/25/2015		7110 · Prof Serv - Miscellaneous	$	(977.25)
					$	(977.25)
Bill Pmt -Check	**30205**	**12/01/2015**	**RICOH Philadelphia**	**1030 · Cash- Checking**		
Bill	47981351	11/21/2015		6705 · Printing/Printing Supplies	$	(133.81)
					$	(133.81)
Bill Pmt -Check	**30206**	**12/01/2015**	**SHRM**	**1030 · Cash- Checking**		
Bill	9006404205	11/24/2015		6801 · Dues & Publications	$	(190.00)
					$	(190.00)
Bill Pmt -Check	**30207**	**12/01/2015**	**STEPFORD BUSINESS, INC.**	**1030 · Cash- Checking**		
Bill	1502158	11/20/2015		1410 · Prepaid Expenses	$	(1,400.00)
					$	(1,400.00)
Bill Pmt -Check	**30208**	**12/01/2015**	**TAP MASTER, INC**	**1030 · Cash- Checking**		
Bill	1115-117	11/17/2015		6406 · Fire Hydrants	$	(625.00)
					$	(625.00)
Bill Pmt -Check	**30209**	**12/01/2015**	**UNITED RENTAL**	**1030 · Cash- Checking**		
Bill	133160786-001	11/23/2015		6406 · Fire Hydrants	$	(1,713.91)
					$	(1,713.91)

Bill Pmt -Check	**30210**	**12/01/2015**	**VERIZON WIRELESS**	**1030 · Cash- Checking**		
Bill		11/15/2015		7002 · Utilities - Cell Telephone	$	(812.95)
					$	(812.95)
Bill Pmt -Check	**30211**	**12/01/2015**	**MATCO TOOLS**	**1030 · Cash- Checking**		
Bill	234909	11/01/2015		6502 · M&R - Equipment & Tools	$	(29.56)
					$	(29.56)
Bill Pmt -Check	**30212**	**12/01/2015**	**MATCO TOOLS**	**1030 · Cash- Checking**		
Bill	219040	11/01/2015		6502 · M&R - Equipment & Tools	$	(31.48)
Bill	222007-1	11/01/2015		6502 · M&R - Equipment & Tools	$	(328.40)
Bill	221707	11/18/2015		6502 · M&R - Equipment & Tools	$	(41.61)
Bill	238550	11/24/2015		6502 · M&R - Equipment & Tools	$	(109.57)
					$	(511.06)
Bill Pmt -Check	**30213**	**12/01/2015**	**PETTY CASH**	**1030 · Cash- Checking**		
Bill	Various	11/30/2015		7204 · Employee Travel/Training	$	(2.50)
				6501 · M&R - Buildings & Grounds	$	(118.47)
				6302 · School Conservation Program	$	(88.44)
				6503 · M&R - Vehicle & Large Equip	$	(6.01)
				6303 · Public Outreach & Education	$	(54.00)
				6050 · Employee Service Recognition	$	(32.00)
				6404 · Mains/Distribution	$	(17.25)
				6401 · Water Quality	$	(21.35)
					$	(340.02)
Check	**55093**	**11/05/2015**	**ROBERTA DETATA**	**1030 · Cash- Checking**		
				4012 · Water Refunds	$	(10.33)
					$	(10.33)
Check	**55094**	**11/05/2015**	**KEVIN SCOLES**	**1030 · Cash- Checking**		
				4012 · Water Refunds	$	(27.00)
					$	(27.00)
Check	**55095**	**11/05/2015**	**PRITESH SHAH**	**1030 · Cash- Checking**		
				4012 · Water Refunds	$	(8.87)
					$	(8.87)

Check	**55096**	**11/05/2015**	**MICHAEL ALFORD**	**1030 · Cash- Checking**		
				4012 · Water Refunds	$	(3.00)
					$	(3.00)
Check	**55097**	**11/05/2015**	**MARGARITA ANIKITCHEVA**	**1030 · Cash- Checking**		
				4012 · Water Refunds	$	(25.00)
					$	(25.00)
Check	**55098**	**11/05/2015**	**JOSHUA SAMON**	**1030 · Cash- Checking**		
				4012 · Water Refunds	$	(117.43)
					$	(117.43)
Check	**55099**	**11/05/2015**	**LISA KOHARA**	**1030 · Cash- Checking**		
				4012 · Water Refunds	$	(22.00)
					$	(22.00)
Check	**55100**	**11/05/2015**	**INTERSTATE GRADING & PAVING**	**1030 · Cash- Checking**		
				4012 · Water Refunds	$	(668.00)
					$	(668.00)
Check	**55101**	**11/05/2015**	**PACIFIC WEST COMM**	**1030 · Cash- Checking**		
				4012 · Water Refunds	$	(637.00)
					$	(637.00)
Check	**55102**	**11/05/2015**	**SHORELINE ASSESTS GROUP, LLC**	**1030 · Cash- Checking**		
				4012 · Water Refunds	$	(936.00)
					$	(936.00)
Check	**EFT112315**	**11/23/2015**	**CALPERS**	**1030 · Cash- Checking**		
				1430 · Payroll Clearing A/C	$	(1,103.86)
				1430 · Payroll Clearing A/C	$	(1,262.03)
					$	(2,365.89)
Check	**EFT112316**	**11/23/2015**	**ICMA contributions**	**1030 · Cash- Checking**		
				1430 · Payroll Clearing A/C	$	(887.98)
					$	(887.98)
Check	**EFT112317**	**11/23/2015**	**Health Equity**	**1030 · Cash- Checking**		
				1430 · Payroll Clearing A/C	$	(250.00)
					$	(250.00)
			TOTAL:		**$**	**619,375.77**

MID-PENINSULA WATER DISTRICT

AGENDA ITEM NO. 5.C.

DATE: December 16, 2015

TO: Board of Directors

FROM: Tammy Rudock, General Manager

SUBJECT: APPROVE PROFESSIONAL SERVICES AGREEMENT IN THE AMOUNT OF $38,860 WITH MANAGEWATER CONSULTING, INC., FOR THE 2015 URBAN WATER MANAGEMENT PLAN WITH AN OPTION NOT TO EXCEED $10,000 TO REVISE MPWD'S WATER SHORTAGE CONTINGENCY PLAN

RECOMMENDATION

Approve the Professional Services Agreement in the amount of $38,860 with ManageWater Consulting, Inc., for the 2015 Urban Water Management Plan (UWMP), with an option not to exceed $10,000 to revise the MPWD's Water Shortage Contingency Plan (WSCP).

FISCAL IMPACT

This project is budgeted at $60,000 within the MPWD FY 2015/2016 Operating Budget. The attached contract with ManageWater Consulting, Inc. is for $38,860, plus staff is requesting an option not to exceed $10,000 to negotiate services for a revised WSCP, which equals a potential project total of $48,860.

BACKGROUND

The California Water Code (CWC) Section 10620(a) requires an urban water supplier to prepare and adopt an UWMP consistent with CWC Section 10640. All urban water suppliers, either publicly or privately owned, serving municipal water to 3,000 or more customers or supplying more than 3,000AF annually are required to prepare an UWMP. The UWMP is required for an urban water supplier to be eligible for California Department of Water Resources (CA DWR) state grants, loans, and drought assistance. **The UWMP must be adopted and submitted to the DWR by July 1, 2016.**

An electronic version of the MPWD's 2010 UWMP is located here: http://midpeninsulawater.org/images/files/MPWD_FinalUWMP_2010.pdf

Services for the 2015 UWMP generally include data review and analysis, development of demand projection, analysis of demand management measures, population and demographic analysis, system supplies, water supply reliability, water shortage contingency planning, climate change, and other factors as identified by the Urban Water Management Planning Act.

DISCUSSION

As previously reported, staff prepared a Request for Proposals (RFP) for consultants interested in developing the MPWD's 2015 UWMP. The RFP was distributed during the first week of November to a total of seven (7) consulting firms. The submittal deadline was November 30, 2015, and the MPWD received only one response from ManageWater Consulting, Inc., which is attached for reference, and will serve as Exhibit A to the Professional Services Agreement.

Staff reviewed the ManageWater Consulting, Inc. proposal and it responsively meets the requirements of the MPWD's RFP, and the fee breakdown appears reasonable for the UWMP tasks.

Their fee proposal provided for a review and basic update of the MPWD's existing WSCP and staff believes that the WSCP needs to be revised so that it is manageable and more transparent, including triggers for implementation. Staff has requested a cost proposal from ManageWater Consulting, Inc. for the option to add the task of revising the MPWD's WSCP within the 2015 UWMP.

Marty Laporte of ManageWater Consulting, Inc. will lead the project consulting team, which includes sub-consultant services by Maddaus Water Management, Inc. I will lead the project for the MPWD. Jeanette Kalabolas, Brent Chester, and Rene Ramirez will also provide staff support on the MPWD's team.

Pending contract approval, a project kickoff meeting is tentatively scheduled for Friday, December 18, 2015.

Attachment: Professional Services Agreement between MPWD and ManageWater Consulting, Inc.
ManageWater Consulting, Inc. Proposal dated November 30, 2015

BOARD ACTION: APPROVED:_____ DENIED:_____ POSTPONED:_____ STAFF DIRECTION:_____

UNANIMOUS_____ LINVILL_____ ZUCCA_____ WARDEN_____ STUEBING_____ VELLA_____

PROFESSIONAL SERVICES AGREEMENT

THIS AGREEMENT is made as of this 16th day of December 2015, by and between MID-PENINSULA WATER DISTRICT, a public agency ("DISTRICT") and MANAGEWATER CONSULTING, INC., a California corporation ("CONSULTANT").

WHEREAS, the DISTRICT desires to obtain professional services in conjunction with the 2015 Urban Water Management Plan Project; and

WHEREAS, the CONSULTANT is ready, willing and able to furnish such services and has submitted a Proposal dated November 30, 2015 which is attached hereto and incorporated herein as Exhibit A.

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. PROVISION OF SERVICES

CONSULTANT agrees to provide professional services to DISTRICT in accordance with the terms and conditions of this Agreement. In the performance of its Services, CONSULTANT represents that it has and will exercise that degree of professional care, skill, efficiency and judgment ordinarily employed by consultants providing similar services. CONSULTANT further represents and warrants that it holds currently in effect all licenses, registrations, and certifications in good standing that may be required under applicable law or regulations to perform these services and agrees to retain such licenses, registrations, and certifications in active status throughout the duration of this engagement.

2. SCOPE OF WORK

The scope of CONSULTANT's work shall be as set forth in Exhibit A. Otherwise, the terms of this Agreement shall control over any contrary provisions of Exhibit A.

3. TERM

This Agreement will commence upon its Effective Date and shall continue until the services set forth in Section 2 are successfully completed, as determined by the DISTRICT. It is understood that the term of this Agreement is subject to the DISTRICT's right to terminate the Agreement in accordance with Section 13 of this Agreement.

4. CONTRACT AMOUNT

CONSULTANT shall perform all work set forth in Section 2 of this Agreement for a total sum not to exceed $38,860, including all labor, materials, taxes, insurance, subcontractor / subconsultant costs, overhead, profit, and all other costs and expenses incurred by CONSULTANT.

5. MANNER OF PAYMENT

CONSULTANT shall submit monthly invoices as CONSULTANT complete work, and the invoices shall describe the work completed during the billing period, which consultant team member performed the services, their applicable hourly rate, and all out-of-pocket costs and subcontractor/subconsultant payments, if any. The DISTRICT shall review and approve the invoices and shall pay approved invoices within thirty (30) days of DISTRICT's approval.

All invoices should be sent to: Mid-Peninsula Water District
3 Dairy Lane
P.O. Box 129
Belmont, CA 94002
ATTENTION: Tammy Rudock, General Manager

6. CONSULTANT'S KEY PERSONNEL

It is understood and agreed by the parties that at all times during the term of this Agreement that Marty Laporte, Principal, shall serve as the primary project contact of CONSULTANT to undertake, render and oversee all of the services under this Agreement.

7. DISTRICT REPRESENTATIVE

Except when approval of other action is required to be given or taken by the Board of Directors of the DISTRICT, the General Manager of the DISTRICT, or such person or persons as the General Manager may designate in writing from time to time, shall represent and act for the DISTRICT.

8. CONSULTANT'S STATUS

Neither the CONSULTANT nor any party contracting with the CONSULTANT shall be deemed to be an agent or employee of the DISTRICT. CONSULTANT is and shall be an independent contractor and the legal relationship of any person performing services for the CONSULTANT shall be one solely between said parties.

9. OWNERSHIP OF WORK

A. All reports, designs, drawings, plans, specifications, schedules, and other materials prepared by CONSULTANT under this Agreement ("Work Product") shall be the property of DISTRICT.

B. CONSULTANT assigns to DISTRICT all right, title, and interest in and to the Work Product, including ownership of the entire copyright in the Work Product and any causes of action existing or arising in connection with the copyright to said Work Product. DISTRICT shall be entitled to access to and copies of these materials as they are being developed. Any such materials in the hands of CONSULTANT or in the hands of any subcontractor upon completion or termination of services hereunder shall be immediately delivered to DISTRICT. If any property of the DISTRICT is lost, damaged or destroyed before final delivery to the DISTRICT, the CONSULTANT shall replace it at its own expense and the

CONSULTANT hereby assumes all risks of loss, damage or destruction of or to such materials. The CONSULTANT may retain a copy of all material produced under this agreement for its use in its general business activities.

10. CHANGES

The DISTRICT may, at any time, by written order, make changes within the scope of work and Services described in this Agreement. If such changes cause an increase in the budgeted cost of or the time required for performance of the agreed upon work, an equitable adjustment as mutually agreed shall be made in the limit on compensation as set forth in Section 4 or in the time of required performance as set forth in Section 3, or both. In the event that CONSULTANT encounters any unanticipated conditions or contingencies that may affect the scope of work or Services and result in an adjustment in the amount of compensation specified herein, CONSULTANT shall so advise the DISTRICT immediately upon notice of such condition or contingency. The written notice shall explain the circumstances giving rise to the unforeseen condition or contingency and shall set forth the proposed adjustment in compensation. Such notice shall be given the DISTRICT prior to the time that CONSULTANT performs work or services related to the proposed adjustment in compensation. Any and all pertinent changes shall be expressed in a written supplement to this Agreement prior to implementation of such changes.

11. RESPONSIBILITY; INDEMNIFICATION

CONSULTANT agrees to indemnify, defend and hold harmless the DISTRICT, and its directors, agents, and employees from and against all claims, losses, damages and liabilities (including reasonable attorneys fees) arising out of any injury to persons or property that may occur, or that may be alleged to have occurred, in the course of the performance of the Agreement to the extent caused by CONSULTANT's recklessness or willful misconduct; or by CONSULTANT's negligent provision or omission of services contemplated by this Agreement.

Irrespective of any language to the contrary in this Agreement or under applicable law, CONSULTANT shall have no duty to provide or fund up-front defense costs of DISTRICT against unproven claims or allegations, but shall reimburse those reasonable attorneys' fees, expert fees and all other costs and fees incurred in any judicial proceeding, litigation, arbitration, mediation or other negotiated settlement incurred by DISTRICT that are caused by the negligence, recklessness or willful misconduct of CONSULTANT, its employees, agents and subconsultants (collectively, "Defense Costs"). However, CONSULTANT shall provide their immediate cooperation to the DISTRICT, at no additional cost, in defending such claims. Moreover, CONSULTANTS' responsibility for the DISTRICT's defense costs shall be limited to the proportion of CONSULTANT's responsibility for the underlying injury as determined in any judicial proceeding, litigation, arbitration, mediation, or other negotiated settlement which addressed the CONSULTANT's responsibility for the underlying injury. In the event that it is determined that the losses, injuries or damages claimed against the DISTRICT did not arise out of, pertain to, or relate to CONSULTANT's negligence, recklessness or willful misconduct, CONSULTANT shall not be responsible for any portion of the DISTRICT's defense costs. This indemnity shall survive the termination of this Agreement.

12. INSURANCE

A. Workers' Compensation: CONSULTANT shall procure and maintain at all times during the performance of such work Worker's Compensation Insurance in conformance with the laws of the State of California and Federal laws where applicable. Employers' Liability Insurance shall not be less than One Million Dollars ($1,000,000) per accident or disease. Prior to commencement of work hereunder, CONSULTANT shall deliver to DISTRICT a Certificate of Insurance which shall stipulate that 30 days advance written notice of cancellation, shall be given to DISTRICT.

B. Bodily Injury, Death and Property Damage Liability Insurance: CONSULTANT shall also procure and maintain at all times during the performance of this Agreement General Liability Insurance (including automobile operation) covering CONSULTANT and DISTRICT for liability arising out of the operations of CONSULTANT and any subcontractors. The policy(ies) shall include coverage for all vehicles, licensed or unlicensed, on or off DISTRICT's premises, used by or on behalf of CONSULTANTS in the performance of work under this Agreement. The policy(ies) shall be subject to a general liability limit for each occurrence of One Million Dollars ($1,000,000) naming as an additional insured, in connection with CONSULTANTS' activities, the DISTRICT, and its directors, officers, employees and agents, and a vehicle liability limit of Five Hundred Thousand ($500,000). The Insurer(s) shall agree that its policy(ies) is Primary Insurance and that it shall be liable for the full amount of any loss up to and including the total limit of liability without right of contribution from any other insurance covering the DISTRICT.

Inclusion of the DISTRICT as additional insured shall not in any way affect its rights as respects to any claim, demand, suit or judgment made, brought or recovered against CONSULTANT. Said policy shall protect CONSULTANT and DISTRICT in the same manner as though a separate policy had been issued to each; but nothing in said policy shall operate to increase the Insurer's liability as set forth in the policy beyond the amount or amounts shown or to which the Insurer would have been liable if only one interest had been named as an insured.

Prior to commencement of work hereunder, CONSULTANT shall deliver to DISTRICT a Certificate of Insurance which shall indicate compliance with the insurance requirements of this paragraph and shall stipulate that 30 days advance written notice of cancellation, shall be given to DISTRICT.

C. Professional Liability Insurance: CONSULTANS shall also maintain Professional Liability Insurance covering CONSULTANT's performance under this Agreement with a limit of liability of One Million Dollars ($1,000,000) per claim and in annual aggregate. Such Insurance shall be renewed annually. Prior to commencing work under this Agreement, CONSULTANT shall furnish to DISTRICT a Certificate of Insurance, or certified copy of the Insurance policy if requested, indicating compliance with requirements of this paragraph. Such certificate or policy shall further stipulate that 30 days advance written notice of cancellation, shall be given to DISTRICT.

13. TERMINATION

DISTRICT shall have the right to terminate this Agreement upon thirty (30) days written notice to the CONSULTANT. Upon receipt of such notice, the CONSULTANT shall not commit itself to any further expenditure of time or resources.

If the Agreement is terminated for any reason other than breach of a material term by CONSULTANT, the DISTRICT shall pay to CONSULTANT all sums actually due and owing from DISTRICT for all services performed and all expenses incurred up to the day written notice of termination is given, plus any costs reasonably and necessarily incurred by CONSULTANT to effect such suspension or termination.

If CONSULTANT breaches a material term of this Agreement and fails to remedy the breach within ten (10) days after the DISTRICT notifies the CONSULTANT of the breach, the Agreement may be terminated immediately and the DISTRICT shall in such event not thereafter pay or allow to the CONSULTANT any compensation for any labor, supplies or materials furnished under this Agreement; and the DISTRICT may proceed to complete this Agreement by other means, and the CONSULTANT shall be liable to the DISTRICT for all loss or damage which it may suffer on account of the CONSULTANT's breach of this Agreement.

14. NOTICES

All communications relating to the day to day activities of the project shall be exchanged between the DISTRICT's General Manager, or his designee, and the CONSULTANT's Project Manager.

All other notices and communications deemed by either party to be necessary or desirable to be given to the other party, except for confidential reports described in Section 6 of this Agreement, may be given by personal delivery to the representative of the parties or by mailing the same postage prepaid, addressed as follows:

If to the DISTRICT:
Mid-Peninsula Water District
3 Dairy Lane
P.O. Box 129
Belmont, CA 94002
ATTENTION: Tammy Rudock, General Manager

If to the CONSULTANT:
ManageWater Consulting, Inc.
430 Nimitz Avenue
Redwood City, CA 94061
ATTENTION: Marty Laporte

The address to which mailings may be made may be changed from time to time by notice mailed as described above. Any notice given by mail shall be deemed given on the day after that on which it is deposited in the United States Mail as provided above.

15. EQUAL EMPLOYMENT OPPORTUNITY

In connection with the performance of this Agreement the CONSULTANT shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, gender identity, disability or national origin. The CONSULTANT shall take affirmative actions to insure that applicants are employed, and that employees are treated during their employment, without regard to their race, religion, color, sex, disability or national origin. Such actions shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. CONSULTANT further agrees to include a similar provision in all subcontracts, except subcontracts for standard commercial supplies or raw materials.

16. RECORDS

During the term of this Agreement, CONSULTANT shall permit representatives of the DISTRICT to have access to, examine and make copies, at the DISTRICT's expense, of its books, records and documents relating to this Agreement at all reasonable times.

17. DISTRICT WARRANTIES

The DISTRICT makes no warranties, representations or agreements, either express or implied, beyond such as are explicitly stated in this Agreement.

18. RELEASE OF INFORMATION

CONSULTANT shall not release any reports, information or promotional materials prepared in connection with this Agreement without the approval of the DISTRICT's General Manager.

19. USE OF SUBCONTRACTORS

CONSULTANT shall subcontract services with Maddaus Water Management, Inc., for this project, but will not subcontract any other services to be performed by it under this Agreement without the prior written approval of the DISTRICT, except for service firms engaged in drawing, reproduction, typing and printing. CONSULTANT shall be solely responsible for reimbursing any subcontractors and the DISTRICT shall have no obligation to them.

20. ASSIGNMENT

CONSULTANT shall not assign any of the rights nor transfer any of its obligations under this Agreement without the prior written consent of the DISTRICT.

21. ATTORNEY'S COSTS

If any legal proceeding should be instituted by either of the parties hereto to enforce the terms of this Agreement or to determine the rights of the parties thereunder, the prevailing party in said proceeding shall recover, in addition to all court costs, reasonable attorney's fees.

22. APPLICABLE LAW

This Agreement, its interpretation and all work performed thereunder, shall be governed by the laws of the State of California.

23. BINDING ON SUCCESSORS

All of the terms, provisions and conditions of this Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors, assigns and legal representatives. CONSULTANT shall not assign this Agreement without the prior express written approval of the DISTRICT.

24. WAIVER

Any waiver of any breach or covenant of this Agreement must be in a writing executed by a duly authorized representative of the party waiving the breach. A waiver by any of the parties of a breach or covenant of this Agreement shall not be construed to be a waiver of any succeeding breach or any other covenant unless specifically and explicitly stated in such waiver.

25. ENTIRE AGREMENT; MODIFICATION

This Agreement, including any attachments, constitutes the entire Agreement between the parties with respect to the subject matter hereof, and supersedes any prior understanding or agreement, oral or written, with respect to such subject matter. It may not be amended or modified, except by a written amendment executed by authorized representatives by both parties. In no event will the Agreement be amended or modified by oral understandings reached by the parties or by the conduct of the parties.

26. COMPLIANCE WITH LAWS AND REGULATIONS

During the progress of the work, CONSULTANT shall fully adhere to all applicable State and Federal laws and county, municipal or DISTRICT ordinances and regulations which in any manner affect those engaged or employed in the work, or the materials and equipment used in the work, or which in any way affect the conduct of the work. CONSULTANT, and any subcontractors performing any work under this Agreement, shall hold such licenses as may be required by the State of California for the performance of the work specified in this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement by their duly authorized officers as of the day and year first above written.

DISTRICT:

MID-PENINSULA WATER DISTRICT

By: _____

Name: Tammy A. Rudock

Title: General Manager

CONSULTANTS:

MANAGEWATER CONSULTING, INC.

By: _____

Name: Marty Laporte

Title: _____

By:_____

Name:_____

Title:_____

*NOTE: This Agreement must be executed by two corporate officers, consisting of: (1) the President, Vice President or Chair of the Board, and (2) the Secretary, Assistant Secretary, Chief Financial Officer, Assistant Chief Financial Officer, or by any person authorized by the corporation to execute written contracts.

MID-PENINSULA WATER DISTRICT

Proposal to Provide
Consulting Services for the

Mid-Peninsula Water District's
2015 Urban Water Management Plan Update

November 30, 2015

ManageWater Consulting, Inc., and

Maddaus Water Management, Inc.




ManageWater Consulting, Inc.

MADDAUS WATER MANAGEMENT INC.

ManageWater Consulting, Inc.
430 Nimitz Ave., Redwood City, California, 94061 650-722-7841

MADDAUS WATER MANAGEMENT INC.
105 Zephyr Place, Danville, CA 94526 (925) 831-0194

November 30, 2015

Mid-Peninsula Water District
3 Dairy Lane
Belmont, California 94002

Attention: Ms. Tammy Rudock, General Manager

Subject: Letter of Transmittal for Proposal for the Mid-Peninsula Water District 2015 Urban Water Management Plan

Dear Ms. Rudock:

ManageWater (MW) and Maddaus Water Management (MWM), the Water Management "Team", are pleased to submit this proposal for consulting services for the Mid-Peninsula Water District (MPWD)'s 2015 Urban Water Management Plan. As you know these plans are required of larger water providers in California every five years. Our Team looks forward to working with MPWD to prepare and update MPWD's 2015 UWMP.

Our Team has the project management, technical, and regulatory experience that MPWD needs to prepare the 2015 Plan. Together, we have over 75 years of experience in the water business with water efficiency at the forefront of our work. Our collaborative work style and track record are ideal for your needs. We have worked with BAWSCA agency clients for almost 15 years and have in-depth knowledge about the San Francisco Public Water Utilities (SFPUC) system. We are very familiar with the SFPUC regional system, seasonal operations, water supply management, and the regional system demand. Based on our recent work with Mid-Peninsula staff and data through the BAWSCA project in 2014 we are confident we can do an excellent job in a cost-effective manner. Marty Laporte and Michelle Maddaus have worked as a team together for over 15 years since the development of the 2000 Stanford Water Recycling and Master Plan.

Our Team includes five professional staff - two staff with advanced degrees, a registered professional engineer, a software engineer, and two support staff. Marty Laporte, MS., ManageWater Consulting, Inc.'s. Principal, has 28 years experience managing water resources and compliance programs. As a BAWSCA Water Quality Committee Chair, technical committee Vice Chair, a BAWSCA Board member, and Stanford University's representative for 22 years, Ms. Laporte has extensive experience managing programs, projects, teams, and preparing multi-disciplinary reports.

Ms. Michelle Maddaus, MBA, President of Maddaus Water Management, is a professional engineer, has over 15 years of impressive experience that includes preparing Urban Water Management Plans since 2000. Ms. Maddaus has worked with all BAWSCA agencies, including MPWD, to prepare the Demand Support System (DSS) models that all agencies are using for Water demand management. Mr. Chris Matyas, with Maddaus Water

Management, is a software engineer, and can be credited with greatly improving and simplifying the DSS Model interface for end users as well as his expertise with MS Excel as well as other more complex software databases. Tess Kretschmann, with Maddaus Water Management, is a Staff Engineer, with 9 years of professional technical experience. Andrea Pacheco, with Maddaus Water Management, is a Report Editor. Ms. Kretschmann and Ms. Pacheco will both be supporting the MW-MWM Team to develop the 2015 UWMP update for MPWD.
The **key features** of our project team are:

- Thorough understanding of Urban Water Management Plan requirements including what is new for 2015.
- Proven management record of projects and interdisciplinary teams.
- Experience in the design and evaluation of water conservation programs.
- Experience in working with per capita use targets.
- Productive working relationships with BAWSCA and SFPUC.
- Highly recommended by current and past clients.

Our approach to your project is to start with the 2010 UWMP document, update tables for 2015 conditions, update the material to reflect CA Department of Water Resources (DWR) comments on the 2010 plan (if comments were submitted), extend selected tables to 2040 as required, add new tables to address the per capita use targets and other material as indicated by the as yet to-be-finalized 2015 UWMP DWR Guidebook.

The **benefits** of selecting our team for this important assignment are:

- 75+ years of relevant experience
- Guaranteed availability of senior staff
- Experience gained through preparation UWMPs
- Proven track record of satisfied clients
- Demonstrated technical ability to produce a quality plan

As we are small firms we have been careful to not get over committed to preparing multiple 2015 UWMPs. The schedule will be carefully managed as there are only three months to prepare an administrative draft of plans for Mid-Peninsula staff review. The MPWD 2015 UWMP is one of the few plans we targeted and we look forward to being able to deliver a quality product in a short amount of time. ***We make your success our primary goal.***

We sincerely hope to have met the requirements set forth in your Request for Proposal. We look forward to meeting with you during the selection process; in the meantime, if you have any questions, please feel free to contact Marty or Michelle. Our contact information is listed on the letterhead and my email is ManageWaterNow@gmail.com and Michelle's is michelle@maddauswater.com.

Sincerely,

Marty Laporte
Principal, ManageWater Consulting, Inc.

Enclosures:

Five copies of Proposal

Contact Information for ManageWater Consulting, Inc., and Maddaus Water Management, Inc., Team

ManageWater Consulting, Inc
430 Nimitz Ave.,
Redwood City, California 94061
Phone: 650-722-7841
Contact: Marty Laporte, MS.
Email: ManageWaterNow@gmail.com

Maddaus Water Management, Inc.
105 Zephyr Place
Danville, California 94526
Phone: (925) 831-0194
Contact: Michelle Maddaus, P.E. and M.B.A.
Email: Michelle@maddauswater.com

TABLE OF CONTENTS PAGE

SECTION 2. Consultant Qualifications: Qualifications/ Relevant Experience

The Consultant Team comprises a partnership between ManageWater Consulting, Inc. (MW) and Maddaus Water Management, Inc. (MWM). In the Proposal our Team is referred to as the "Consultant Team".

Resumes for the Consultant Team are included in Appendix 1.

Consultant Team Capabilities

ManageWater Consulting, Inc.

ManageWater Consulting, Inc., (MW) is led by Marty Laporte, the Principal. Prior to starting MW, Ms. Laporte led a team at Stanford University that managed all compliance programs for water and environmental projects for the campus. MW has more than 20 years experience managing water resources and more than 28 years managing diverse projects, programs, and interdisciplinary teams. MW's key experience that is relevant to this proposal includes:

- Development of Stanford University's Water Conservation, Recycling and Reuse Master Plan
- Feasibility Study for Water Recycling at Stanford University,
- Development of Stanford University's Drought Contingency Plan,
- Management of all report preparation and submittals to regulatory agencies and Bay Area Water Supply and Conservation Agency (BAWSCA), including Stanford's DSS model, data for the BAWSCA Database, annual reports,
- Development of the Emergency Plans for Stanford University's Drinking Water Supply; and
- Management of Stanford Utilities Metering Program for potable water, non-potable water, sewer, chilled water, and steam utilities.

MW also has experience with Advanced Metering Infrastructure, having implemented a pilot program, including assisting with development of the user interface and data analytics for key water use metrics. Similar to MPWD, 100% of Stanford University's potable water supply was also from SFPUC. MW has experience working with Board members, as a Board member on the former Bay Area Water Users Association (BAWUA was the predecessor to BAWSCA) and on the BAWSCA Board. Ms. Laporte has worked on various committees with BAWSCA and SFPUC water agency staff, such as those focusing on water quality and conservation. MW is a seasoned project manager, having managed and served on dozens of interdisciplinary and cross-functional facility projects and teams. MW has extensive experience working with water utilities (Stanford University Utilities, BAWSCA), regulatory agencies (local, state, and federal), and private industry (as a consultant at Tetra-Tech and staff at Lockheed).

Further information on ManageWater Consulting, Inc., can be found online at
https://sites.google.com/site/managewaterconsulting/

MW has partnered with Maddaus Water Management for more than 15 years on more than a dozen projects. Initially, we worked together on the development of Stanford University's Water Conservation Master Plan, in 2000, and the first DSS model in the BAWSCA water agency group.

MADDAUS WATER MANAGEMENT INC.
105 Zephyr Place, Danville, CA 94526 (925) 831-0194

Maddaus Water Management (MWM) has completed 320 projects in 20 years and a number of them are very similar to the 2010 Urban Water Management Plan for the SSWA. A sample of three recent projects is provided below. We are proud of our tradition of repeat business with clients just like BAWSCA. A full 95 percent of our clients are municipal agencies or governmental entities, and approximately 85 percent of our work comes from repeat clients. We believe this illustrates not only our in-depth knowledge of the technical, regulatory, and stakeholder challenges facing these agencies, but also our willingness to listen and respond to individual client needs.

MWM, a women-owned corporation, was originally formed by William Maddaus in 1995. The firm has five employees and has completed over 320 water sustainability projects in the past 20 years. The firm operates from its offices in Alamo, Danville, and Folsom, California.

MWM gives clients the personal attention expected of a small business. As registered engineers, MWM has always taken a technically rigorous approach to water management planning using proven engineering estimates of water savings and benefit-cost analysis. Based in California, MWM has worked in many states and internationally where water supply is a critical issue. The company is widely recognized for their expertise and capabilities in water resource management, and for innovative contributions in advancing demand management technology and integrated water resources planning.

Within the field of water use efficiency and management, MWM offers a complete range of services, including master planning, drought mitigation, feasibility studies, benefit-cost analysis, detailed program design, budgeting and scheduling, program start-up and operation, and evaluation. Our other services include the following:

- Long-Range Water Conservation Planning
- Drought Preparedness Planning
- Water Savings Evaluation
- Program Implementation and Evaluation
- Water Demand Forecasts Incorporating Conservation
- Water Efficiency Surveys
- Commercial/Industrial Water Efficiency Training Workshops
- Water Conservation Research
- Integrated Water Resources Planning

The Least Cost Planning Decision Support System (DSS Model), a propriety software by Maddaus Water Management, has been used both nationwide and internationally. As of November 2015, MWM has completed more than 275 cost effectiveness models over the past 16 years. The DSS Model was officially endorsed by the California Urban Water Conservation Council in 2004 and is available to Group 1 members free of charge. Agencies across the United States and internationally have benefited from the DSS Model. The technical services of MWM include large and small water systems. Agencies located in the West include:

- Denver Water, Colorado Springs, and Aurora Water in Colorado
- Washington, Cedar and Kern County, Utah (lower 1/3 of the state of Utah)

- City of Austin, Texas
- Medford Water Commission, Oregon
- Honolulu Board of Water Supply, Hawaii
- San Francisco Public Utilities wholesale customers (all 26 wholesale customers), California
- East Bay Municipal Utility District, Marin Municipal Water District, California
- City of Sacramento, City of Santa Cruz, City of Santa Barbara, City of Oceanside, City Anaheim, California, City of Corona
- Stanford University, University of California Santa Cruz, and University of California San Francisco.

The model has been used in over 25 states across the nation and internationally in Canada, New Zealand and Australia representing a population of over 30 million people.

Further information on Maddaus Water Management can be found online at http://maddauswatermanagement.com/.

Table 1, below, displays the Consultant Team for this project including specific individual qualifications for the key personnel who are available to work on this project.

Table 1.
Project Consultant Team Qualifications and Experience

Person	Position	Service/Discipline	Years Exp.	Education / Degree	License
Marty Laporte	Principal in Charge, Project Manager, QA/QC	Water Resource Planning, and Management, Regulatory Compliance. SFPUC Supply and BAWSCA expertise.	28	M.S. Geology, B.A. Biology/Environmental Studies	--
Michelle Maddaus	Senior Manager, Senior Engineer	Water Resource Planning and Management, UWMP, DSS Model and Demand expertise.	16	M.B.A., B.S. Engineering	P.E.
Christopher Matyas	Project Support, Software Engineer	Software for Water Efficiency	16	B.S. Engineering	E.I.T
Tess Kretschmann	Project Support, Staff Engineer	Water Resource Planning, UWMP, and Project Management	9	B.S. Engineering	E.I.T
Andrea Pacheco	Project Support, Executive Administrator	Administrative & Technical Editing	9	B.A. English	--

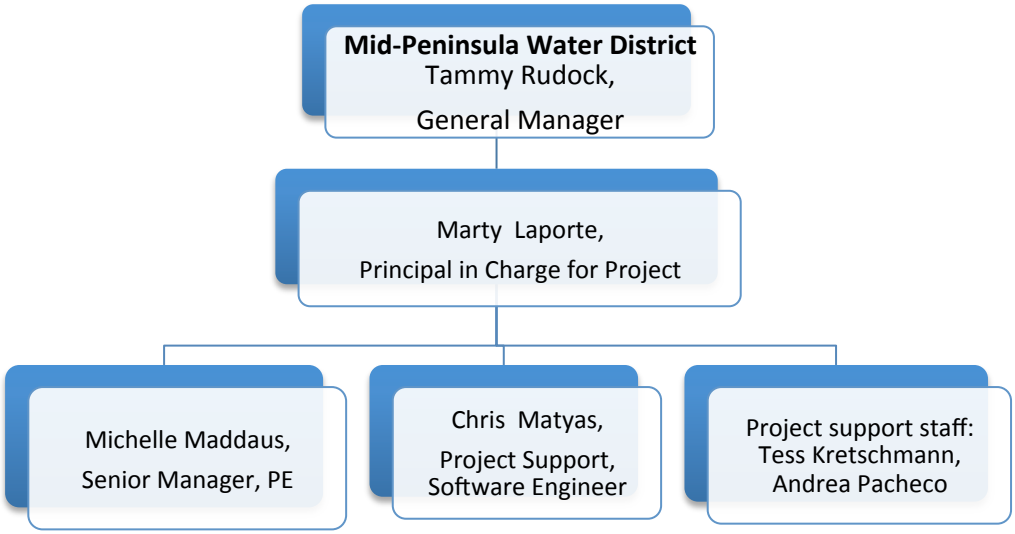
SECTION 3. Project Staffing: Project Team Contact Information

In Figure 1, presented below is the proposed Organizational Chart.

Our Consultant Team will work under the direction of MPWD. Ms. Laporte (MW) is the Principal in Charge and the Project Manager. Her expertise is in knowing BAWSCA and SFPUC agencies, supply and demand in the SFPUC regional system, and water resource and compliance management.

Michelle Maddaus (MWM) is the senior manager and engineer on this project. Ms. Maddaus has expertise in demand management, water conservation programs and water shortage contingency plans, UWMPs, and knows MPWD through working on their DSS Model.

Figure 1. Proposed Organizational Chart.



In **Table 2**, below is an estimate of the required personnel hours by task and job title for the tasks described in the MPWD scope of services. This information is not meant as a fee proposal, but only an indication of the level of effort envisioned for completion of the project at hand.

Table 2. Project personnel hours per task.

Task #	Task Description	Marty Laporte	Michelle Maddaus	Tess Pacheco	Andrea Kretschmann	Chris Matyas	
		Principal in Charge/Project Manager/QA/QC	Senior Project Manager/Senior Engineer	Project Support-Administrative	Project Support - Technical	Project Support/Software Engineer	Total Hours/Task
1	Information and Data Collection/Review and Project Kick-Off Meeting	8	8	3	1	0	20
2	Water Demand and Conservation	20	21.5	3.5	9	2	56
3	Water Supply Projections	10.5	3	6	0	0	19.5
4	Prepare and Submit Draft and Final 2015 UWMP	17	10.5	12	12	0	51.5
5	Support Public Outreach	18	11	1	2	0	32
6	Project Management	27	14	3	0	0	44
	Total by Individual	100.5	68	28.5	24	2	223

SECTION 4. Proposed Scope of Work

Outlined below is our approach for the tasks identified by MPWD and to complete the 2015 UWMP update effectively.

4.1 Project Approach

The Urban Water Management Planning Act (Act), first established in 1983, requires urban water suppliers with 3,000 or more connections or who deliver 3,000 acre-feet or more per year, to describe and evaluate sources of water supply and compare supply to demand in a document. The Urban Water Management Plan (UWMP) document must be adopted by the water agency's governing Council or Board and submitted to the Department of Water Resources (DWR) every five years.

Senate Bill x7-7 (SBx7-7) was passed by the California legislature and approved by the Governor on November 10, 2009, amending the Act in several important ways. SBx7-7 requires a 20 percent statewide reduction in urban potable water use by the year 2020. The percent reduction required by each water supplier varies by region and includes water savings targets measured in daily per capita use to be met by 2020 as well as an interim water savings target to be met by 2015. In addition, SBx7-7 extended the due date for submittal of the 2015 UWMPs for urban retail water suppliers to July 1, 2016. This extension was made to allow water suppliers to use methodologies being created by DWR for developing baseline water use from which to develop water conservation targets.

Our approach to your project is the following:

1. Start with the 2010 UWMP Document, (web link to the 2010 report was provided by MPWD in the RFP for the 2015 UWMP Update).
2. Update tables for 2015 conditions.
3. Update the material to reflect California Department of Water Resources (DWR) comments on the 2010 plan, (no comments were provided in the RFP and we will verify with MPWD that no comments were received from DWR.)
4. Add tables, data, and relevant information from MPWD's submittals in the BAWSCA Database, Water Conservation reports, and current DSS model for the MPWD UWMP submittal on the July 1, 2016.
5. Extend selected tables to 2040 as required; add new tables to address the per capita use targets and other material as indicated by the as yet to-be-finalized 2015 UWMP DWR Guidebook.

4.2 Summary of work

The MW-MWM team has developed its scope of work in accordance with MPWD's RFP ATTACHMENT "A". . The MW-MWM Team will use MPWD's current 2010 Urban Water Management Plan (UWMP) as a starting point to meet California Department of Water Resources (DWR) requirements for the 2015 update. Our task-based scope of work is presented below.

4.3 Proposed SOW Tasks – brief review of each task

The following is a summary of our strategy, task and important elements, assumptions, and the proposed schedule.

Task 1: Information and Data Collection/Review and Project Kick-Off Meeting

Our timeline is pretty aggressive, so, to be as efficient as possible, our Team will prepare a data needs list and agenda and send it to MPWD *ahead of* the kick-off meeting. To expedite the project we propose to meet on December 18 (based on MPWD staff availability), shortly after the contract award.
To streamline communication and information flow for the project, for our Team, Marty Laporte will be the main contact and Michelle Maddaus will be the backup contact for all communications. To facilitate efficiency and effectiveness in communications, we suggest that MPWD also identifies the main staff person and their backup who will coordinate the workflow for the MPWD with our Team.

Task 1.1. Kick-off meeting between consultant and MPWD staff to discuss UWMP requirements, project goals, opportunities, constraints, information needs, roles, responsibilities, project coordination, schedule, and expectations.
During the kick-off meeting we will review our proposal in detail, discuss regulatory requirements and 2015 UWMP updates, discuss existing MPWD data, data needs, sources of data, identify potential difficulties with data access or the project, and other potential hurdles that may impact the 2015 UWMP update. We will review our project management style, the work plan tasks and schedule and make adjustments, if needed. Due to the tight schedule for preparing the 2015 MPWD UWMP and need for streamlined feedback continuity, we plan to submit draft chapters as they are ready and hold monthly check-in calls.

SBx7-7 requires that urban retail water suppliers (URWS) which deliver more than 3,000 acre-feet of water or that serve more than 3,000 connections meet specified 2015 and 2020 water use targets (Targets) using one of four methods. For this proposal, we assume updating the single method selected by MPWD staff.

Once the Final 2015 UWMP Guidebook is released by DWR (currently planned for early December 2015), MW-MWM shall prepare a table of additional information needed, if necessary. The data collection and review effort will focus on assembling information that has changed since MPWD's 2010 UWMP was completed.

Task 1.2. Identify and research available existing data, records, maps, reports and plans
The following are elements will be obtained and reviewed by MW-MWM to develop MPWD's 2015 UWMP update:

- 2010 UWMP (provided with RFP), DWR Review Comments, if any, MPWD Response to DWR Review Comments.
- 2010 Methodologies (including Excel format) for Calculating the Baseline and Compliance Urban Per Capita Water Use based on DWR requirements.
- Population estimates and projections for the year used in the 2010 UWMP (in Excel format).
- Water production, water consumption, land use and demand management implementation.
- Existing service area maps (in jpeg format, ready for use)

Task 1.3. Identify and research other information, records, and current data necessary to develop the 2015 UWMP Update

- Reports to the CUWCC (if not available from the BMP Reporting Database)
- Changes to Population estimates and projections for 2010-2040 (in Excel format)
- BAWSCA Database data for 2010 -2015 (updated workbook provide by MWM in Excel format)
- Key changes since the 2010 UWMP was developed in service area water supply, additional water supply options, changes in population, area development, water use trends, or other factors identified by MPWD.
- Updated (if different from 2010) service area water system maps (in jpeg format)

Task 1 Deliverables:

- *Draft and final version of data needs summary*

We will provide the data needs in Excel format.

- *Kick-off meeting agenda, minutes, and list of identified action items*
  The meeting agenda will be prepared ahead of the meeting. Notes from the meeting will document our key discussion points, information and data needs, scheduled date for next monthly update and coordination meeting, and "who does what by when".

Task 2: Water Demand and Conservation

Consultant will develop the following information as part of this task:

- *Water System/Service Area Description*
  We plan to use existing service area maps (in jpeg format, ready for use) and description and any changes available from MPWD (Excel, Word format).
- *Current and Future Population Estimates*
  We plan to use existing service area information and any changes available from MPWD (Excel, Word format).
- *Water Demand and Conservation Projections*
  We plan to use existing service area information from MPWD's DSS Model, BAWSCA Database, and any changes available from MPWD (Excel, Word format).
- *Evaluation of Historic, Current and Projected Future Water Conservation and Demand Management Measures (DMM)*
  We plan to use existing service area information from MPWD's DSS Model, BAWSCA Database, and any changes available from MPWD (Excel, Word format).
- *System Water Loss Report*
  We plan to use existing service area information from MPWD's DSS Model, BAWSCA Database, and any changes available from MPWD (Excel, Word format).
- *Senate Bill X7-& Per Capita Water Usage Analysis*
  We plan to discuss with MPWD if you have a preferred method, or if we need to review all methods in Senate Bill X7-& Per Capita Water Usage Analysis. For cost purposes, we assume updating the single method selected by MPWD staff. We plan to use existing service area information from MPWD's BAWSCA Database, and any changes available from MPWD (Excel, Word format).
- *Water Shortage Contingency Plan (WSCP)* – We plan to use MPWD's 2015 WSCP. We assumed no changes to the 2015 WSCP in the 2015 UWMP update, since the plan has likely been reviewed due to California's severe drought for the past 4 years. We have experience on our Team to create or modify drought plans. If any significant update is needed, we are prepared to discuss the scope of this effort.

Task 2 Deliverables:

- *Draft description of water system and service area*
  To expedite the project, we anticipate completing this draft deliverable, comprising all or nearly all of existing information (from the 2010 UWMP), by January 5, 2016, for MPWD's review. We assume if there are any additional updates to be minor and readily available.
- *Draft demand projections—in total and by water use sector*
  We anticipate completing this draft deliverable, comprising all or mostly of existing information in MPWD's DSS Model, by January 5, 2016, for MPWD's review. We assume very minor updates are needed and the data necessary is readily available and will be provide by MWWD staff. However, if the data are not accessible and updates are needed, we will likely need more time to complete this deliverable.
- *Draft system water loss report*
  We have reviewed information previously submitted by MPWD for the 2014 BAWSCA Demand and Conservation Project. We anticipate the data to be available from the BAWSCA Database. As long as

there are no updates, we can complete this draft deliverable, using the existing information, by January 5, 2016, for MPWD's review.

- *Draft SBX7-7 analysis (e.g., baselines and GPCD interim and final targets)*
  The SBX7-7 analysis can be a time-consuming element and we need to review with MPWD the extent of analyses needed. The draft SBX7-7 analysis will need to be completed in March, for MPWD's review.
- *Draft WSCP summary version of updated WSCP*
  We assume the information for the Draft WSCP summary is readily available from MPWD with few, if any changes. The Draft WSCP summary version of updated WSCP will need to be completed in March 2016 for MPWD review.
- *Draft DMM summary*
  This section of the 2015 UWMP has undergone some significant changes since the 2010 UWMP. We assume the information for the Draft DMM summary is readily available from MPWD Including any historical conservation actions that have been undertaken since the 2010 plan will be provided in electronic format as requested. The Draft DMM summary will need to be completed in March 2016 for MPWD review.

Task 3: Water Supply Projections

Consultant will update the MPWD on its work progress and solicit input. The following information will be presented:

- Water Supply Projections
- Potential Supplemental Water Supplies
- Recycled Water Supply
- Current and Future Groundwater Supplies
- Water Quality Data
- Supply versus Demand Assessment

We assume the MPWD has current information on its water supply availabilities, including: water supply projections, potential supplemental water supplies, recycled water supply, current and future groundwater supplies, and related water quality data. Our Consultant Team will assess the supply versus demand and review our findings with MPWD.

Task 3 Deliverables:

- *Draft supply projections, including descriptions of water availability and reliability*
- *Draft description of recycled water potential*
- *Draft evaluation of water quality*
- *Draft supply versus demand projection comparisons*

All the above deliverables are dependent on timely availability of information from MPWD and the information needs will be discussed at the Kick-off meeting. The draft deliverables will need to be completed in February 2016.

Task 4: Prepare and Submit Draft and Final 2015 UWMP

Administrative Draft UWMP: Our Team will prepare an Administrative Draft UWMP that reflects all of MPWD's information and input throughout the preparation process. The Administrative Draft UWMP shall essentially be considered consultant's final proposed document that will be reviewed by MPWD staff prior to preparation of the Public Review Draft. The draft Administrative Draft UWMP will need to be completed in April 2016.

- Public Review Draft UWMP: Our Team will prepare the Public Review Draft UWMP based upon comments received on the Administrative Draft UWMP. The Public Review Draft UWMP will be

circulated to the appropriate public locations, including copies for Directors of the MPWD Board.

- Final UWMP: Our Team will meet with MPWD staff once all comments are received, including any received as part of the public hearing, to review and consolidate comments into the Final UWMP.

Within 30 days of the MPWD's adoption, our Team will forward the Final 2015 UWMP on the MPWD's behalf to CA DWR, the California State Library, and the San Mateo County Library. The Final 2015 UWMP will be delivered to the MPWD, including ten (10) paper copies and electronic files in WORD and Adobe PDF formats.

Task 4 Deliverables:

- *Draft UWMP (Electronic copies in WORD and PDF formats)*
  Our Team will submit the Draft UWMP for MPWD review in April
- *Final UWMP (10 hard copies, 2 electronic copies in WORD and PDF formats)*
  Our Team will provide the 10 hard copies, 2 electronic copies in WORD and PDF formats of the Final UWMP for MPWD submission June 30, 2016.
- *Final submittal to CA DWR – the 2015 DWR UWMP update identifies ability to upload the documents to DWR electronically*
  If MPWD agrees, our Team will upload the 2015 MPWD UWMP electronically to DWR on July 1, 2016, and provide MPWD verification of the electronic submittal. Our Team will also be responsible for the electronic table submission (the electronic tables are required to be submitted to DWR via their website submission in addition the UWMP report)
- *Meeting agenda and minutes*
  Notes from meetings will document our key discussion points, information and data needs, scheduled date for next monthly update and coordination meeting, and "who does what by when".

Task 5: Support Public Outreach

- Draft coordination letters and notices required by CWC Sections 10621(b); Section 10620(d)(2); and Section 10642
  This task will be completed in early May 2016.
- Attend and present at one (1) MPWD Board meeting
  Our Team, Marty Laporte or Michelle Maddaus, plan to attend the MPWD Board meeting on June 23, 2016.
- Engage stakeholders as directed by the MPWD in the workshops identified as part of Tasks 2 and 3
  We will discuss the MPWD expectations for this sub-task at the kick-off meeting.

Notes from meetings will document our key discussion points, information and data needs, scheduled date for next monthly update and coordination meeting, and clear action items with "who does what by when".

Task 5 Deliverables:

- *Draft and final versions of all outreach letters, notices, and other materials*
  We will complete the draft and final versions of all outreach letters, notices, and other materials in early May 2016.
- *Meeting agendas and minutes*
  We will develop meeting agendas ahead of our monthly check-in meetings, based on our discussions with MPWD and current work flow.
- *Presentation materials (e.g., handouts)*
  We assume the only presentation materials required for this project, as discussed in the RFP, are those for the June 23, 2016 Board meeting. We plan to submit a draft presentation, discuss it with the MPWD UWMP coordinator and finalize the presentation based on that discussion.

Task 6: Project Management

- Coordinate UWMP development process
  Marty Laporte is the Principal in Charge and will coordinate all aspects of the consultant Team and will coordinate the 2015 UWMP development process. Michelle Maddaus is the backup coordinator for this project. To facilitate efficiency and effectiveness in communications, we suggest that MPWD also designates the main staff person and their backup who will coordinate the workflow for the MPWD with the consultant Team. Our Team will develop a master tracking log to facilitate coordination and document communications during this project.

- Communicate and consult with MPWD staff
  MPWD is the client, and as such our Team will consult with the designated MPWD staff person throughout the process. The key means for ongoing communications will be via email, phone, monthly progress discussions and summary reports. Any identified or proposed changes from the agreed-upon and documented scope of work will be discussed with MPWD prior to proceeding with changes. Our Team will use a master tracking log to facilitate coordination and document communications about consultations, proposed changes, and decisions about the changes that alter the original scope of work (agreed upon at the start of the contract).
  Our Team will schedule monthly status updates (typically 1-hr conference calls) with MPWD. our Team will prepare agendas prior to the monthly status update meetings. In addition to the deliverables addressed in each task description, our Team will prepare short monthly progress reports following the monthly status update meetings.

- Attend and/or present at meetings with MPWD staff. At a minimum, consultant should assume progress meetings after completion of Tasks 2 and 3 and after the review of the Administrative and Public Review Draft UWMPs.

Our Team will schedule monthly progress meetings, with agendas developed ahead of the meetings. Some meetings will be in person (assuming 2 hours), others via conference call (assuming 1 hour), as follows:

- Meeting 1. December 18, 2015 (assuming date works for MPWD) – Kickoff meeting, Marty Laporte and Michelle Maddaus will attend this meeting.
- Meeting 2. January - monthly progress meeting – conference call
- Meeting 3. February - monthly progress meeting – conference call
- Meeting 4. March - monthly progress meeting, including development of draft outreach materials, completion of Task 2 – in person - Marty Laporte, Michelle Maddaus via conf. call.
- Meeting 5. April - monthly progress meeting, , including final outreach materials, completion of Task 3 – in person - Marty Laporte, Michelle Maddaus via conf. call.
- Meeting 6. May - monthly progress meeting, including completion of administrative draft UWMP – in person, Marty Laporte and Michelle Maddaus will attend this meeting.
- Meeting 7. June - monthly progress and preparation for MPWD Board meeting, including completion of final UWMP – conference call
- Meeting 8. June 23, 2016 - MPWD Board meeting presentation on final UWMP – in person, Marty Laporte and Michelle Maddaus will attend this meeting.
- Meeting 8. July – final project recap meeting – conference call.

Task 6 Deliverables:

- *Meeting agendas and minutes*
  The meeting agenda will be prepared ahead of the meetings. Notes from meetings will document our key discussion points, information and data needs, scheduled date for next monthly update and coordination meeting, and "who does what by when".

SECTION 5. Project Schedule

Below in Table 3 is a preliminary project schedule with the understanding that a final project schedule will be developed with the MPWD as part of the kick-off meeting. The "X" designates the month that work on this task is expected.

Table 3.
Proposed project schedule for each task and deliverable.

Task #	Task Description	Task Details	Questions	Schedule							
				December 2015	January 2016	February 2016	March 2016	April 2016	May 2016	June 2016	July 1, 2016
1	Collection/Review and Project Kick-Off Meeting	Kick-off Meeting		December 18	January	February	March	April	May	June	July 1
		Draft and final version of data needs summary		X	X						
		Kick-off meeting agenda, minutes, and list of identified action items		X	X						
2	Water Demand and Conservation										
		Draft description of water system and service area		X							
		Draft demand projections—in total and by water use sector			X	X					
		Draft system water loss report			X	X					
		Draft SBX7-7 analysis (e.g., baselines and GPCD interim and final targets)			X	X	X				
		Draft WSCP summary version of updated WSCP			X	X	X				
		Draft DMM summary				X	X				
3	Water Supply Projections										
		Task 3 Deliverables:									
		Draft supply projections, including descriptions of water availability and reliability				X	X				
		Draft description of recycled water potential				X	X				
		Draft evaluation of water quality				X	X				
		Draft supply versus demand projection comparisons				X	X				
4	Prepare and Submit Draft and Final 2015 UWMP			April - May							
		Draft UWMP (Electronic copies in WORD and PDF formats)			X	X	X	X	X		
		Final UWMP (10 hard copies, 2 electronic copies in WORD and PDF formats)								X	
		Final submittal to CA DWR									X
		Meeting agenda and minutes; final project recap								X	X
5	Support Public Outreach										
		Task 5 Deliverables:									
		Draft and final versions of all outreach letters, notices, and other materials						X	X	X	
		Meeting agendas and minutes		X	X	X	X	X	X	X	
		Presentation materials (e.g., handouts)					X	X	X	X	
6	Project Management			December 18 - July 1							
		Task 6 Deliverables									
		Meeting agendas and minutes		X	X	X	X	X	X	X	X
		Progress reports and invoices		X	X	X	X	X	X	X	X

Due to the limited time available to prepare MPWD's 2015 UWMP, we propose to submit each draft chapter as soon as we complete it, with specific deadlines and turn-around times for each of the 10 chapters. Table 4, below, provides our proposed schedule for chapter submittal and turn-around time to receive MPWD comments. The table shows color-coded rows to indicate same month submittal of draft deliverables to MPWD for review. This type of specific schedule has worked well with other clients when time is limited to prepare an UWMP or other time-sensitive documents.

Table 4.
Chapter preparation and review schedule for the Mid-Peninsula Water District 2015 UWMP update.

2015 UWMP Chapter	Consultant Team Sends Draft to MPWD	MPWD Returns Comments to Consultant Team
Chapter 1: Introduction and Overview	28-Dec-15	13-Jan-16
Chapter 2: Plan Preparation	5-Jan-16	20-Jan-16
Chapter 3: System Description	29-Dec-15	13-Jan-16
Chapter 4: System Water Use	28-Jan-16	18-Feb-16
Chapter 5: Baselines and Targets	23-Feb-16	16-Mar-16
Chapter 6: System Supplies	28-Jan-16	18-Feb-16
Chapter 7: Water Supply Reliability	27-Feb-16	22-Mar-16
Chapter 8: Water Shortage Contingency Planning	17-Feb-16	8-Mar-16
Chapter 9: Demand Management Measures	17-Feb-16	8-Mar-16
Chapter 10: Plan Adoption, Submittal, Implementation	22-Mar-16	12-Apr-16
Compiled Administrative Draft	21-Apr-16	11-May-16
Public Draft - *Release*	18-May-16	25-May-16
Final – *Release*	**23-Jun-16**	UWMP Completed for adoption by MPWD's Board.

SECTION 6. Fee Proposal

In this section we list the schedule of hourly rates for each classification, a complete cost summary per task of the estimated number of consulting hours, , and total not-to-exceed cost, including a schedule of ancillary charges (e.g., direct/reimbursable expenses, travel, copies).

Table 5 lists the rates for each Consultant Team member.

Table 5.
Project Consultant Team hourly rates for the MPWD UWMP update project.

Staff	Position	Service/Discipline	Years Exp.	Education / Degree	License	Hourly Rate
Marty Laporte	Principal	Technical Director/Reviewer	28	M.S. Geology BA Biology/Env. Studies	--	$200
Michelle Maddaus	Senior Manager, Engineer	Technical Advisor	16	M.B.A., B.S. Engineering	P.E.	$185
Christopher Matyas	Software Engineer	Software for Water Efficiency	16	B.S. Engineering	E.I.T.	$175
Tess Kretschmann	Staff Engineer	Technical Analyst, Modeler	9	B.S. Engineering	E.I.T.	$125
Andrea Pacheco	Report Editor	Word Processing	2	B.S. Sociology	--	$90

Table 6, provides a complete cost summary per task of the estimated number of consulting hours, and total not-to-exceed cost, including a schedule of ancillary charges (e.g., direct/reimbursable expenses, travel, copies). The hours are estimates, not to exceed, however, if we do not use all the hours in the estimates, we will charge for hours used in the project.

Table 6.
Fee Schedule.

Cost summary per task of the estimated number of consulting hours, and total not-to-exceed cost, with a schedule of ancillary charges (e.g., direct/reimbursable expenses, travel, copies).

Task #	Task Description	Marty Laporte	Michelle Maddaus	Andrea Pacheco	Tess Kretschmann	Chris Matyas		
		Principal in Charge/Project Manager/QA/QC	Senior Project Manager/Senior Engineer	Project Support-Administrative	Project Support - Technical	Project Support/Software Engineer	**Total Hours/Task**	**Total Cost/Task Labor and Ancillary Charges**
		$200/hr	$185/hr	$90/hr	$125/hr	$175/hr		
1	**Information and Data Collection/Review and Project Kick-Off Meeting**	8	8	3	1	0	20	$3,475.00
2	**Water Demand and Conservation**	20	21.5	3.5	9	2	56	$9,777.50
3	**Water Supply Projections**	10.5	3	6	0	0	19.5	$3,150.00
4	**Prepare and Submit Draft and Final 2015 UWMP**	17	10.5	12	12	0	51.5	$8,022.50
5	**Support Public Outreach**	18	11	1	2	0	32	$6,075.00
6	**Project Management**	27	14	3	0	0	44	$8,360.00
						Total Project Cost		**$38,860.00**

Invoices will be submitted at the end of each month with a request for 30-day payment.

ManageWater Consulting, Inc.

MADDAUS WATER MANAGEMENT INC.
105 Zephyr Place, Danville, CA 94526 (925) 831-0194

APPENDIX 1

APPENDIX 1 OVERVIEW

Section 1 –project team Qualifications and Experience

Section 2 – Relevant Project Experience

Section 3 – Project Team Resumes

APPENDIX 2

Description of the DSS Model

Section 1: Project Team Qualifications

Margaret (Marty) Laporte, M.S.

Marty Laporte, MS, has managed water and environmental programs and interdisciplinary projects for institutional industrial, and commercial facilities in the past 28 years. She has broad experience in managing interdisciplinary teams and implementing water utility projects including compliance for water quality, conservation, emergency response, drought response, and data analytics. Marty is the Principal with ManageWater Consulting Inc., focusing on water management and integrating innovative technologies and practices. Further information on ManageWater Consulting (MW), Inc., can be found online at https://sites.google.com/site/managewaterconsulting/

Prior to MW, she was the Associate Director at Stanford University's Utilities Department. She has conducted pilot studies using Advanced Metering Infrastructure, Data Analytics, and Weather-based irrigation technology. Marty served as a BAWSCA and BAWUA Board member from 1993 to 2015. In March 2015, she was awarded a Lifetime Achievement Award from the Silicon Valley Water Conservation Coalition.

She has managed the development of dozens of studies and co-authored water reports, including Stanford University's:

- Stanford University's Water Conservation, Recycling and Reuse Master Plan
- Feasibility Study for Water Recycling at Stanford University,
- Stanford University's Drought Contingency Plan,
- all report preparation and submittals to regulatory agencies and Bay Area Water Supply and Conservation Agency (BAWSCA), including Stanford's DSS model, data for the BAWSCA Database, annual reports,
- Emergency Plans for Stanford University's Drinking Water Supply; and
- Developed data analytics and metrics for Stanford Utilities Water Metering Program.

Marty also has experience with Advanced Metering Infrastructure, having implemented a pilot program, including assisting with development of the user interface and data analytics for key water use metrics. In 2015, she initiated and developed the Innovative Technology Forum for BAWSCA. The purpose of the Forum was to showcase use of innovative technologies for water management by water agencies presenting their implemented case studies and lessons learned. Technology representatives were available with agency presenters during a moderated panel discussion.
http://bawsca.org/event/innovative-technology-forum/
As a Board member on the Bay Area Water Users Association and on the BAWSCA, she has experience working with Board members, BAWSCA and SFPUC water agency staff. Ms. Laporte has extensive experience working with water utilities (Stanford University Utilities, BAWSCA), regulatory agencies (local, state, and federal), and private industry (as a consultant at Tetra-Tech and staff at Lockheed).

Ms. Laporte has an MS degree in geology from San Jose State University and a BA in Biology and Environmental Studies from U.C. Santa Cruz. A life-long learner, she is currently completing the Stanford University Graduate School of Business Entrepreneurial Certificate Program.

Michelle Maddaus, P.E.
Maddaus Water Management

Michelle Maddaus, P.E., is a registered civil engineer in California with 16 years of experience and has a wide variety of work experience in the water resources field. Michelle has been Project Manager for dozens of water conservation plans since 2003. A few of the California plans completed in the past five years include East Bay Municipal Water District, Marin Municipal Water District (MMWD)in 2007 and 2010, Sonoma County Water Agency (9 individual water agencies) in 2005 and 2010, City of Oceanside, City of Santa Barbara, Bay Area Water Supply and Conservation Agency (BAWSCA) representing 26 agencies. In addition, she was Project Manager for the 2010/2011 Urban Water Management Plans for South Tahoe Public Utilities, Suisun-Solano Water Authority and for a Water Conservation and Implementation Plan for San Luis Obispo County's Los Osos Service Area.

Michelle is comfortable designing both indoor and outdoor conservation programs with current technology. She has conducted over a hundred CII audits and has directly witnessed equipment and program needs of the water customers including the survey for facilities in California, Washington, and Hawaii. Her water audit experience includes facilities in Sonoma County, City of Burlingame, University of California Santa Cruz, Stanford Linear Accelerator, and Stanford University Campus. Michelle is also an excellent trainer who has done in-person trainings for over 300 people on the DSS Model, and over 100 people on how to conduct a CII water efficiency survey.

Michelle is affiliated with the American Water Works Association (AWWA) and is their immediate past chair of the Climate Change Committee, which she helped launch in 2008 and now has over 80 members nationwide. In March 2012, Michelle won the OASIS award from AWWA for her leadership for the Climate Change committee. In June 2012, she was featured on the cover of the AWWA Opflow magazine. The Opflow article, written by the MWM Team, focused on including water conservation in the portfolio of future water options for utilities to allow sustainable water management. In 2013 she co-authored "Preparing Urban Water Efficiency Plans – A Best Practice Guide" published by the International Water Association. She is leading the MWM team to update AWWA's Conservation Manual M52 in 2014-15. Michelle recently completed conservation Master Plans for the City of Anaheim and the City of Corona, both in California. Michelle has a B.S. in Civil and Environmental Engineering and a Masters in Business Administration (M.B.A.) from UC Davis.

Chris Matyas, E.I.T.
Maddaus Water Management

Chris Matyas, E.I.T., is a computer software engineer with over 16 years of experience in the software and civil engineering fields and has a wide variety of work experience in both the software design and water resources fields. Chris has worked on large and small software products including software packages distributed on HP, Lenovo and DELL personal computers and laptops. He has developed products localized into 25 different languages, including multiple character-based languages such as Japanese, Traditional Chinese and Korean.

In 2010, Chris completed a thirty-year water demand forecast for the wholesale customers of the Sonoma County Water Agency, which included working with seven different water utilities (seven individual water demand forecasting DSS Models). Water demand forecasts were prepared and adopted by the contractors and three levels of conservation program savings were evaluated. In 2011 and 2012, he prepared the demand forecasts and conservation program updates for the City of Santa Barbara, City of Oceanside, Marin Municipal Water District, the Los Osos service areas, City of Sacramento, and Columbus, Ohio. Chris is an expert in multiple programming languages including C++, C#, Java, Python, VBA (used to program Excel workbooks) and many more. Chris has a B.S. in Civil and Environmental Engineering from UC Davis.

Tess Kretschmann, E.I.T.
Maddaus Water Management

Tess Kretschmann, E.I.T., is a water resources engineer with over 10 years project management experience in community, nationally and internationally based environments. She has more than seven years of experience preparing water resources planning studies for urban water suppliers.

Tess is experienced in preparing water efficiency and master planning studies for water systems which include water demand projections and cost effectiveness evaluations. She has prepared urban water management plans for multiple water systems throughout California. Tess participated in the numerous modeling efforts for regional clients analyzing water system reliability, potential system conservation savings and system drought reliability, vulnerability and resiliency. She has led corporate sustainable development teams, focusing on water and energy use efficiency projects. She has created strategic visioning models representing regional water supplies and demands, simulating various drought, supply, demand, and climate change scenarios. Tess has prepared and evaluated drought plans, integrated water resource plans, groundwater management plans, and agricultural and urban water management plans. Tess has participated in competitive grant writing efforts, helping applicants receive awards of over 8 million dollars on behalf of regional consortiums. She has led workshops on drought management, master planning, and urban water management planning. Tess has managed permitting efforts for local, state, and federal infrastructure facilities (water tanks, pump stations, etc.). As vice chairperson of the Utilities Rate Advisory Commission in Sacramento, California, Tess reviewed and commented on proposed changes to utility service rates for water, sewer, garbage, recycling, yard waste, and street sweeping services; and she has advised on utility rate changes that were subsequently majority approved. She led public City hearings

about utility service rates and collected public feedback. Her academic background includes a B.S. in Civil and Environmental Engineering from Duke University.

Andrea Pacheco
Maddaus Water Management

Andrea Pacheco is a resourceful executive administrator with over 15 years project management and coordination experience in the engineering, technology, publishing, and advertising fields. She has expertise in detail management, editing, organizational systems development, and problem solving. Her experience in graphic design and development adds an extra flare to her work, allowing her to exercise her creative abilities as well. Andrea has prepared, written, and edited documentation to support the development of water use efficiency plans, technical memoranda, water survey reports, water conservation master plans, proposals, and more. She was recently part of the team working on a thirty-year water demand forecast for the wholesale customers of the Sonoma County Water Agency (nine different water agencies), which included working on the development of nine individual water conservation reports.

Andrea is primarily responsible for providing direct analytical and administrative support to the Maddaus Water Management Project Managers as well as sourcing information from team members to support the PMs in decision making. Andrea is currently developing a style guide for MWM. Her education includes a B.A. in English from St. Mary's College of California.

Section 2: Relevant Project Experience

Maddaus Water Management (MWM) has completed 320 projects in 20 years. A sample of recent projects is provided below. We are proud of our tradition of repeat business with clients. A full 90% of MWM clients are municipal agencies or governmental entities, and approximately 85% of our work comes from repeat clients. We believe this illustrates not only our in-depth knowledge of the technical, regulatory, and stakeholder challenges facing these agencies, but also our willingness to listen and respond to individual client needs.

Demand and Conservation Evaluation and 2010 UWMP Support, and Conservation Master Plan, Marin Municipal Water District, CA

MWM Project Manager: Michelle Maddaus
MWM Technical Lead (DSS Model): Chris Matyas
MWM Technical Review (QA/QC): William Maddaus
Value of Contracts:
$125,000, 2007 and 2009 Conservation Master Plan Project
$34,500, 2010 UWMP Demand & Conservation Project
Contact Name: Dan Carney, Marin Municipal Water District
Phone number: (415) 945-1522
Email: dcarney@marinwater.org

Project was on schedule and on budget.

MMWD is a public agency that provides high-quality drinking water to 190,000 people in a 147-square-mile area of south and central Marin County. MWM conducted a Water Conservation Evaluation for Marin Municipal Water District that was included as the main technical appendix of the Water Conservation Master Plan adopted by the MMWD board in July 2007. The analysis included 29 conservation measures including the 14 Best Management Practices as outlined in the CUWCC Memorandum of Understanding. At least 20 of the measures were new, innovative and state-of-the-art that extend beyond the current CUWCC BMPs. The analysis was conducted using the DSS Model.

In 2009 MWM completed a subsequent study of three additional conservation options:

- Leak detection and repair with Automated Metering System (AMS)
- AMS Meter installations
- Influence of new future plumbing requirements, taking effect in 2014

The goal of this project was to provide detailed cost and projected water saving information that allowed the Marin Municipal Water District Board to select a higher level of conservation termed "Program E" than was in the 2007 Master Plan. MWM also commented on reports prepared by public interest groups comparing water conservation to a proposed desalination plant and participated in a Water Conservation Summit for the public and addressed the question "How Far Can We Go" which had over 200 public attendees.

In February 2011 MWM completed a water demand and conservation update in support of MMWD's 2010 UWMP. The work products were:

- New demand forecast to 2035 in the format for the 2010 UWMP.
- Update on water conservation savings under the new demand scenario for their adopted water conservation plan.
- Amount of water conservation needed to achieve SB7x-7 year 2015 and 2020 per capita use targets using Method 3.

MMWD UWMP 2010 reports with the Maddaus Demand Analysis can be found in the UWMP Appendix E (page 108) at:
https://ca-marinwater.civicplus.com/DocumentCenter/View/533

Demand and conservation planning study, done in 4 separate phases:
Phase 1 Conservation Master Plan
https://ca-marinwater.civicplus.com/DocumentCenter/View/57
Follow up 2009 study:
https://ca-marinwater.civicplus.com/DocumentCenter/View/56

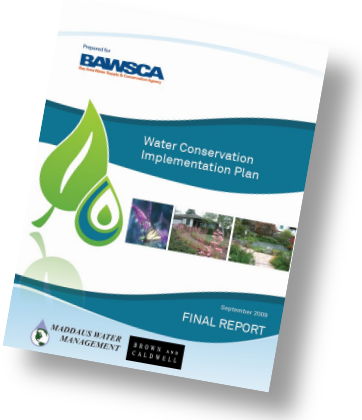
Regional Water Demand and Conservation Projections
Bay Area Water Supply and Conservation Agency

Team Project Manager: Michelle Maddaus
Conservation Team Lead: Lisa Maddaus
Model Team Lead: Chris Matyas

Project Director: William Maddaus
Subcontractor: Anil Bamezai, Western Policy Research
Value of Contracts:
$383,000, Demand and Conservation Update completed September 2014
$225,000, Water Conservation Implementation Plan completed September 2009
Contact Name: Nicole M. Sandkulla, P.E., BAWSCA
Phone: (650) 349-3000
Email: NSandkulla@BAWSCA.org

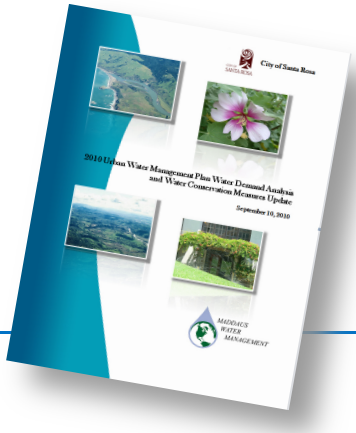
Project was on schedule and on budget.

Representing the interests of 26 member agencies that purchase water wholesale from the San Francisco regional water system, BAWSCA wanted to update their demand and water efficiency goals. Key components of the plan include:



- Working with BAWSCA agencies to determine the status of current conservation plans and identify where updates to plans have occurred since completing the 2009 study.
- Use electronic Survey Monkey tool to gather BAWSCA member agency preferences on new conservation measures to be included in the DSS Model. A total of 25 measures were selected for the DSS Model analysis.
- Modifying demand projections following review and input from BAWSCA and member agencies, and providing final demand projections by agency to BAWSCA with and without conservation.
- Developing alternative implementation schedules for meeting conservation goals of BAWSCA and its member agencies. Each alternative presented includes packages of conservation measures to achieve the stated goal, identify associated costs, and provide an implementation schedule.
- Preparing three technical memorandums with associated charts documenting results of analysis and providing BAWSCA with camera-ready (electronic) materials with explicit instructions as how materials are to be distributed to each agency.
- Provide 3 Workshops for BAWSCA members agencies:
    - Workshop #1 Kick off meeting – Data Collection and Project Timeline/Milestones
    - Workshop #2 Demand Analysis Results
    - Workshop #3 Water Conservation Results and DSS Model Training
- Prepare Final Report with the combined information from all 26 member agencies to provide the combined demand and conservation projections for all BAWSCA member agencies. A copy of the report can be found at the following link: http://www.bawsca.org/docs/BAWSCA%20Demand%20and%20Conservation%20Projection%20FINAL%20REPORT.pdf

Water Demand Forecast and Conservation Evaluation for UWMP Sonoma County Water Agency (SCWA), California



Project Manager: Michelle Maddaus
Technical Lead: Chris Matyas
Technical Review (QA/QC): William Maddaus

Project Completed and Value of Contracts:
$270,000 (for 9 agencies) completed September 2006
$105,000 (for 7 agencies) completed September 2010
$219,000 (for 9 agencies) completed July 2015
Contact Name: Rocky Vogler, Senior Water Resources Planner
City of Santa Rosa
Phone: (707) 543-3938
Email: rvogler@srcity.org

Project was on schedule and on budget.

MWM has prepared the water demand forecasts and water conservation program evaluation four times: in 1995, 2005, 2010 and 2015. As a part of the work, MWM was tasked with preparing 30-year water demand forecasts and evaluations of water savings and cost-effectiveness of several levels of water conservation measures. The first level corresponded to measures currently being implemented; the second level involved measures that included California BMPs; and the third level added standards for new single family home developments. For this project, MWM used the DSS Model to accurately estimate water savings due to efficiency improvements. An analysis was made for each agency separately then added together to represent the entire wholesale service area. Technical memorandums on the demands and conservation savings were prepared and reviewed with the individual agencies; their concurrence on the results was secured. The advanced measures were found to be cost-effective, particularly the new housing standards. Together with the plumbing code, for the 2010 UWMP these new conservation measures will enable water demands in 2030 to be reduced by up to 12%. The results for the 2015 UWMPs will be completed in May 2015.

For the 2005, 2010 and 2015 projects, demand and conservation forecasts were developed in the DSS Model in the exact format required by DWR for the UWMPs.

UWMP and Water Loss Conservation Control Program Plan, Suisun-Solano Water Authority, CA

2005,2010 and 2015 UWMP Project Manager: Michelle Maddaus
Project Completed and Value of UWMP Contracts:
$30,000 completed in December 2005
$35,000 completed in December 2010
Contact Name: Jim Daniels, Suisun-Solano Water Authority / Solano Irrigation District
Phone: (707) 455-4015
Email: DanielsJ@sidwater.org

Prime Contractor Project Manager: Reinhard Sturm, Water Systems Optimization (WSO)
Key Personnel: Lisa Maddaus (MWM), Tim Wilson (WSO)
Project Completed: June 2013
Value of Water Loss Contract: $120,000
Contact Name: Jim Daniels, Suisun-Solano Water Authority / Solano Irrigation District
Phone: (707) 455-4015
Email: DanielsJ@sidwater.org

All projects were on schedule and on budget.

Michelle Maddaus prepared Suisun Solano-Water Authority's Urban Water Management Plan in 2005 and 2010. The Plan closely followed the content requirements found in the California Department of Water Resources 2005 and 2010 Guidebook. She worked with District engineers to define the local water supply. Using the DSS Model she prepared a water demand forecast using data from their General Plan. She identified cost-effective conservation measures for the Suisun-Solano Water Authority to implement. Both the 2005 and 2010 UWMP reports were submitted to the CA DWR for approval and adopted by the City Council after a public hearing.

In order to ensure accountability and efficient operation as the water supplier, the Suisun-Solano Water Authority desired to conduct a detailed water loss study using new technologies and recognized approved best practices. Within this study, accuracy tests were conducted on all system input meters; the accuracy of data transfer between system input meters and the SCADA system was assessed; and recommendations for corrective actions were provided (system input meter replacement and SCADA data quality improvements). Both real and apparent water losses were analyzed in great detail utilizing new techniques implemented, providing the Suisun–Solano Water Authority with a detailed and accurate understanding of its water losses. Through the analysis, all system water losses were categorized and quantified, and an economically optimal level of losses was calculated so that specific cost-effective water management and conservation activities could be recommended.

Based on the findings of the detailed water loss study and the leak detection and pressure management pilot, the WSO and MWM project team provided the Suisun-Solano Water Authority with a Water Loss Control Program Plan (WLCPP). The WLCPP was based on a detailed cost/benefit analysis. It listed the tasks involved and outlined milestones of the plan. The WLCPP also included recommendations and details for regular best practice activities, such as regular testing of system input meters, sample testing of customer meter accuracy, conducting an in-house water audit, and record keeping of break data.

Section 3: Project Team Resumes

Margaret (Marty) Laporte

ManageWater Consulting, Inc.,
Principal

Education

M.S. Geology, San Jose State University
B.A. Biology/Environmental Studies, University of California, Santa Cruz
Continuing Education: AMI, Design Thinking, Stanford D-School Boot Camp, Sustainable Practices, Big Data management, Mediation, Regulations, Statistics. Currently enrolled in the Stanford University Graduate School of Business Entrepreneur Boot Camp Certificate Program.

Recent Relevant Work History/Accomplishments

Stanford University

- 2015 – Present Principal, ManageWater Consulting, Inc.
- 2010 – 2015 Associate Director of Utilities for Environmental Quality and Water Conservation, Sustainability and Energy Management http://lbre.stanford.edu/sem/Environmental_WaterEfficiency
- 2007 – 2009 Associate Director of Utilities for Water Resources and Environmental Quality, Facilities Operations, Utilities Division
- 1993 – 2007 Manager, Water Resources and Environmental Quality, Facilities Operations, Utilities Division

Lockheed Missiles and Space Co.

- 1988 – 1993 Environmental Engineer

Tetra Tech Environmental Programs - Consultant

- 1987-1988 Hydrogeologist

- Represented Stanford as a Board Member of the Bay Area Water Supply and Conservation Agency.
- Initiated and produced the BAWSCA Innovative Technology Forum and developed its case study format with agency presenters and the panel moderator. http://bawsca.org/event/innovative-technology-forum/
- Facilitated integration of innovative technologies, such as Advanced Metering Infrastructure (AMI), and "Best Practices" to yield long-term productive outcomes.
- Using "big data" developed metrics for measuring efficiency program progress and validation.
- Initiated pilot study program to test new efficiency technologies, manage data, develop criteria for success, document all parts of studies, identify efficiency technologies for campus-wide use.
- Developed and implemented Stanford University's Water Conservation, Recycling, and Reuse Master Plan: Stanford University's Water Conservation, Recycling and Reuse Master Plan
- Managed the development of dozens of studies and co-authored water reports, including The Feasibility Study for Water Recycling at Stanford University.
- Developed and implemented Stanford University's Drought Contingency Plan.
- Managed all report preparation and submittals to regulatory agencies and Bay Area Water Supply and Conservation Agency (BAWSCA), including Stanford's DSS model, data for the BAWSCA Database, annual reports.

- Developed and implemented Emergency Plans for Stanford University's Drinking Water Supply.
- Developed data analytics and metrics for Stanford Utilities Water Metering Program.
- Managed water metering data and developed metrics for 1700 water meters.
- Develop and write work scopes and requests for proposals and hire and manage contractors and consultants.
- Work with interdisciplinary teams, using "design thinking" to develop and implement strategies for managing water resources effectively.
- Developed effective process for reviewing University building plans to ensure efficiency, regulatory compliance, and minimizing environmental risks during construction.
- Advised and recommended strategies to senior management on university water sustainability and environmental policies, management practices, and environmental risk reduction for university operations and construction contracts.
- Managed and mentored student interns, professional and crafts staff to ensure sustainable compliance operations.
- Negotiated solutions with regulatory agencies for environmental compliance programs.
- Represented Stanford with off-campus groups, including local, state, and federal regulatory agencies, and community environmental action groups. Projects ranged from day-to-day compliance to long-term planning and program development.

ACCOMPLISHMENTS

- 2015. Silicon Valley Water Conservation Lifetime Achievement Award. https://news.stanford.edu/thedish/2015/03/25/marty-laporte-receives-water-conservation-award/
- 2015. Invited speaker for WaterSmart conference, Las Vegas.
- 2015. Invited speaker for the 12th annual Water Conservation Showcase, PG&E Energy Center, San Francisco
- 2015. Invited panel moderator for Sustainable Silicon Valley Symposium on local water reuse.
- 2015. Invited judge for Singularity University Water Impact Challenge.
- 2010 - 2014. American Water Works Association Climate Change Committee volunteer.
- 2010 - 2014. Board member of the Bay Area Water Supply Conservation Agency (BAWSCA).
- 2012. Certified Water Conservation Specialist.
- 2010. 2012. Invited speaker for CEE/Earth Systems 109 – Greening Buildings and Behavior, Stanford's first campus focused sustainability overview and training course.
- 2009-2013. Member Stanford/Palo Alto water/energy resource recovery team.
- 2009. Stanford University's Water Conservation Program awarded the 2009 Silicon Valley Water Conservation Award.
- 2009. Invited Moderator for Water Recycling and New Business Models session at the Annual Sustainable Silicon Valley Meeting.
- 2009. Invited participant on panel: IMAGINE H2O (a national non-profit), striving to engage entrepreneurs to solve current issues related to water.
- 2001- 2009 Managed Utilities Metering Program for Stanford, including five utilities.
- 2008 Invited participant: Woods Institute for the Environment and the Bill Lane Center for the Study of the North American West at Stanford University, participant in a two-part "Uncommon Dialogue" concerning water in the North American West.
- June 2007 – 2014. Vice-Chair, Technical Advisory Committee, BAWSCA.
- 2002-2003. Board Member, Bay Area Water Users Association Board Member, representing Stanford University.
- 1997 – 2002. Initiated and Chaired Water Quality Committee, Bay Area Water Users Association.
- 2000 – 2012. Invited speaker/participant for several Stanford University courses, including Urban Studies Course: Sustainable Habits, Green Dorm, CEE 179C Environmental Engineering Design.
- 2002. U.S Environmental Protection Agency Award for Stanford University's Mercury Thermometer Replacement Program.
- 2000, 2006. Invited member for San Francisco Public Utilities Commission Evaluation and Interview Panel for Management Consultants for SFPUC's $4.2 B Water System Seismic Retrofit Program.
- 1999. Managed cleanup of Stanford University's Ice Plant after major fire.
- 1998. Member Emergency Response for Stanford University's recovery from February 1998 El Nino floods.

- 1993-2008. Managed first San Francisquito Creek Community Coordinated Resource Management Planning meeting, with 300 in attendance. Represented Stanford University's water program with community-based San Francisquito Creek Watershed Council.
- 1991. Facility Operations Superior Performance Award, Lockheed Missiles and Space.

For an on-line description of my programs while at Stanford University, please see:
http://lbre.stanford.edu/sem/Environmental_WaterEfficiency

Selected Publications and Papers

2015 **Presentations at WaterSmart Innovations Annual Conference, Las Vegas, Nevada**. Co-authored: Water Use `Report Cards' - An essential tool for drought water management", and "Blueprint for replacing standard clock controllers with smart technology."
Presentation at 12th Annual Water Conservation Showcase. Co-authored: Integrating Regional Demand Planning with Practical Strategies to Implement Water Efficiency Technologies. https://vimeo.com/124253890 see starting at: 22.4

2013 **Presentation at WaterSmart Innovations Annual Conference, Las Vegas, Nevada**. Results from Pilot Testing New Technology to Improve Irrigation Efficiency
Presentation at California County Planning Commissioners Association Conference. Sustainable Water Management and Evolution of Stanford's Efficiency Program 2001 to 2013, and Beyond.
Presentation at Annual Meeting of Sustainability & Energy Management Department, Stanford University.

2012 **Presentation at American Water Works Assoiciation Annual Sustainable Water Management Conference in Portland, Oregon**. Developing Metrics for Landscape Irrigation Management Using Real-time Water Use Monitoring at Stanford University.
Presentation at UC Davis, CA, Higher Education Sustainability Conference. BMP and Metrics Development Using Real-time Water Use Monitoring & Water Budgets for Large Landscapes at Stanford University.
Co-presentation at Water - Technology Conference, Fresno, CA. Uncovering Leaks and Other Mysteries, with New Real-Time Technology.

2011 **Presentation at California Urban Water Conservation Council Plenary Meeting, Sacramento, CA.** Metrics and BMP Development Using Real-time Water Use Monitoring for Large Landscapes and Select Residential Customers at Stanford University
Water Wise 2011 Webinar Presentation. Goals of our Water Efficiency Program.

2010 **Presentation at American Association for Advancement of Science, 91st Annual Meeting of the AAAS, Pacific**
Division, Ashland, Oregon. Stanford University's Water Efficiency Program – 10 Years Later, lessons from an academic start-up.
Presentation at California Urban Water Conservation Council Plenary Meeting, Sacramento, CA. Metrics and BMP Development Using Real-time Water Use Monitoring for Large Landscapes and Select Residential Customers Stanford University.
Presentation at California Higher Education Sustainability Conference on Water Reduction Plans and Strategic Approaches, Long Beach, CA. A Decade of Success in Water Conservation at Stanford University.
Presentation at Sustainable Water Resources Roundtable, CA.

2009 **Moderator for Sustainable Silicon Valley and NASA Ames, CA. Water Summit and Annual Meeting.** Action towards long-term resiliency in water supply and management in Silicon Valley.

2008 **Presentation at Association of California Water Agencies**. Water-Efficient Technologies - What have we tested, What are we installing, What's Next?
Presnetation at San Mateo County, CA., Chamber of Commerce. Progress Seminar Remixed - Stanford University's Water Conservation Program.

2007 **Presentation at American Water Works Association, Annual Conference, Toronto**. Methods for Tracking and Projecting Water Use Based on Annual Implementation of Stanford University's Water Conservation Program."

2006 **Presentation at San Francisco Bay Area League of Urban Planners.** Water Efficiency and Conservation

Program for a Sustainable Stanford University.

2005 **Paper and co-presentation at American Water Works Association, Annual Conference, San Francisco.**
Four Years Later: Successes and Challenges for the Water Conservation Program at Stanford University.

2002 **Paper and co-presentation at American Water Works Association, Annual Conference, New Orleans.**
Water Conservation, Reuse, and Recycling Plan at Stanford University

Memberships: Alliance for Water Efficiency, American Water Works Association, UCSC Lifetime Alumni

Michelle Maddaus, P.E., M.B.A.

Maddaus Water Management, Inc.
President, Senior Water Resources Engineer

MADDAUS WATER MANAGEMENT INC.

Education

2003 M.B.A, Masters in Business Administration, University of California, Davis
2003 Study Abroad – University of New South Wales, Sydney, Australia
1999 B.S., Civil and Environmental Engineering, University of California, Davis
1997 Study Abroad – University of Oxford, St. Edmund Hall, United Kingdom

Recent Relevant Work History/Accomplishments

AWWA "Water Conservation Programs – A Planning Manual" (AWWA Manual M52)

Michelle led the MWM team to update M52 in 2014-2015. Manual is planned to be published in 2016.

International Water Association "Preparing Urban Water Efficiency Plans – A Best Practice Guide"

Michelle co-authored this publication with William and Lisa Maddaus in 2013. The guide is designed for developing countries and features over 25 case studies from around the world.

Regional Demand Forecasts and Conservation Evaluations for 16 County Atlanta Metro Areas, Georgia

Michelle led the technical modeling team to develop future water demand projections for the Metropolitan North Georgia Water Planning District. The project utilized the DSS software to model 16 different counties, including 93 different cities and water agencies that plan to supply a population of 7.5 million in 2030. An update to this project is planned in late 2015. (2003-2015)

Sonoma Marin Water Saving Partnership 2015 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update

Michelle was Project Manager on this update that developed forecasts of demand and conservation savings for the 2015 Urban Water Management Plan for the local water utility retail Water Contractors of the Sonoma-Marin Saving Water Partnership (SMSWP): City of Cotati, Marin Municipal Water District, North Marin Water District, City of Petaluma, City of Rohnert Park, City of Santa Rosa, City of Sonoma, Valley of the Moon Water District, and Town of Windsor. This project included the development of transparent, defensible, and uniform demand and conservation projections for the nine Water Contractors. The objectives of the project were: (1) quantify the total average-year water demand for each Water Contractor to the year 2040 using the DSS Model (Decision Support System); (2) quantify the passive and active conservation water savings potential for each Water Contractor through 2040; (3) identify conservation programs for further consideration for regional implementation; and (4) provide each Water Contractor with a user-friendly model that could be used to support ongoing demand and conservation planning efforts. (2005-2015)

Urban Water Management Plans (UWMPs)

Michelle has worked with urban water management plans since 2000. She has been involved in plans with the City of Sacramento (2000), Calistoga (2005), Suisun Solano County Water Agency (2005 and 2010), South Tahoe Public Utilities (2010) and technical demand analysis potion of the UWMPs for over 57 agencies including Marin Municipal Water District, North Marin County Water District, City of Santa Rosa, City of Petaluma, City of Rohnert Park, Town of Windsor, Town of Sonoma, Valley of the Moon, City of Cotati. (2005-2015)

Foster City Water Supply Assessment

Michelle was Project Manager for the Water Supply Assessment (WSA) which provided information for use in the California Environmental Quality Act analysis for various proposed projects in Foster City. It involved an assessment of whether available water supplies would be sufficient to serve the demand generated by the projects as well as the reasonably foreseeable cumulative demand during normal year, single dry year, and multiple dry year conditions over the next 20 years. This WSA report built on

previous water demand projections created as part of the Bay Area Water Supply and Conservation Agency Regional Demand and Conservation Projections, also completed in September 2014. (September 2014)

Aurora Water Conservation Technical Analysis and Model Training

Michelle was Project Manager for this analysis which had three goals: (1) review the saturation levels of historical conservation measures, (2) conduct a quantitative water conservation saving forecast using MWM's Demand Side Management Least Cost Planning Decision Support System (DSS Model), and (3) train Aurora Water staff to use the DSS Model. A Water Conservation Technical Analysis Memorandum was submitted as the final deliverable for this effort. (2014)

Park Water Company Water Use Efficiency Master Plan

Michelle was Project Manager for this plan. The plan identified programs and projects to most effectively meet water use requirements. It built on the 2010 Urban Water Management Plan (UWMP) prepared by Park Water Company in accordance with the California Urban Water Management Planning Act. With the use of MWM's DSS Model, the plan provided detailed information for 20 individual conservation measures, giving Park the flexibility to use this plan as a guide to implement additional measures to help increase water savings should the statewide drought worsen significantly. To determine Park's target per capita water use, baseline per capita water use was refined by determining Park's 2010 service area population using GIS techniques to align water service area and 2010 census block boundaries. (2014)

Demand Forecasts and Conservation Savings Evaluation for BAWSCA Members, California

Michelle was on the project team that developed future water demand projections for agencies served by the San Francisco Public Utilities Commission. The project utilized the DSS software to model 30 different cities and water agencies that currently supply 1.7 million people. (2003-2006). The Demand forecasts were recently updated for all the agencies with individual DSS Models incorporating regression analysis to explain trends of the economy, weather, price increases, and population growth. (2014) http://www.bawsca.org/docs/BAWSCA%20Demand%20and%20Conservation%20Projection%20FINAL%20REPORT.pdf

Water Conservation Master Plans, California and Other States

Michelle completed the Water Conservation Plans for City of Anaheim, City of Corona, East Bay Municipal Water District, Marin Municipal Water District (MMWD), City of Oceanside, and City of Santa Barbara, all in California; Southern Oregon Water Conservation Work Group in Oregon; Jordan Valley Water District, Washington County, and Kane County, all in Utah; United Water in Idaho; City of Cape Coral and Palm Beach County, both in Florida; and Catawba-Wateree Management Group in North and South Carolina. (2008-2014) http://catawbawatereewmg.com/2014/2014.04_CWWMG_WaterUseEfficiencyPlan_April2014.pdf

Commercial, Industrial Water Survey (Audit) Training, Abbostford, Canada

Michelle conducted four days of hands-on training for five of the City staff including site visits to customers of poultry and agriculture production facilities. (2013)

Water Conservation Implementation Plan for the Los Osos Wastewater Project, Los Osos, California

Michelle was Project Manager and technical lead for the 2012 conservation plan, including a detailed plan for over 5 million dollars in residential and commercial conservation programs. (2012)

http://www.slocounty.ca.gov/Assets/PW/LOWWP/document+library/Revised+Final+Draft+WCIP.pdf

Bay Area Water Supply and Conservation Agency (BAWSCA) Water Conservation Implementation Plan, California

Michelle was Project Manager for the Bay Area Water Supply and Conservation Agency (BAWSCA) Water Conservation Implementation Plan. (2009) http://bawsca.org/water-supply/water-conservation-implementation-plan/

State of Queensland, User Demand and Cost Analysis, Queensland, Australia

Michelle was Technical Lead to create a Business Water Efficiency Program and Drought Emergency Measure Design. She directly supervised the creation of 54 individual DSS Models to cover the entire State of Queensland, Australia. (2006)

Selected Publications and Papers

Past International and National Publications

"Pursuing More Efficient Water Use: The History and Future of Water Conservation in the United States," with W. Maddaus, L. Maddaus, and C. Matyas, Journal AWWA, August 2014.

Committee Report: Sustainability of Water Resources Depends on Implementing Our Knowledge of Climate Change Variability," Journal AWWA, June 2011.

"Progress in US Water Conservation Planning and Implementation – 1990-2009," with MD. Mamunur Rashid and W. Maddaus, Journal AWWA, June 2010.

"Innovative Water Conservation Supports Sustainable Housing Development," with W. Maddaus, M. Torre, and R. Harris, Journal AWWA, Vol. 100-No. 5, May 2008.

Recent National Presentations

"Case Studies and Highlights of the New AWWA Conservation Planning Manual M52," with W. Maddaus, L. Maddaus and D. Gross, Proceedings Water Smart Innovations Conference, Las Vegas, Nevada, October 2015.

"CII and Residential Surveys – Case Studies on How to Effectively use Tablet Software," with W. Maddaus, L. Maddaus, C. Matyas, J. Ortiz, and K. Galvin, Proceedings Water Smart Innovations Conference, Las Vegas, Nevada, October 2015.

"Improving Water Use Efficiency - History and Future of Water Conservation in the United States," with W. Maddaus, L. Maddaus, C. Matyas, M. Rashid, Proceedings AWWA Annual Conference, Anaheim, California, June 2015.

"How Running Multiple Demand and Conservation Forecast Scenarios Can Help Plan for the Future," with W. Maddaus, C. Matyas, I. Macias, Proceedings AWWA Annual Conference, Anaheim, California, June 2015.

"Overview of the IWA Best Practice Guide for Preparing Urban Water Use Efficiency Plans & Two Case Study Presentations," with L. Maddaus, W. Maddaus, T. Goddard, K. Johnson, Proceedings International Water Association Efficient Conference, Ohio, April 2015.

"On the Conservation Road – 3 Case Studies – Mature, Intermediate and New," with L. Hodnett, Proceedings AWWA Sustainable Water Resources, Portland, Oregon, March 2015.

"Cost-Benefit Analysis Workshop," AWWA Sustainable Water Management Conference, Portland, Oregon, March 2015.

"Cost-Benefit Analysis Workshop," Water Smart Innovations Conference Las Vegas, Nevada, October 2010, 2011, 2012, 2013, 2014 and 2015.

"Integrating regional demand planning with practical strategies to implement water efficiency technologies," with M. Laporte and A. Delagah, Proceedings Water Conservation Showcase, San Francisco, California, March 2015.

"Where Do We Go from Here As a Region? Case Study on Quantifying the Economic Recovery and Future Conservation Strategy," with A. Johnson, W. Maddaus, A. Bamezai, C. Matyas, and L. Maddaus, Proceedings Water Smart Innovations Conference, Las Vegas, Nevada, October 2014.

"CII Water Surveys – Time to automate! Increasing Efficiency Using Tablet Software," with W. Maddaus, L. Maddaus, and C. Matyas, Proceedings AWWA Sustainable Water Resources, Denver, Colorado, April 2014.

"Cost-Benefit Analysis Workshop," with W. Maddaus, AWWA Sustainable Water Management Conference, Denver, Colorado, April 2014.

"Planning in a Perfect Storm: Poor Economy, Wet Weather, and Budget Cuts," with W. Maddaus, Proceedings Water Smart Innovations Conference, Las Vegas, Nevada, October 2013.

"San Diego County Water Authority Agricultural Water Management Program Evaluation," with L. Swanson, Proceedings Water Smart Innovations Conference, Las Vegas, Nevada, October 2013.

"Practical Approach to Incorporate Uncertainty in Benefit Cost Analysis of Water Conservation Option," with MD. Mamunur Rashid and W. Maddaus, Proceedings AWWA Sustainable Water Resources, Nashville, Tennessee, April 2013.

"Modeling Innovative Conservation Measures," with W. Maddaus, Proceedings AWWA Sustainable Water Resources, Nashville, Tennessee, April 2013.

"Real Time Monitoring and Internet Tracking for Efficient Landscape Irrigation," Water Smart Innovations Conference, Las Vegas, Nevada, October 2012.

"Leveraging New Technology for Conservation Tablets/Software to Streamline CII Surveys," Water Smart Innovations Conference, Las Vegas, Nevada, October 2012.

"BMP and Metrics Development Using Real-time Water Use Monitoring & Water Budgets for Large Landscapes at Stanford University," American Water Works Association, Sustainable Water Management Conference, Portland, Oregon, March 2012.

"Understanding the Impact of Climate Change on Water Resources Sustainability – AWWA's Climate Change Committee Report," with Aziz Ahmed, CDM, ASCE/EWRI 2011 World Environment & Water Resources Congress, Palm Springs, California, May 2011.

Certification and Training	Awards
2003 Professional Engineering License, State of California, License No. C 68712	2012 American Water Works Association, Outstanding Achievement Service, and Initiative in Sustainability of Water Resources

Positions Held	
Maddaus Water Management: Senior Water Resources Engineer	2003-Present
Psomas, Design Engineer	2001-2002
Owen Ayres Associates, Water Resources Engineer	1999-2001
Office of the Attorney General, Engineering Technical Advisor	1998-1999
State Water Resources Control Board, Engineering Aide	1996-1998
Montgomery Watson, Engineering Aide	1994-1995

Associations	
Alliance for Water Efficiency, Member	2008-Present
American Water Works Association, Member	2003-Present
American Water Works Association, Climate Change Committee Chair	2008-2011
Bay Area Water Works Association, Member	2004-2009
American Society of Civil Engineers, Special Programs Director	2003-2004
California Urban Water Conservation Council, Research & Evaluation Committee	2004-Present
California Urban Water Conservation Council, Membership Committee	2004-2008
College Water Efficiency Group, Chair	2012-Present

Christopher Matyas

Maddaus Water Management, Inc.
Water Resources Engineer / Software Engineer

Education

2000 B.S., Civil and Environmental Engineering, Minor in Computer Science, University of California, Davis

Recent Relevant Work History/Accomplishments

Water Use Report Cards Software, Stanford, California

Chris has developed a custom software tool for Stanford University to automate the generation of their monthly water use report cards. The software was developed in C# and uses data automatically collected from over 2,000 water meters throughout the campus. The software imports the data into a database, which enables the user to review, group, and update meter data, then generate monthly report cards that are output into Excel spreadsheets. These report cards include historical water use from the previous years and compare it to current year water use. The report cards give monthly water use goals for the remaining months. Stanford is currently using the tool to help meet their drought water use reduction goals. Each water user has a water use reduction goal published on each of their monthly report cards. (2014)

Water Demand and Conservation Projection Analysis Software (DSS Model), BAWSCA, California

Chris completed an update to the MWM DSS model software using VBA and C# to improve the previous model, then used that model to project demands for 27 agencies in the San Francisco Bay Area. The new DSS model shrunk the size of the model and increased the speed and improved the usability of the software while implementing the same methodology as used by the previous versions of the MWM DSS model. This update also included the new ability to create multiple, different demand projections within the same model. The different demand projections were then used with a suite of conservation measures to project demands with savings from multiple conservation programs. (2012-2014)

Drought Indicator Model Software, Rancho Murieta, California

Chris developed a custom software tool for Rancho Murieta Community Services District which projected the effects of different drought scenarios on storage levels of the agencies' water supplies. The model took into account river flows, rain and snow fall, seepage and evaporation, and different demand scenarios. The model is currently being used to help make decisions, such as whether or not to start pumping early to increase storage, and to help estimate the effects of backup water supplies like wells and water purchases. (2013-2014)

Commercial Water Audit Software, University of California, San Francisco, California

Chris designed a new software tool for use by MWM to conduct a full inventory of water use fixtures in multiple UCSF campuses throughout San Francisco. He implemented a flexible, real time updateable product, based in Excel, using VBA and C#, which enabled a small team to survey ~5 million square feet of buildings. (2011-2013)

Commercial Water Surveys for UCSF and City of Burlingame, California

Chris completed a water audit in 2012 of the Parnassus Campus of the University of California at San Francisco (13 buildings, 2 million square feet). He also conducted Commercial Water Surveys for four individual dairies in Sonoma County California, Burlingame Long Term Care, Skyline Terrace Apartments, and Coyote Point Recreation Area. (2010-2013)

Landscape Water Budget Software, Stanford University, California

Chris implemented a new software product enabling users to quickly and easily create a water budget based on simple site descriptors, including types of turf and shrubs, sun exposure, and wind and irrigation system factors. The software used the Landscape Coefficient Method equations to automatically determine the estimated amount of water required to keep the described landscape area healthy; then it created a budget. It compared the budget to the actual metered water used by the site and gave advice on water use by season. (2012)

Suisun-Solano Water Agency Urban Water Management Plan (UWMP), California

Chris created the DSS Model used for evaluating water conservation measures for the Suisun-Solano Water Agency Urban Water Management Plan. (2010-2011)

Demand Forecasts Using DSS Model, California

Chris developed 30-year water demand forecasts for the Marin Municipal Water District, City of Santa Barbara, City of Oceanside, and the Los Osos Service area using the DSS model. (2010-2011)

Demand and Conservation Analysis for Sonoma County Water Agency (SCWA) Water Management 2010 UWMPs

Chris developed a 30-year water demand forecast for the Sonoma County Water Agency, which included working on the DSS models of seven different water utilities, developing new software for use in the model, and improving the reporting results of the model. (June 2010)

Selected Publications and Papers

"Pursuing More Efficient Water Use: The History and Future of Water Conservation in the United States," with W. Maddaus, M. Maddaus, and L. Maddaus, Journal AWWA, August 2014.

"How Running Multiple Demand Forecast and Conservation Scenarios Can Help Plan for the Future – Case Study Using the DSS Model," with M. Maddaus, W. Maddaus, and I. Macias, Water Smart Innovations Conference, Las Vegas, Nevada, October 2014.

"Where Do We Go from Here As a Region? Case Study on Quantifying the Economic Recovery and Future Conservation Strategy," with A. Johnson, M. Maddaus, W. Maddaus, L. Maddaus and A. Bamezai, Water Smart Innovations Conference, Las Vegas, Nevada, October 2014.

A New Era in Conservation Programs – Leveraging Tablet Software for CII Audits," with M. Maddaus and W. Maddaus, Proceedings AWWA Sustainable Water Resources, Nashville, Tennessee, April 2013.

"CII Water Surveys – Time to Automate! Increasing Efficiency Using Tablet Software," with W. Maddaus, M. Maddaus, and L. Maddaus, Proceedings AWWA Sustainable Water Resources, Denver, Colorado, April 2014.

"Leveraging New Technology for Conservation Tablets Software to Streamline CII Surveys," Water Smart Innovations Conference, Las Vegas, Nevada, October 2012.

"Real Time Monitoring and Internet Tracking for Efficient Landscape Irrigation," Water Smart Innovations Conference, Las Vegas, Nevada, October 2012.

Certification and Training

1999 Engineer in Training License, State of California

Positions Held

Maddaus Water Management, Water Resources Engineer	2010-Present
PC-Doctor, Software Engineer	1999-2010
Majors Engineering, Civil Engineer	1997-1999

Tess Kretschmann

Maddaus Water Management, Inc.
Water Resources Analyst

Education

2004 B.S., Civil Engineering, Duke University

Recent Relevant Work History/Accomplishments

Regional Demand Forecasts and Conservation Evaluations for 16 County Atlanta Metro Areas, Georgia

Tess is part of the update team that is developing future water demand projections for the Metropolitan North Georgia Water Planning District. The project utilizes the DSS software to model 16 different counties, including 93 different cities and water agencies that plan to supply a population of 7.5 million in 2030. The update for the project is planned to be completed in late 2015.

Water Conservation Master Plan, City of Santa Cruz, California

Tess was on the project team for the Water Conservation Master Plan, which was finalized utilizing MWM's DSS Model. This involved a heavy public planning process to make the plan a very open and integrated process. (2015)

Santa Clarita Valley Family of Water Suppliers Water Use Efficiency Strategic Plan

Tess was Project Engineer for this Water Use Efficiency Strategic Plan (WUE SP) that was prepared on behalf of and in support of Castaic Lake Water Agency (CLWA) and the four retailer agency water use efficiency programs. This was an update to the prior plan published in 2008 and was developed as a collaborative effort among staff at CLWA, the Retailers, and MWM. The WUE SP was prepared in close coordination with the Water Conservation Coordinators Committee and received CLWA and Retailer management buy-in through the Water Committee. The WUE SP was prepared according to United States Environmental Protection Agency and American Water Works Association guidelines for the development of Water Conservation Plans. The deliverables included: (1) data collection and historical water use analysis; (2) review of current water use efficiency efforts; (3) identification and development of future water use efficiency measures; (4) analysis of cost effectiveness of measures using the DSS Model; (5) creation of program scenarios of measures; (6) optimization of recommended measures to meet goals including GPCD targets; (7) achievement of buy-in on recommended program; (8) preparation of Plan document; and (9) Plan adoption. (2014-2015)

Castaic Lake Water Agency Demand Forecast Update Project

As Project Engineer, Tess was part of the team that updated the projected demands for the four water retailer agencies in the Santa Clarita Valley served by Castaic Lake Water Agency. This project was implemented in a two-phase approach. The first phase included a "top-down" approach to review and update the forecast of future demand using revised population estimates from the 2010 Urban Water Management Plan (UWMP) and the population validated from the Population Assessment project completed in June 2014. Phase 1 demand forecasts were also adjusted to normalize for the influencing factors of the economy and weather. A second phase was performed to review a different planning perspective using a land-use-based demand forecast with a "bottom-up" approach based on retail agency provided information. The goal of this effort was to finalize demand forecasts for each retailer agency and CLWA in order to comply with the 2015 Urban Water Management Plan Act. (2014-2015)

Sonoma Marin Water Saving Partnership 2015 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update

Tess was Project Engineer on this update that developed forecasts of demand and conservation savings for the 2015 Urban Water Management Plan for the local water utility retail Water Contractors of the Sonoma-Marin Saving Water Partnership (SMSWP): City of Cotati, Marin Municipal Water District, North Marin Water District, City of Petaluma, City of Rohnert Park, City of Santa Rosa, City of Sonoma, Valley of the Moon Water District, and Town of Windsor. This project included the development of transparent, defensible, and uniform demand and conservation projections for the nine Water Contractors. The objectives of the project were: (1) quantify the total average-year water demand for each Water Contractor to the year 2040 using the DSS Model (Decision Support System); (2) quantify the passive and active conservation water savings potential for each Water Contractor through 2040; (3) identify conservation programs for further consideration for regional implementation; and (4) provide each Water Contractor with a user-friendly model that could be used to support ongoing demand and conservation planning efforts. (2005-2015)

City of Sacramento Water Use Statistics Comparison Study

Tess was Project Engineer on this work effort where the principal purpose was to benchmark the City's water use related statistics compared to other California water purveyors. This included performing data analyses along with developing compelling visual graphics to identify the City's current water usage and its ongoing efforts to be more efficient with local water resources. The deliverable for this study presented: (1) historical trends (rainfall, drought, economic recession, water production, and number of accounts); (2) current consumption by customer category; (3) California urban water use versus irrigation demand represented by evapotranspiration values; (4) a benchmarking water purveyor comparison matrix presenting demographics, customer category water use and accounts, and conservation elements from water purveyors serving the 10 largest cities in California; (5) City of Sacramento outreach potential; and (6) recommendations and next steps. One key goal of the project was to develop information based on readily available data that comes from documented sources that would be easily accessible to the public and that would continue to stay updated in the future (i.e., reports submitted to Department of Public Health). (2014)

Castaic Lake Water Agency Population Assessment and GPCD Review

Tess was Project Engineer for this project, which involved preparing an assessment of population for the purpose of tracking water consumption on a gallons per capita per day basis by the four Santa Clarita Valley Water Suppliers within the Castaic Lake Water Agency service area. This assessment was conducted using United States Census block data from the years 2000 and 2010. The population assessment was conducted by evaluating the population in each census block to determine what portion of the population residing in that block was located in a particular retail agency service area. The population assessment was verified by using high resolution aerial maps to visually review census blocks which contained more than one service area. (2014)

Water Conservation Technical Analysis, Washington County, Central Iron and Kane County Water Conservation Districts, Utah

Tess was on the team that conducted the conservation technical analysis for three County Water Conservation Districts as a part of a Water Needs Assessment prepared for the Lake Powell Pipeline Study. This involved identifying and evaluating the current and new conservation measures to reduce future water demand; estimating the costs and water savings of those measures; and combining the measures into more aggressive programs and evaluating the costs and water savings of the alternate programs. The results of this analysis were used to prepare the federal environmental impact report on the Lake Powell Pipeline Project. (2014)

Santa Barbara Water Conservation Analysis

Tess was Project Engineer for this analysis, which explored water use and conservation water savings estimates for two scenarios: (1) Long Term Conservation Plan for 2014-2040 (26 years), and (2) Drought Program for 2014-2015 (1 year). The analysis was performed from various perspectives, including the utility and community using MWM's DSS Model. Eleven conservation measures were evaluated to possibly reduce future water demand, and the costs and water savings of these measures were estimated. (2014)

El Dorado County Water Agency Water Resources Development and Management Plan West Slope Update

As Project Engineer, Tess and the MWM team contributed to the preparation of this report, which presents regional water demands, water use efficiency measure savings, water supply needs, and conclusions on regional water management. (2014)

Foster City Water Supply Assessment

Tess was Project Engineer for the Water Supply Assessment (WSA) which provided information for use in the California Environmental Quality Act analysis for various proposed projects in Foster City. It involved an assessment of whether available water supplies would be sufficient to serve the demand generated by the projects as well as the reasonably foreseeable cumulative demand during normal year, single dry year, and multiple dry year conditions over the next 20 years. This WSA report built on previous water demand projections created as part of the Bay Area Water Supply and Conservation Agency Regional Demand and Conservation Projections, completed in September 2014. (2014)

Aurora Water Conservation Technical Analysis and Model Training

Tess was project engineer for this analysis which had three goals: (1) review the saturation levels of historical conservation measures, (2) conduct a quantitative water conservation saving forecast using MWM's Demand Side Management Least Cost Planning Decision Support System (DSS Model), and (3) train Aurora Water staff to use the DSS Model. A Water Conservation Technical Analysis Memorandum was submitted as the final deliverable for this effort. (2014)

Park Water Company Water Use Efficiency Master Plan

Tess was project engineer for this plan. The plan identified programs and projects to most effectively meet water use requirements. It built on the 2010 Urban Water Management Plan (UWMP) prepared by Park Water Company in accordance with the California

Urban Water Management Planning Act. With the use of MWM's DSS Model, the plan provided detailed information for 20 individual conservation measures, giving Park the flexibility to use this plan as a guide to implement additional measures to help increase water savings should the statewide drought worsen significantly. To determine Park's target per capita water use, baseline per capita water use was refined by determining Park's 2010 service area population using GIS techniques to align water service area and 2010 census block boundaries. (2014)

Demand Forecasts and Conservation Savings Evaluation for BAWSCA Members, California

Tess was on the project team that developed future water demand projections for agencies served by the San Francisco Public Utilities Commission. The project utilized the DSS software to model 27 different cities and water agencies that currently supply 2 million people. (2014)

Updated Water Use Efficiency Strategic Plan Report, Santa Clarita Valley Water Suppliers, California

Tess was project engineer on the conservation analysis for Santa Clarita Valley Water Suppliers, including 5 DSS Models (with large user evaluation). (2014)

Population Assessment (support of SB X7-7), Santa Clarita Valley Water Suppliers, California

Tess participated in the GIS review of SBX7-7 baseline populations in support of updating GPCD targets for Santa Clarita Valley Water Suppliers. (2014)

Water Conservation Audits, City of Burlingame, California

Tess assisted the City in complying with provisions of Commercial, Industrial, and Institutional (CII) Best Management Practices in California. Project tasks included CII site visits; quantifying site usage patterns; identifying potential water savings, conservation projects, and project paybacks for each site; and submitting an audit report to the city. (2014)

Drought Tracking Model and Technical Memorandum, Rancho Murrieta Community Services District, California

Tess assisted in developing a drought tracking model to help the CSD continuously monitor dry year conditions, water demands, supply levels, and communication with customers. This tool allowed the CSD, through their website, to provide monthly updates on the progress of customer response to the needed demand cutbacks and status on reservoir storage levels, as well as other community outreach. This project included developing a technical memorandum summarizing dry year status, tracking model parameters, and providing recommended actions. Also included was an overview of dry year conditions and forecasts, current and historical supplies and demands, the potential necessity for the augmentation of well supplies, and projected fiscal impacts. (2014)

Urban Water Management Plans, Northern California Region

As Project Manager and Engineer, Tess prepared Urban Water Management Plans for 15 cities and water districts in California. California Department of Water Resources (DWR) requires water suppliers to forecast their water supplies and demands through the year 2030. She was required to describe the water system and existing and planned sources of water available; develop projected water demands for residential, commercial and industrial users; evaluate water conservation measures; present water supply reliability data for normal and dry years; and quantify current and projected amounts of wastewater and potential recycled water uses. She also facilitated municipal and public meetings and presented plans to City Councils and Board of Directors for adoption. (2004-2010)

City of Davis Automatic Meter Reading (AMR) Feasibility Study, California

Tess was Project Engineer and Task Manager on this project, which entailed identifying client and project need. She facilitated stakeholder meetings; completed the existing system assessment report; researched industry standards; ascertained user requirements; identified data system, network, and communications changes; evaluated AMR system alternatives; and identified various funding options (e.g., grants, partnerships, financing). She also assisted the team in preparing and presenting a feasibility report. Tess managed client expectations throughout the project in the role of Client Services Manager for the City of Davis. (2004-2007)

United States Bureau of Reclamation (USBR) 5-Year Water Management Plans, Northern California - San Juan Water District, City of Roseville, El Dorado Irrigation District

Tess served as Project Manager and Project Engineer. She prepared USBR Five-Year Water Management Plans that described water system and existing and planned sources of water available. She evaluated water conservation best management practices for

urban and agricultural contractors, evaluated conservation best management practice exemptions, and offered plan implementation methodology. She presented reports to the City Council and Board of Directors for adoption. (2005-2010)

Regional Water Use and Conservation Analysis, El Dorado County Water Agency, California

As Project Manager, Tess wrote the technical memorandum for El Dorado County Water Agency (EDCWA) on behalf of El Dorado Irrigation District, Georgetown Divide Public Utility District, South Tahoe Public Utility District, and Grizzly Flats Community Services District. This memorandum was created in order to better address the recent legislation and increased concerns over the availability of regional water supplies. Historical, baseline, and projected per capita water use and water conservation savings was reported and compared to statewide, local, and other regional water system estimates. Data analyzed included historical, current and projected population; accounts by customer category; water consumption by customer category, including recycled water; water loss for years; total raw water diversions; and conservation best management practice interventions and water savings. (2009-2010)

Drought Probability Analysis, City of Folsom, California

Tess was Project Engineer and reviewed existing drought and flow evaluations for the American River. She gathered the historical flow records, reviewed relevant paleoclimatology research, evaluated the correlation of flow between neighboring watersheds, and used tree ring based river flow reconstructions. She also calculated probabilities of exceedance between varying parameters, like precipitation and snow pack water content through linear regression analysis. (2009)

Urban Water Conservation Best Management Practices Reporting and Cost-Effectiveness Assessment, City of Davis, California

As Project Manager, Tess reported the City of Davis conservation activity for 14 conservation Best Management Practices and conducted a cost-effectiveness assessment of three non-implemented BMP program plans to optimize water conservation measures for the City of Davis. (2007, 2009)

Commercial/Institutional (CI) Water Use Efficiency Training and Resources, Monterey, California

Tess was Project Engineer and coordinated a CI workshop to train 10 California American Water staff personnel on the procedures to audit commercial and institutional customers in their service area. The workshop consisted of two days of training, both in a classroom lecture setting and hands-on training at a commercial site. She worked in an advisory capacity and was available to answer questions or research information pertaining to conducting water audits. She created spreadsheet tools to calculate water usage and allocations by process water use (i.e., toilets, cooling towers, etc.), cost-benefit analysis (including financial, water, wastewater, gas, and electricity considerations) for various water conserving fixture recommendations and template CII Water Audit Report. (2008-2009)

Selected Publications and Papers

"Consensus through Collaboration: A Shared Vision Approach to Drought Preparedness," Water Smart Innovations, Las Vegas, Nevada, October 2008.

"Recent Advances in Drought Planning," Intermountain Section AWWA Annual Conference, St. George, Utah, September 2008.

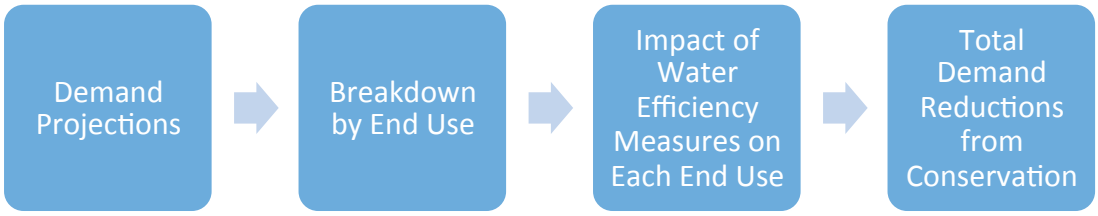
Certification and Training

2005 Engineer-In-Training, State of California, License No. 122517

Relevant Positions Held

Maddaus Water Management, Water Resources Engineer	2014-Present
Brown & Caldwell (Sacramento Office), Principal Engineer	2004-2010
Duke University, Research Assistant	2003-2004

Appendix 2: Description of the DSS Model



The DSS Model prepares long-range, detailed demand projections. The purpose of the extra detail is to enable a more accurate assessment of the impact of water efficiency programs on demand. A rigorous modeling approach is especially important if the project will be subject to regulatory or environmental review.

The DSS Model is an end-use model that breaks down total water production (water demand in the service area) to specific water end uses. The model uses a bottom-up approach that allows for multiple criteria to be considered when estimating future demands, such as the effects of natural fixture replacement, plumbing codes, and conservation efforts. The DSS Model may also use a top-down approach with a utility prepared water demand forecast.

To forecast urban water demands using the DSS Model, customer demand data is obtained from the water agency being modeled. The demand data is reconciled with available demographic data to characterize the water usage for each customer category in terms of number of users per account and per capita water use. The data is further analyzed to approximate the split of indoor and outdoor water usage in each customer category. The indoor/outdoor water usage is further divided into typical end uses for each customer category. Published data on average per-capita indoor water use and average per-capita end use is combined with the number of water users to calibrate the volume of water allocated to specific end uses in each customer category. In other words, the DSS Model checks that social norms from end studies on water use behavior (e.g., flushes per person per day) are not exceeded.

The DSS Model evaluates conservation measures using benefit cost analysis with the present value of the cost of water saved ($/Acre-Foot). Benefits are based on savings in water and wastewater facility operations and maintenance (O&M). The figures above and to the left illustrate the processes for forecasting conservation water savings, including the impacts of fixture replacement due to plumbing codes and standards already in place.

The DSS Model has been used for practical applications of conservation planning in over 230 service areas representing 20 million people, including extensive efforts nationally in California, Colorado, Hawaii, Utah, Georgia, Florida, North Carolina, Oregon, Ohio, Texas, and internationally in Australia, New Zealand, and Canada.

ManageWater Consulting, Inc.
430 Nimitz Ave., Redwood City, California, 94061 650-722-7841

MADDAUS WATER MANAGEMENT INC.
105 Zephyr Place, Danville, CA 94526 (925) 831-0194

November 30, 2015

Mid-Peninsula Water District
3 Dairy Lane
Belmont, California 94002

Attention: Ms. Tammy Rudock, General Manager

Subject: Letter of Transmittal for Proposal for the Mid-Peninsula Water District 2015 Urban Water Management Plan

Dear Ms. Rudock:

ManageWater (MW) and Maddaus Water Management (MWM), the Water Management "Team", are pleased to submit this proposal for consulting services for the Mid-Peninsula Water District (MPWD)'s 2015 Urban Water Management Plan. As you know these plans are required of larger water providers in California every five years. Our Team looks forward to working with MPWD to prepare and update MPWD's 2015 UWMP.

Our Team has the project management, technical, and regulatory experience that MPWD needs to prepare the 2015 Plan. Together, we have over 75 years of experience in the water business with water efficiency at the forefront of our work. Our collaborative work style and track record are ideal for your needs. We have worked with BAWSCA agency clients for almost 15 years and have in-depth knowledge about the San Francisco Public Water Utilities (SFPUC) system. We are very familiar with the SFPUC regional system, seasonal operations, water supply management, and the regional system demand. Based on our recent work with Mid-Peninsula staff and data through the BAWSCA project in 2014 we are confident we can do an excellent job in a cost-effective manner. Marty Laporte and Michelle Maddaus have worked as a team together for over 15 years since the development of the 2000 Stanford Water Recycling and Master Plan.

Our Team includes five professional staff - two staff with advanced degrees, a registered professional engineer, a software engineer, and two support staff. Marty Laporte, MS., ManageWater Consulting, Inc.'s. Principal, has 28 years experience managing water resources and compliance programs. As a BAWSCA Water Quality Committee Chair, technical committee Vice Chair, a BAWSCA Board member, and Stanford University's representative for 22 years, Ms. Laporte has extensive experience managing programs, projects, teams, and preparing multi-disciplinary reports.

Ms. Michelle Maddaus, MBA, President of Maddaus Water Management, is a professional engineer, has over 15 years of impressive experience that includes preparing Urban Water Management Plans since 2000. Ms. Maddaus has worked with all BAWSCA agencies, including MPWD, to prepare the Demand Support System (DSS) models that all agencies are using for Water demand management. Mr. Chris Matyas, with Maddaus Water

Management, is a software engineer, and can be credited with greatly improving and simplifying the DSS Model interface for end users as well as his expertise with MS Excel as well as other more complex software databases. Tess Kretschmann, with Maddaus Water Management, is a Staff Engineer, with 9 years of professional technical experience. Andrea Pacheco, with Maddaus Water Management, is a Report Editor. Ms. Kretschmann and Ms. Pacheco will both be supporting the MW-MWM Team to develop the 2015 UWMP update for MPWD.
The **key features** of our project team are:

- Thorough understanding of Urban Water Management Plan requirements including what is new for 2015.
- Proven management record of projects and interdisciplinary teams.
- Experience in the design and evaluation of water conservation programs.
- Experience in working with per capita use targets.
- Productive working relationships with BAWSCA and SFPUC.
- Highly recommended by current and past clients.

Our approach to your project is to start with the 2010 UWMP document, update tables for 2015 conditions, update the material to reflect CA Department of Water Resources (DWR) comments on the 2010 plan (if comments were submitted), extend selected tables to 2040 as required, add new tables to address the per capita use targets and other material as indicated by the as yet to-be-finalized 2015 UWMP DWR Guidebook.

The **benefits** of selecting our team for this important assignment are:

- 75+ years of relevant experience
- Guaranteed availability of senior staff
- Experience gained through preparation UWMPs
- Proven track record of satisfied clients
- Demonstrated technical ability to produce a quality plan

As we are small firms we have been careful to not get over committed to preparing multiple 2015 UWMPs. The schedule will be carefully managed as there are only three months to prepare an administrative draft of plans for Mid-Peninsula staff review. The MPWD 2015 UWMP is one of the few plans we targeted and we look forward to being able to deliver a quality product in a short amount of time. ***We make your success our primary goal.***

We sincerely hope to have met the requirements set forth in your Request for Proposal. We look forward to meeting with you during the selection process; in the meantime, if you have any questions, please feel free to contact Marty or Michelle. Our contact information is listed on the letterhead and my email is ManageWaterNow@gmail.com and Michelle's is michelle@maddauswater.com.

Sincerely,

Marty Laporte

Marty Laporte
Principal, ManageWater Consulting, Inc.

Enclosures:

Five copies of Proposal

MID-PENINSULA WATER DISTRICT

AGENDA ITEM NO. 7.A.

DATE: December 16, 2015

TO: Board of Directors

FROM: Tammy Rudock, General Manager

SUBJECT: DROUGHT AND WATER CONSERVATION PROGRESS REPORT

RECOMMENDATION

Receive progress report on drought and water conservation activities.

BACKGROUND

June 1, 2015 was the start of the SWRCB's measurement period for the 2015/2016 statewide water conservation goals. The measurement period ends February 29, 2016, and the MPWD system's conservation goal is 20% when compared to 2013 water consumption.

DISCUSSION

The report due December 15th to the SWRCB will be timely submitted. November's water consumption was 77,733 units—**the lowest in MPWD's history for November since 1964!** The reduction (compared with 2013) measured -27.0% and the R-GPCD was 61.6%. *By comparison, the November 2014 PERCENT CHANGE was -18.6% and the R-GPCD was 71.*

MPWD's cumulative water savings (since tracking started on June 1, 2015) = -28.1%, which is 8.1% greater than the MPWD system conservation goal of 20%.

2015/2016 MONTH	*2015/2016 UNITS*	*2013 UNITS*	*PERCENT CHANGE**	*CUMULATIVE WATER SAVINGS**	*2015/2016 R-GPCD*	*2013 R-GPCD*
June	103,863	150,614	-31.0%	-31.0%	82.3	122.6
July	105,639	156,081	-32.3%	-31.7%	81.1	122.9
August	106,832	155,788	-31.4%	-31.6%	82.0	122.7
September	105,459	145,551	-27.5%	-30.6%	83.6	118.5
October	98,345	122,117	-19.5%	-28.3%	75.5	96.2
November	77,733	106,535	-27.0%	-28.1%	61.6	86.7
December		94,062				74.1
January		84,202				66.3
February		86,478				75.4

**Compared to 2013.*

The R-GPCD (Residential-Gallons Per Capita Day) calculations are highlighted above in yellow. The SWRCB performance standard for indoor use is 55GPCD. *(Note: For 2015/2016, the SWRCB formula*

for calculating the R-GPCD included MPWD factors: 85% residential use of total production, and 2014 population projection—26,730—from 2010 Urban Water Management Plan.)

MPWD started tracking water waste complaints in July 2014. All have been investigated and resolved through communications and education.

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTAL
2015	2	0	5	12	6	6	12	5	5	3	1		58
2014	-	-	-	-	-	-	3	6	3	4	7	0	23

The SWRCB statewide Emergency Conservation Regulation Update and Media Release entitled "California's Cumulative Water Savings Continue to Meet Governor's Ongoing Conservation Mandate," both dated December 1, 2015, are attached for information.

BACKGROUND

The following Calendar Year 2014 and 2015 tables reflect MPWD's water system purchases in units (1 unit = 748 gallons), percentage change comparison, and cumulative average savings (highlighted in blue).

CALENDAR YEAR 2015 - JANUARY THROUGH MAY

2015 MONTH	2015 UNITS	2014 UNITS	2013 UNITS	PERCENT CHANGE*	CUMULATIVE WATER SAVINGS*	2015 R-GPCD	2014 R-GPCD	2013 R-GPCD
January	82,360	102,910	84,202	-2.2%	-2.2% / -15.1%**	64.9	81.1	66.3
February	79,782	73,221	86,478	-7.7%	-5.0% / -14.5%	69.6	63.9	75.4
March	102,964	89,152	106,663	-3.5%	-4.5% / -13.7%	81.1	70.2	84.0
April	91,491	96,019	120,265	-23.9%	-9.3% / -14.4%	74.5	78.2	97.9
May	97,806	126,934	155,736	-37.2%	-14.9% / -15.8%	77.1	100.0	122.7

**Compared to 2013. **Cumulative total since February 2014.*

CALENDAR YEAR 2014 - FEBRUARY THROUGH DECEMBER

2014 MONTH	2014 UNITS	2013 UNITS	PERCENT CHANGE*	CUMULATIVE WATER SAVINGS*	2014 R-GPCD	2013 R-GPCD
February	73,221	86,478	-15.3%	-15.3%	64	75
March	89,152	106,663	-16.4%	-15.9%	70	84
April	96,019	120,265	-20.2%	-17.3%	78	98
May	126,934	155,736	-18.5%	-17.6%	100	123
June	139,729	150,614	-7.2%	-15.5%	114	123
July	134,669	156,081	-13.7%	-15.2%	106	123
August	128,924	155,788	-17.2%	-15.5%	102	123
September	118,284	145,551	-18.7%	-15.9%	96	119
October	109,652	122,117	-10.2%	-15.3%	92	96
November	86,670	106,535	-18.6%	-15.6%	71	87
December	72,835	94,062	-22.6%	-16.2%	57	74

**Compared to 2013.*

The R-GPCD (Residential-Gallons Per Capita Day) calculations are highlighted above in yellow. The SWRCB performance standard for indoor use is 55GPCD. *(Note: For Calendar Years 2014 and 2015 tracking, the SWRCB formula for calculating the R-GPCD included MPWD factors: 85% residential use of total production, and population from 2010 Urban Water Management Plan—26,030.)*

Attachments: SWRCB statewide Emergency Conservation Regulation Update dated December 1, 2015
SWRCB Media Release dated December 1, 2015

Emergency Water Conservation Regulation Update

Office of Research, Planning, and Performance

December 1, 2015

CALIFORNIA Water Boards

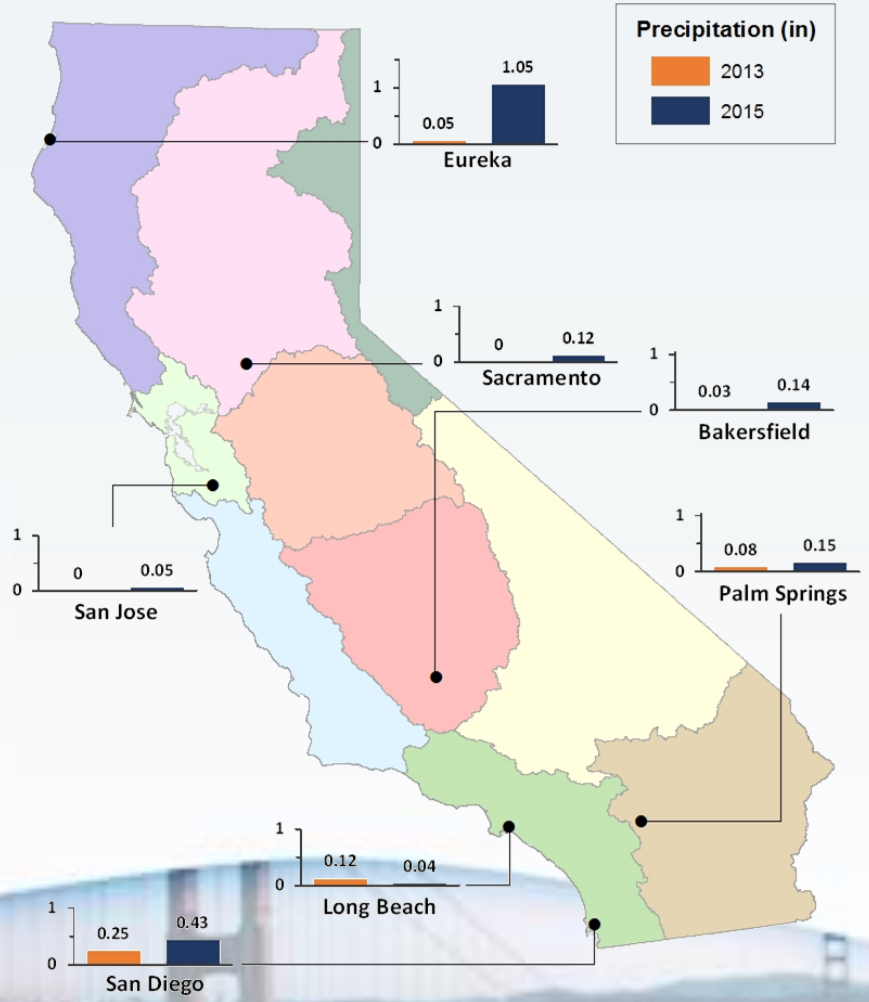
Status of Implementation

- Water production numbers collected from June 2014 through October 2015 (17 months)
- Fifth month with statewide goal to reduce total potable urban water use by 25 percent
- 409 (of 411) suppliers submitted October reports
- Enforcement actions taken based on June – October supplier compliance

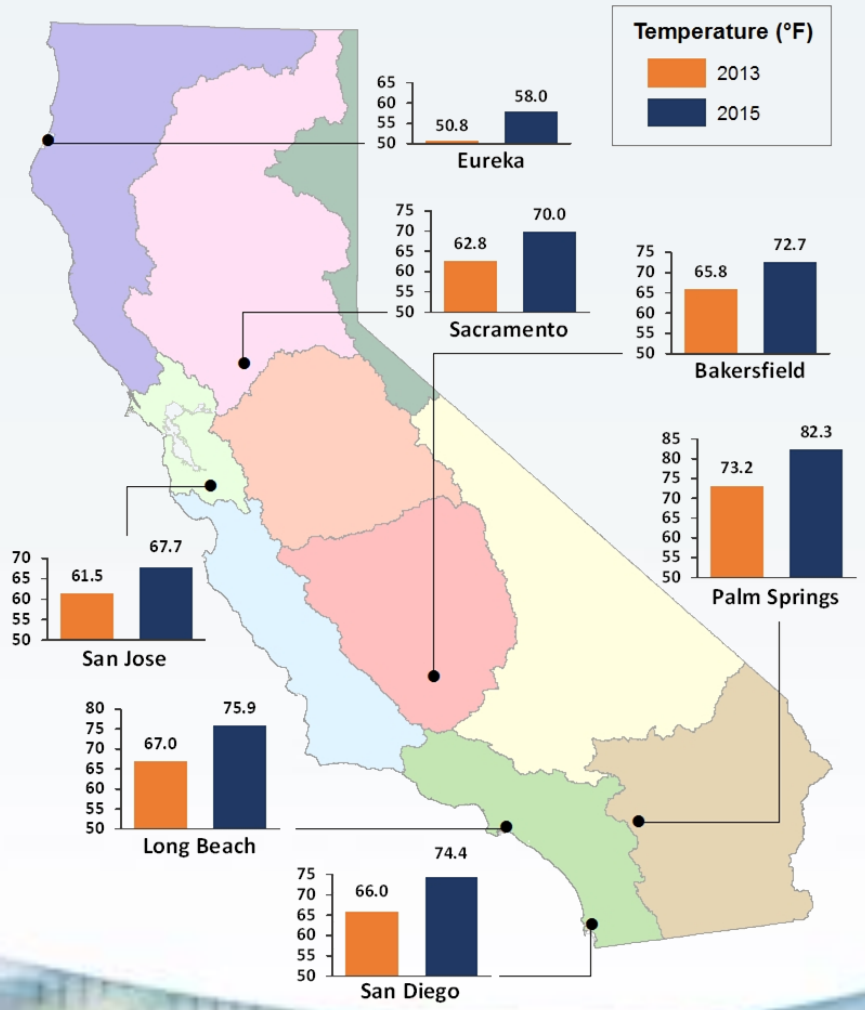
October Weather Conditions

(Select Cities)

Precipitation



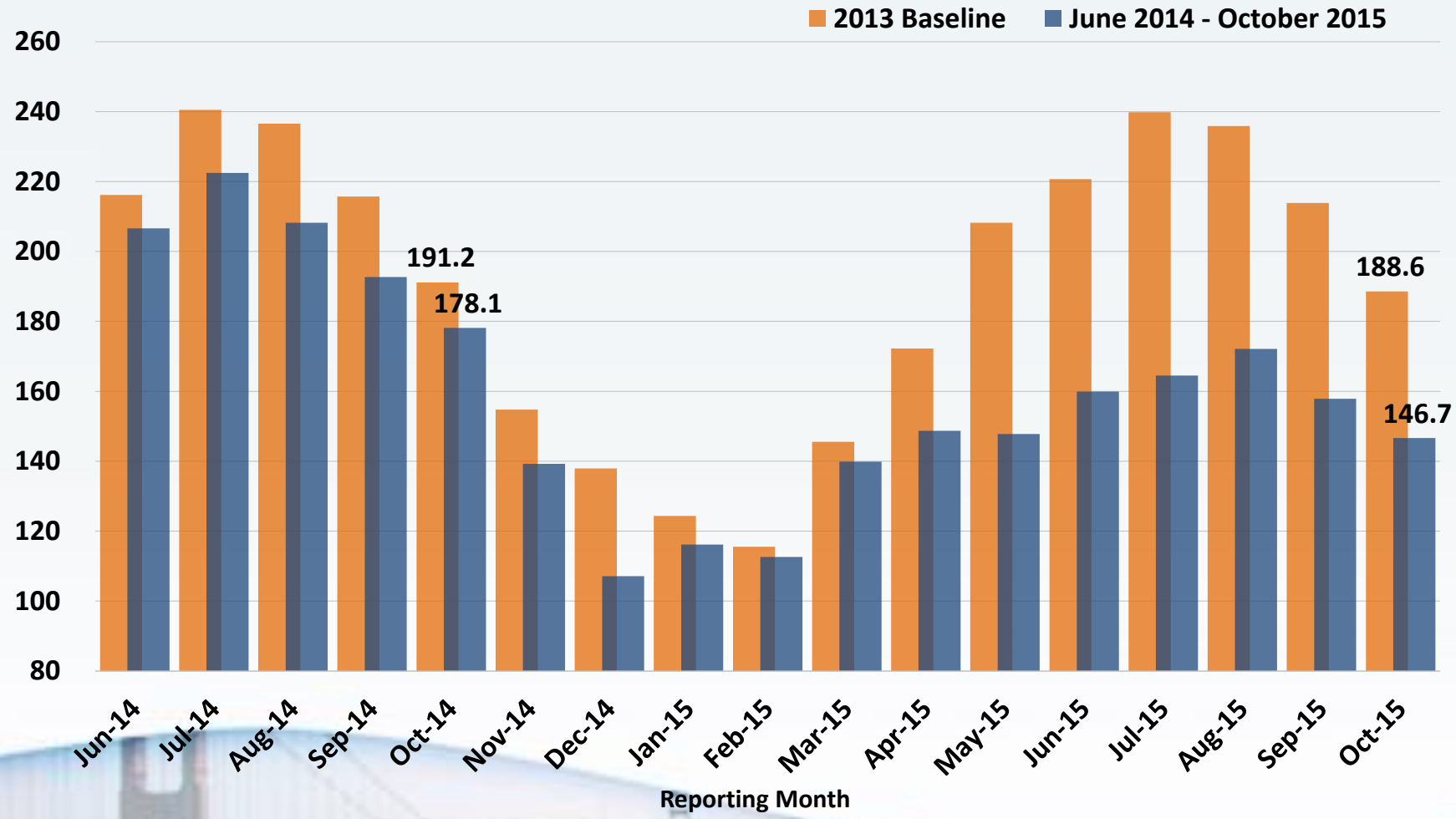
Temperature



Statewide, October 2015 was hotter and wetter than October 2013

Data Source: U.S. Climate Data http://www.usclimatedata.com/

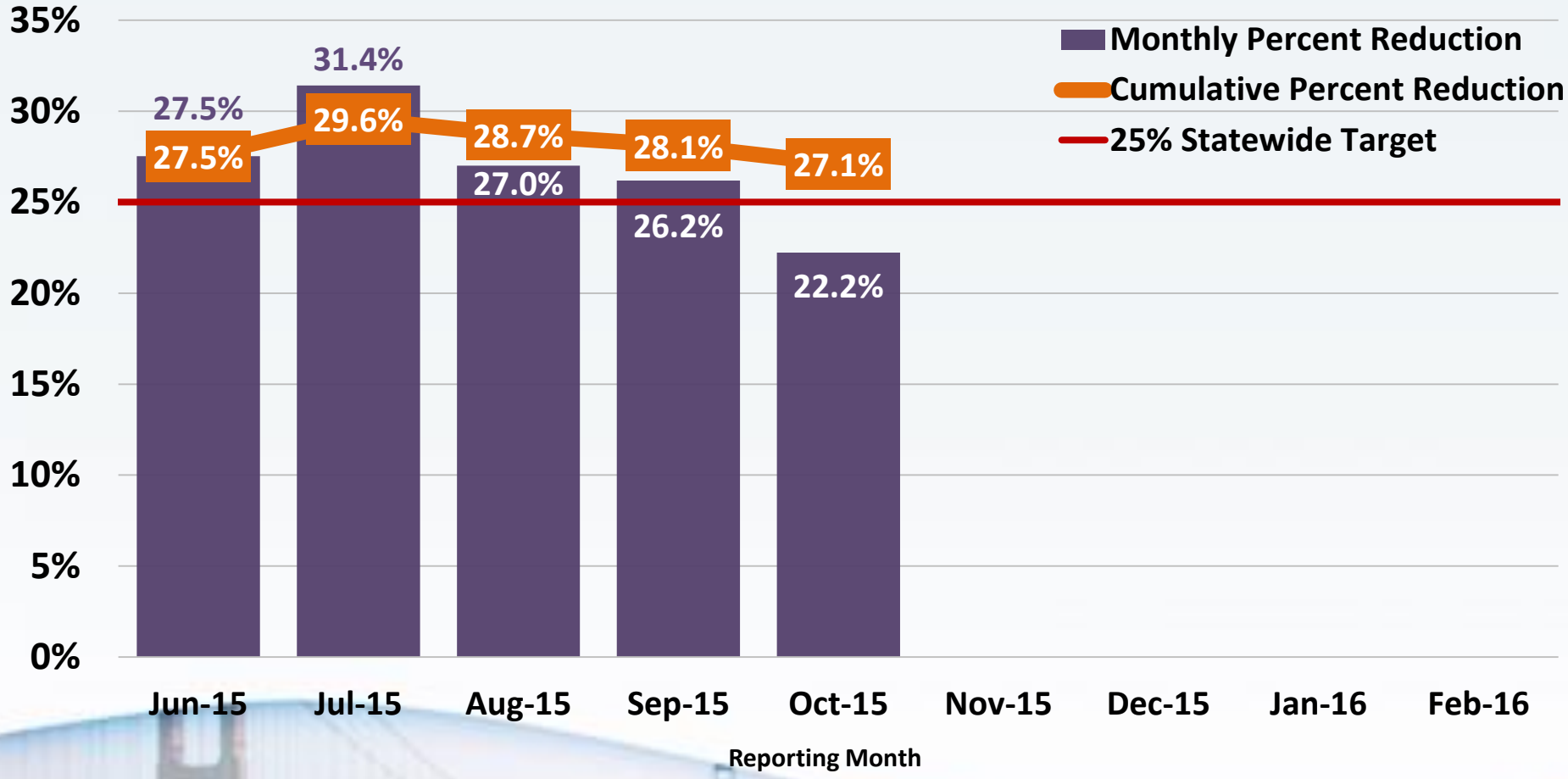
Statewide Water Conservation Results Water Production June 2014 – October 2015 (Billion Gallons)



October 2015 savings (41.9 billion gallons) is three times greater than October 2014 savings (13.0 billion gallons)

Statewide Water Conservation Results Water Production Percentage Reduction

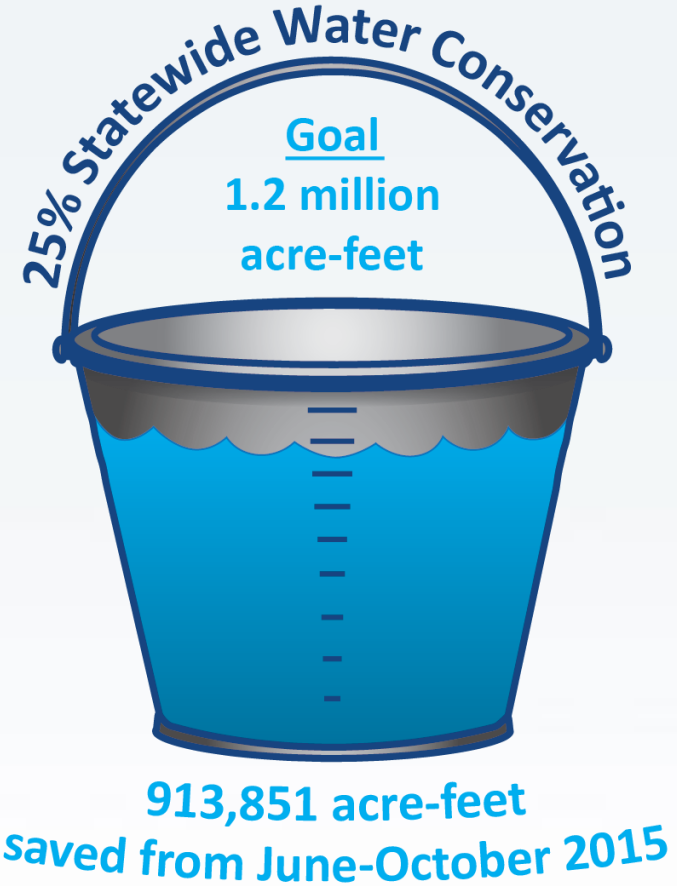
(Compared to 2013)



October 2015 savings (41.9 billion gallons; 129,660 acre-feet) brings statewide cumulative savings to 27.1%

Cumulative Savings (June - October 2015)

- 913,851 acre-feet (297.8 billion gallons) of water saved
- This is 76% of savings goal
- Savings is enough to provide 4.6 million Californians with water for one year



October 2015 Residential Gallons per Capita per Day

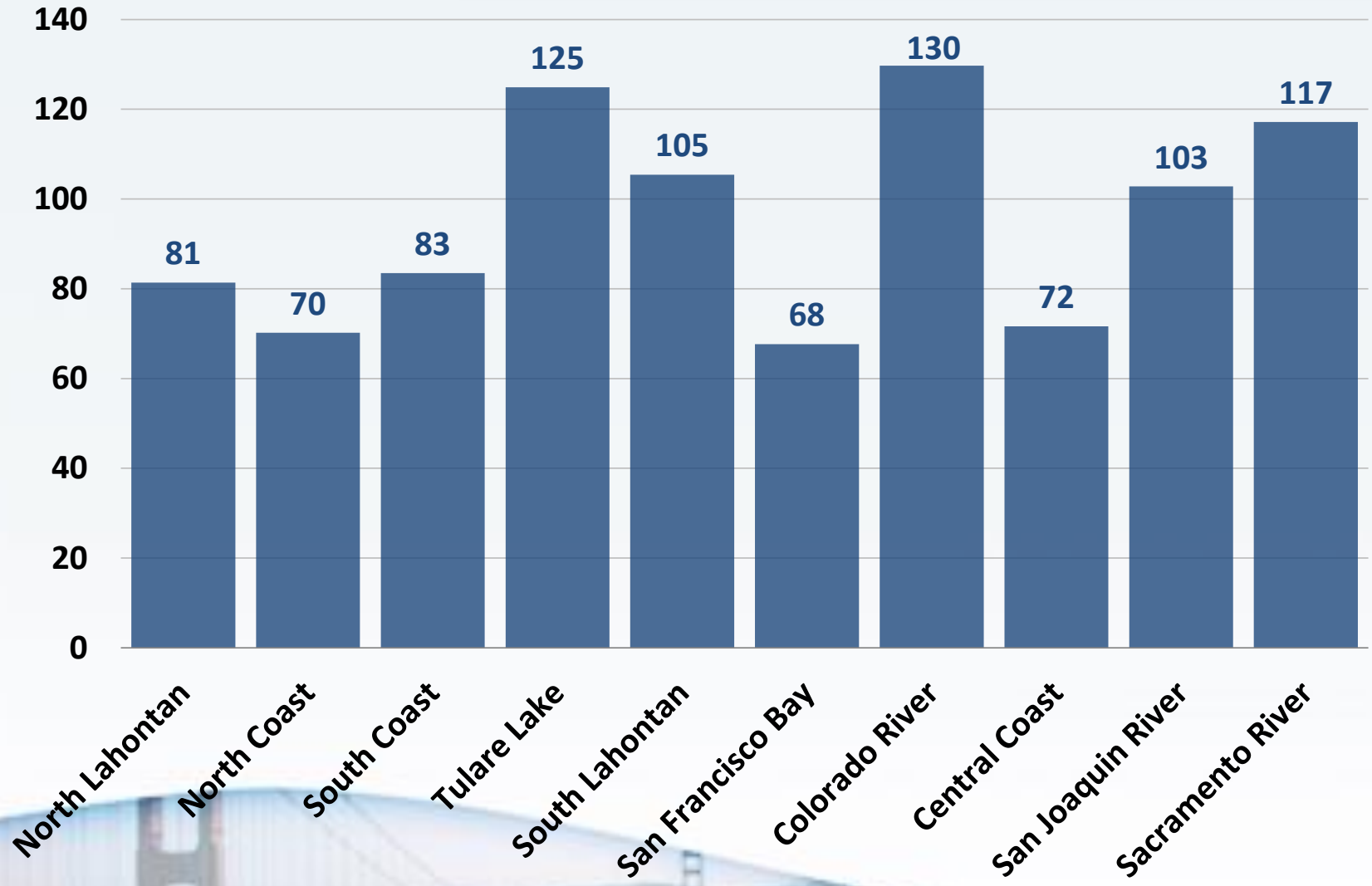
- Average statewide October 2015 R-GPCD = 87
  - Lowest supplier R-GPCD = 34
  - Highest supplier R-GPCD = 312
- 35 suppliers report October R-GPCD less than 55
  - Suppliers represent 2.6 million people
  - 55 GPCD is the performance standard for **indoor** use

October R-GPCD Annual Trend by Hydrologic Region

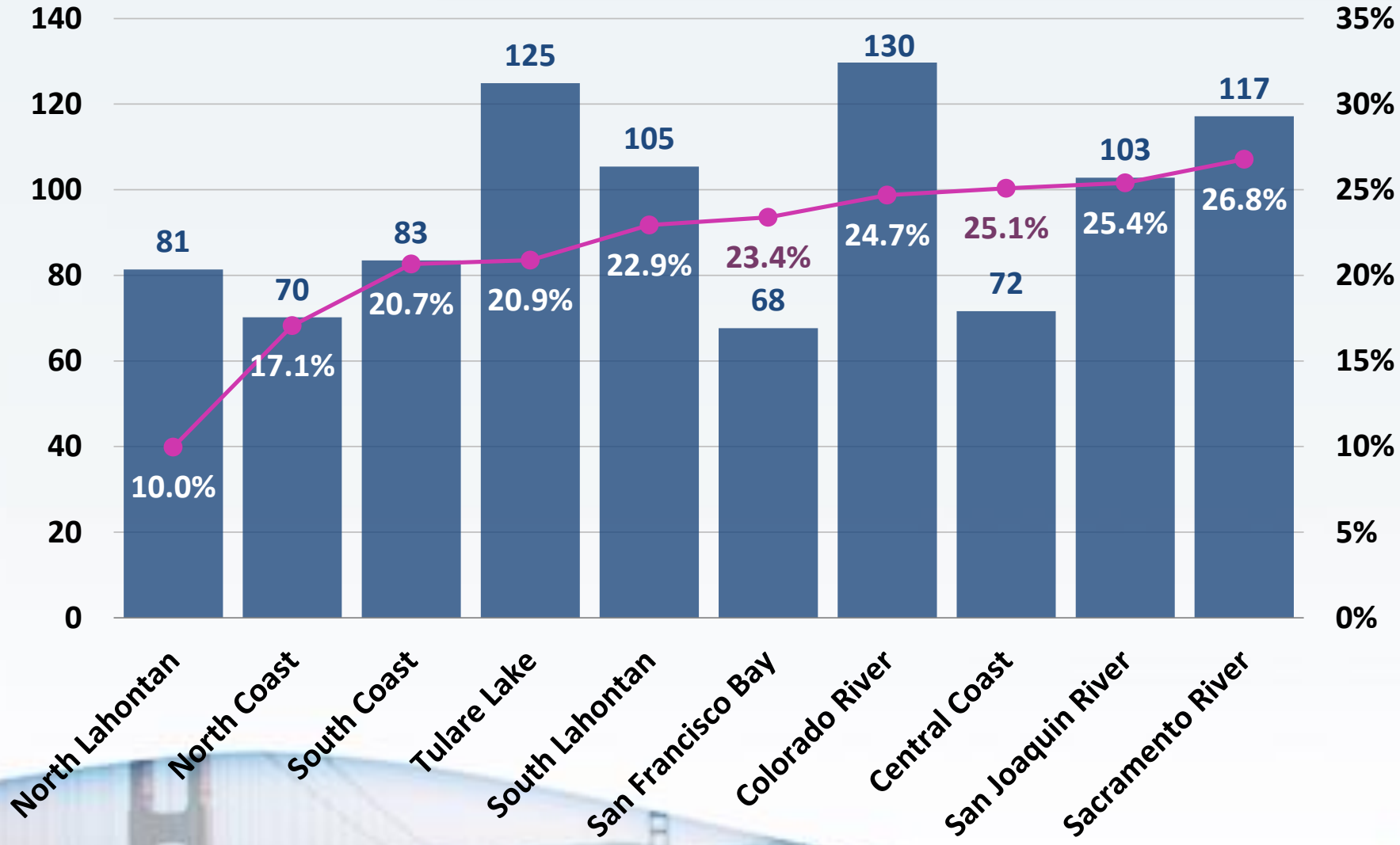
Hydrologic Region	Oct-13*	Oct-14	Oct-15	Annual Trend
Central Coast	97	83	72	
Colorado River	179	169	130	
North Coast	86	67	70	
North Lahontan	93	94	81	
Sacramento River	160	130	117	
San Francisco Bay	90	77	68	
San Joaquin River	144	129	103	
South Coast	106	103	83	
South Lahontan	134	133	105	
Tulare Lake	159	148	125	
Statewide	**113**	**105**	**87**	

***Estimated based on October 2014 percent residential use and population**

October 2015 R-GPCD and Conservation



October 2015 R-GPCD and Conservation

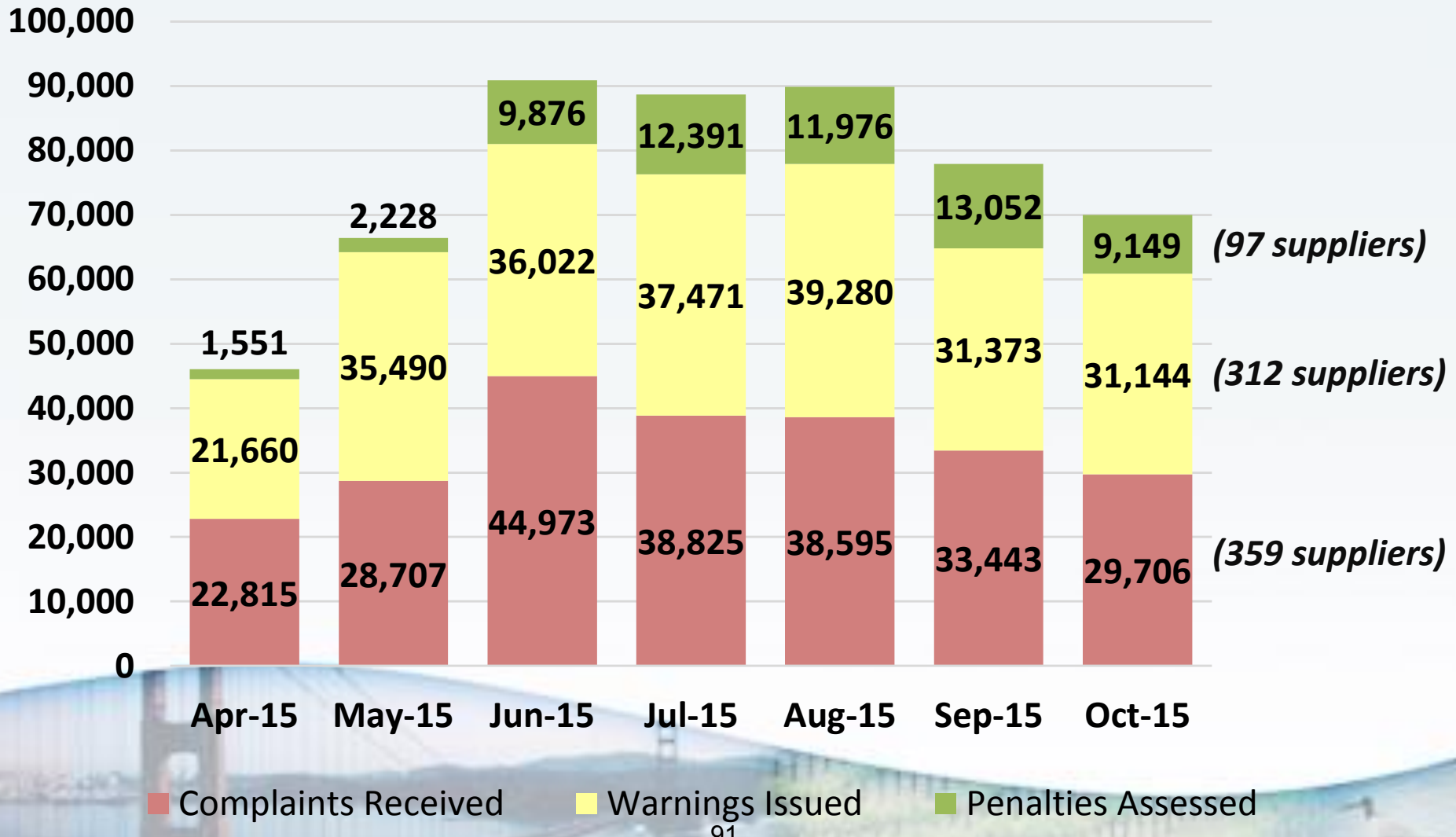


Noteworthy Supplier Achievements

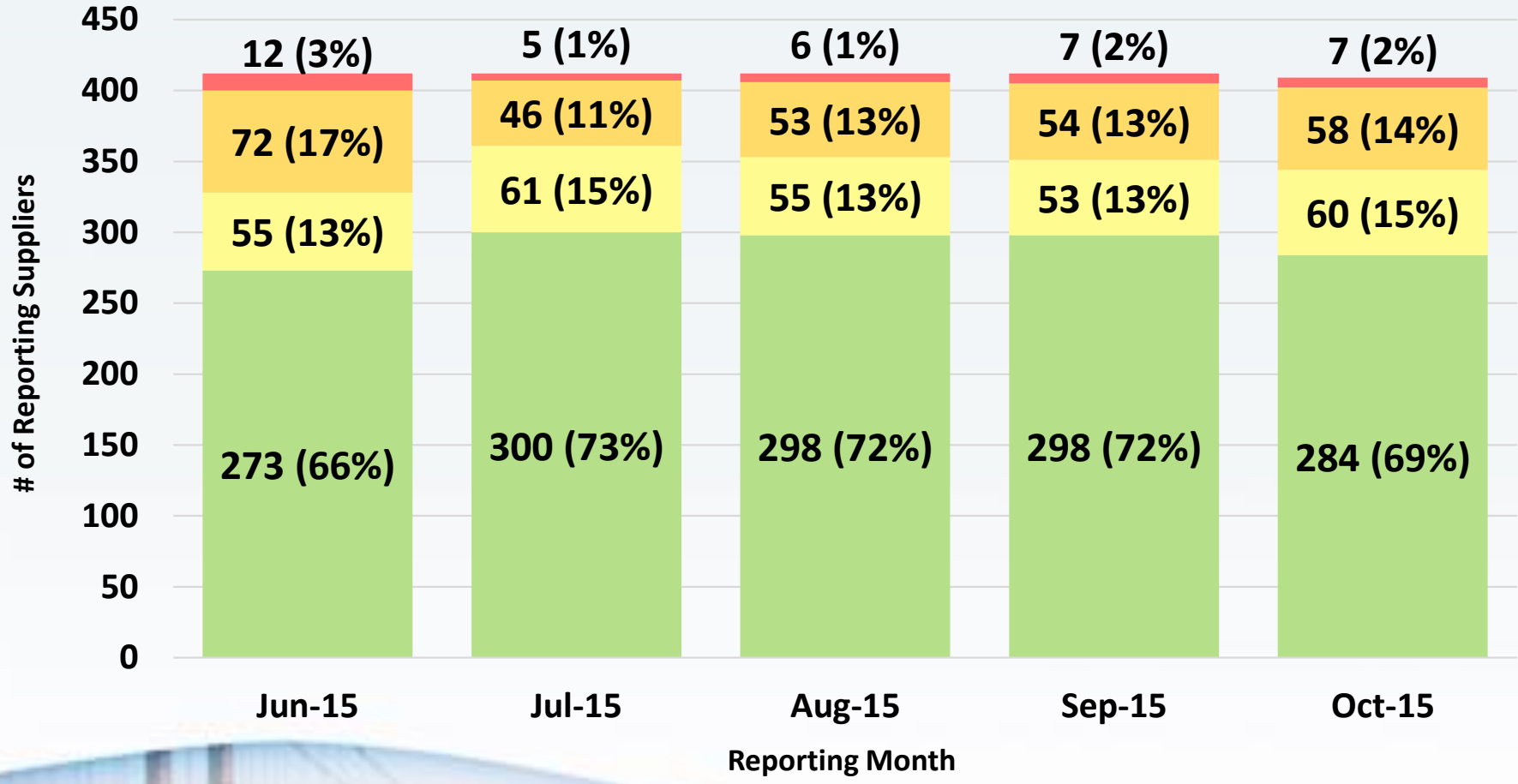
Suppliers, with conservation standard of 24 percent or greater, exceeding their conservation standard by more than 10 percentage points from June – October 2015.

- Contra Costa Water District
- Valencia Water Company
- Pleasanton City of
- California Water Service Company Livermore
- Lake Hemet Municipal Water District
- Golden State Water Company Simi Valley
- Golden State Water Company Claremont
- Tuolumne Utilities District
- Bella Vista Water District
- Montecito Water District
- Del Oro Water Company
- California Water Service Company Antelope Valley

Supplier Enforcement Actions Taken
April – October 2015



Number of Suppliers Reporting by Compliance Priorities June – October 2015



Water Board Enforcement Actions Taken Since June 2015

Office of Enforcement has issued:

- 72 Warning Letters
- 104 Informational Orders
- 7 Alternative Compliance Orders
- 9 Conservation Orders
- 4 Administrative Civil Liability Complaints

Performance for Suppliers with Conservation Orders (9)

- For June through October, 6 out of 9 suppliers show upward trends for cumulative percent savings
- However, *only 1 supplier* is meeting conservation standard
- 8 out of 9 suppliers are missing cumulative percent savings and volumes by
    - Between 5 and 25%
    - Between 30 and 370 million gallons
- Supplier progress will continue to be tracked over the coming months

Next Steps

- December 1 – Small supplier reporting tool live

  http://www.drinc.ca.gov/dnn/Applications/PublicWaterSystems/SmallWaterSupplierConservationReporting.aspx

- December 7 – Public workshop on potential extension/modification of the emergency regulation

- December 15 - Small supplier reports due

Media Release

California's Cumulative Water Savings Continue to Meet Governor's Ongoing Conservation Mandate

Workshop to renew regulations set for Dec. 7
Deadline for small water system reporting is Dec. 15

FOR IMMEDIATE RELEASE
Dec. 1, 2015

Contact: George Kostyrko
gkostyrko@waterboards.ca.gov

SACRAMENTO – Californians have reduced water use by 27.1 percent in the five months since emergency conservation regulations took effect in June, continuing to meet Governor Edmund G. Brown Jr.'s 25 percent mandate despite a decline in the statewide water-savings rate for October.

In October, when outdoor water use – and the opportunity for significant savings – typically drops off from the hot summer months, the statewide conservation rate was 22.2 percent, down from 26.4 percent in September. Adding to the challenge, October brought temperatures that were well above normal for most of the state. Nonetheless, average statewide water use declined from 97 gallons per person per day in September to 87 in October.

"We anticipated a dip in the conservation rate for October, but it is not because people are losing interest--they actually did quite well considering how unusually hot it was in October," said Felicia Marcus, chair of the State Water Resources Control Board. "It's harder to keep the percentages up in the fall and winter when little outdoor watering takes place. That's why the savings over the summer were so important. Now, we need to keep finding ways to save water. While El Nino storms *may* bring significant rain this winter, the depth of our drought and the uncertainty of the amount, type, and location of precipitation means we have to continue conserving every way we can. In other words, unless we get a ton of snow in

Water Conservation Quick Links

Factsheet: October by the Numbers

June 2014-October 2015 data set

Cumulative Savings and Conservation Compliance for October

October Savings by Region

Supplier Enforcement Statistics

the Sierras that lasts through April, every drop saved today is one we'll be glad we have tomorrow."

A public workshop to discuss concepts for a renewed urban water conservation regulation has been set for Dec. 7. The current drought emergency water conservation regulation adopted by the board in May expires in February 2016. Last month, the Governor issued an additional Executive Order giving the State Water Board authority to extend and revise the emergency water conservation regulations. State Water Board is soliciting public comment on what the next iteration of the regulation will look like. Following public review and comment, the Board tentatively plans to adopt the updated regulations by late January or early February.

At the same time, the State Water Board is reminding small water suppliers (those with 3,000 or fewer customers) that they are required to report water use by December 15. While large urban suppliers have been required to report water conservation information every month, small water suppliers must report only once. The regulations state that small water suppliers must limit outdoor landscape irrigation to no more than two days per week or reduce total potable water production by 25 percent as compared to 2013. The full report of information submitted by small water suppliers is expected to be available by mid-January 2016 here.

The State Water Board tracks water conservation for each of the state's urban water suppliers on a monthly basis, but compliance with individual water supplier conservation requirements and the statewide 25 percent mandate is based on cumulative savings. Cumulative tracking means that conservation savings will be added together from one month to the next and compared to the amount of water used during the same months in 2013.

October Conservation Data

- For June through October, the cumulative statewide reduction was 27.1 percent, compared with the same months in 2013. That equates to 913,851 acre-feet (297.8 billion gallons), or 76 percent of the 1.2 million acre-feet savings goal to be achieved by the end of February 2016.
- Statewide water savings for October was 22.2 percent (128,901 acre-feet or 41.9 billion gallons), a decrease from September's 26.2 percent savings. See fact sheet here.
- Statewide, the average water use for October was 87 residential gallons per capita per day (R-GPCD), a decrease from the 97 residential gallons per capita per day reported for September.
- Although October 2015 had the lowest level of monthly savings since June 2015, suppliers still saved more than three times the volume of water saved in October 2014.

- The last five months have been the hottest on record and October was no exception, with higher average temperatures than October 2013.

Enforcement Data

- Suppliers reported 69,999 compliance and enforcement actions taken in October, a decrease from the 77,868 actions suppliers reported in September. See the enforcement statistics for more information.
- The Office of Enforcement continues to work with suppliers that have not met their conservation standard. Since June, the State Water Board has issued:
    - Nine conservation orders;
    - 104 information orders;
    - 72 warning letters;
    - Four Administrative Civil Liability Complaints, and
    - Seven alternative compliance orders.

October saw a decrease in compliance by water suppliers. Of the 409 suppliers reporting for October, 69 percent met or were within one percentage point of meeting their conservation standard and 15 percent were between one and five percentage points of meeting their standard. For more information, visit the enforcement page.

Conservation Must Continue Through Winter

Residential water users are urged to keep up their efforts to conserve through the winter months. That includes complying with urban water supplier directives to switch to watering schedules of once a week as well as a prohibition against watering during a rain event and 48 hours directly following a rain event.

“We can’t know when the drought will end, so we have to keep saving every drop we can,” Chair Marcus said. “Predictions are just that, predictions. Having the odds in our favor, can give us hope, but not the certainty we need to relax our efforts.”

Conservation programs put in place during the late spring and early summer months by most of the state’s water suppliers have yielded dramatic reductions in water use and a reexamination of personal water-use habits. In addition to many effective local programs, state-funded turf removal and toilet replacement rebates are also now available. Information and rebate applications are available at: www.saveourwaterrebates.com/.

Background

In his April 1 Executive Order, Gov. Brown mandated a 25 percent water use reduction for cities and towns across California.

In May, the State Water Board adopted an emergency regulation requiring an immediate 25 percent reduction in overall potable urban water use. The regulation uses a sliding scale for setting conservation standards, so that communities that have already reduced their R-GPCD through past conservation will have lower mandates than those that have not made such gains since the last major drought. In his most recent Executive Order issued Nov. 13, the Governor directed the State Water Board to extend, and potentially modify, its drought emergency water conservation regulation if drought conditions persist through January 2016.

Each month, the State Water Board compares every urban water supplier's water use with their use for the same month in 2013 to determine if they are on track for meeting their conservation standard. Local water agencies determine the most cost effective and locally appropriate way to achieve their standard. The State Water Board will work closely with water suppliers to implement the regulation and improve local efforts that are falling short.

California has been dealing with the effects of an unprecedented drought. To learn about all the actions the state has taken to manage our water system and cope with the impacts of the drought, visit Drought.CA.Gov. Every Californian should take steps to conserve water. Find out how at SaveOurWater.com.

###

MID-PENINSULA WATER DISTRICT

AGENDA ITEM NO. 7.B.

DATE: December 16, 2015

TO: Board of Directors

FROM: Tammy Rudock, General Manager

SUBJECT: DISCUSS ORDINANCE NO. 115 REGARDING THE BAWSCA REGIONAL WATER EFFICIENT LANDSCAPING ORDINANCE, EFFECTIVE FEBRUARY 1, 2016

RECOMMENDATION

Discuss Ordinance No. 115 regarding the BAWSCA regional Water Efficient Landscaping Ordinance (WELO), effective February 1, 2016.

FISCAL IMPACT

None at this time. Staff will work with city representatives in Belmont, San Carlos, and County of San Mateo on the enforcement process and related fee (if required).

BACKGROUND

Governor Brown's Drought Executive Order of April 1, 2015 (EO-B29-15) directed the Department of Water Resources (DWR) to update the State's Model Water Efficient Landscape Ordinance (MWELO) through expedited regulation. The revised DWR MWELO was approved by the California Water Commission on July 15, 2015, and the new regulations were finalized and published on September 15, 2015. Local agencies are responsible for adopting and reporting on a water efficient landscape ordinance.

This new ordinance requires all land-use agencies, such as cities and counties, to adopt a water efficient landscape ordinance that, at a minimum, meets the requirements of the CA MWELO prepared by DWR. DWR's model ordinance takes effect in those cities and counties that fail to adopt their own. Cities acting on their own are required to adopt their updated WELO by December 1, 2015. However, agencies adopting a regional ordinance have a deadline of February 1, 2016.

Summary of major changes in DWR's MWELO:

- Reduction of the size threshold from 2,500 square feet of landscaping to 500 square feet of landscaping for both commercial and residential property.
- The maximum applied water allowance (MAWA) has been lowered from 70% of

the reference evapotranspiration (ETo) to 55% for residential landscape projects, and to 45% of ETo for non-residential projects. This water allowance reduces the landscape area that can be planted with high water use plants such as cool season turf.

- Allows the irrigation efficiency to be entered for each area of the landscape. The site-wide irrigation efficiency of the previous ordinance (2010) was 0.71; for the purposes of estimating total water use, the revised MWELO defines the irrigation efficiency (IE) of drip irrigation as 0.81 and overhead irrigation and other technologies must meet a minimum IE of 0.75.
- State reporting requirements.
- Changes to the landscape and irrigation design plans.
- Option to irrigate with greywater.
- Expanded definitions section with new terms and concepts.

DISCUSSION

The DWR MWELO effective January 1, 2010, became the MPWD's ordinance by default. The previous BAWSCA regional landscape ordinance was discussed during a public hearing on February 25, 2010, but the Board delayed any action because of enforcement coordination concerns and asked that (previous) staff bring back an ordinance within 60 days, which never occurred. Current staff re-introduced the effort on August 22, 2013, but the issue of enforcement still needed to be resolved and the Plumbing Code was undergoing a major revision for indoor water efficiency standards effective January 1, 2014. Then the SWRCB got more involved and enacted emergency drought regulations and the focus was shifted toward more aggressive water conservation efforts, and an updated ordinance became relevant.

The MPWD has utilized the BAWSCA landscape project checklists because they are simpler to use by residential and commercial customers, contractors, and staff. That means the MPWD also uses the BAWSCA regional standard for the 1,000 sq. ft. threshold for rehabilitated landscapes.

As reported on October 22, 2015, Staff worked these past several weeks with BAWSCA and a team of representatives from member agencies to develop the attached regional MWELO. Staff recommends Ordinance No. 115 as MPWD's Water Efficient Landscaping Ordinance, which includes the 1,000 sq. ft. threshold for rehabilitated landscapes that is the standard currently in use at the MPWD. This also ensures alignment with neighboring BAWSCA agency members, which provides residents, commercial business owners, designers, landscapers, and contractors with generally consistent compliance requirements across regional boundaries.

In accordance with Water Code 375, a public hearing will be noticed for and scheduled during next month's regular Board meeting.

Attachment: Ordinance No. 115 Adopting Water Efficient Landscaping Ordinance

---

BOARD ACTION: APPROVED:_____ DENIED:_____ POSTPONED:_____ STAFF DIRECTION:_____

UNANIMOUS_____ LINVILL_____ ZUCCA_____ WARDEN_____ STUEBING_____ VELLA_____

ORDINANCE NO. 115

ADOPTING WATER EFFICENT LANDSCAPING ORDINANCE,
EFFECTIVE FEBRUARY 1, 2016

MID-PENINSULA WATER DISTRICT

THIS ORDINANCE is adopted in light of the following facts and circumstances, which are hereby found and declared by the Board of Directors:

WHEREAS, a reliable minimum supply of potable water is essential to the public health, safety and welfare of the people and economy of the municipalities served by the Mid-Peninsula Water District ("MPWD") in California.

WHEREAS, the California Water Conservation in Landscaping Act, also known as the State Landscape Model Ordinance ("Model Ordinance"), has been implemented by a Statewide Landscape Task Force, which was overseen by the California Urban Water Conservation Council. The California Water Conservation in Landscaping Act was amended pursuant to AB 2717 (Chapter 682, Stats. 2004) and AB 1881 (Chapter 559, Stats. 2006).

WHEREAS, AB 1881 required cities and counties, no later than January 1, 2010, to adopt the updated Model Ordinance or an equivalent document which is "at least as effective as" the Model Ordinance in conserving water. In the event cities and counties do not take such action, the State's Model Ordinance was deemed to be automatically adopted by statute.

WHEREAS, the MPWD did not formally adopt a local ordinance and the State's Model Ordinance became effective as the MPWD's regulations on January 1, 2010, to comply with the requirement of AB 1881.

WHEREAS, Governor Brown issued Executive Order B-29 on April 1, 2015 which directed State agencies to implement immediate measures to save water, increase enforcement against water waste, and streamline government response to ongoing drought conditions.

WHEREAS, Executive Order B-29 directed the Department of Water Resources ("DWR") to update the State Model Ordinance through expedited regulation to increase water efficiency standards for new and existing landscapes through more efficient standards, greywater usage, onsite storm water capture, and limitations of the portions of landscape that can be covered in turf.

WHEREAS, the California Water Commission approved the proposed revisions to the State Model Ordinance on July 15, 2015.

WHEREAS, local agencies are required to adopt the revised State Model Ordinance or adopt a local or regional ordinance at least as effective in conserving water.

WHEREAS, the MPWD developed this regional Water Efficient Landscaping Ordinance in conjunction with the Bay Area Water Supply and Conservation Agency and other local agencies to meet the requirements and guidelines of the Model Ordinance and to address the unique physical characteristics, including average landscaped areas, within the MPWD's

jurisdiction in order to ensure that this Ordinance will be “at least as effective as” the Model Ordinance in conserving water.

WHEREAS, although this Water Conservation in Landscaping Ordinance is more streamlined and simplified than the Model Ordinance, the Board of Directors finds that it is “at least as effective as” the Model Ordinance for the following reasons: (1) this Ordinance applies to more accounts than the Model Ordinance does because it lowers the size threshold for applicable rehabilitated landscapes from 2,500 square feet to 1,000 square feet, to better reflect the typical landscaped areas located within the MPWD’s boundaries; (2) this Ordinance includes a default turf restriction of no turf or high water use plants in the irrigated area and requires that at least 80% of the plants in non-turf landscape areas be native plants, low-water using plants, or no-water using plants (unless the applicant elects to perform a water budget); (3) this Ordinance requires covers on newly constructed pools and spas. The Model Ordinance does not contain any such default turf restrictions or specified plant requirements.

WHEREAS, although this Water Conservation in Landscaping Ordinance is more streamlined and simplified than the Model Ordinance, the Board of Directors further finds that it is “at least as effective as” the Model Ordinance because this Ordinance includes water budget parameters and values and landscape parameters that are consistent with the Model Ordinance. By using the same water budget parameters as the Model Ordinance (e.g., plant factors, irrigation efficiency), this Ordinance will be as effective as the Model Ordinance in developing landscape water budgets. By using the same landscape parameters as the Model Ordinance for, among other things, slope restrictions and width restrictions for turf, irrigation times, and minimum mulch requirements, this Ordinance will be at least as effective as the Model Ordinance in achieving water savings.

WHEREAS, Article X, Section 2 of the California Constitution and Section 100 of the California Water Code declare that the general welfare requires water resources be put to beneficial use, waste or unreasonable use or unreasonable method of use of water be prevented, and conservation of water be fully exercised with a view to the reasonable and beneficial use thereof.

WHEREAS, the Board of Directors finds and determines that this Ordinance is consistent with the provisions requiring reductions in outdoor water use for landscaping in the California Green Building Standards Code, as such provisions will be implemented in the coming years. Such requirements include the development of a water budget for landscape irrigation in accordance with methodology outlined in either the Model Ordinance or pursuant to a locally adopted ordinance.

WHEREAS, the State Legislature has identified the provision of a more reliable water supply and the protection, restoration and enhancement of the Delta ecosystem as a high priority for the state. Pursuant to this, in November 2009, the State Legislature passed Senate Bill 7 (7th Extraordinary Session) requiring certain urban water suppliers to reduce per capita urban water use by 20% by the year 2020. Accordingly, the [City Council/Board of Directors/Board of Supervisors] finds that implementation of this Ordinance is consistent with the policies and goals established by the State Legislature in enacting SB 7 (7th Extraordinary Session).

WHEREAS, the MPWD has the power to perform all acts necessary to carry out fully the provisions of the County Water District Law (Water Code Section 31001), may establish rules and regulations for the distribution and use of water supplies (Water Code Section 31024), may adopt and enforce a comprehensive water conservation program to reduce potable water consumption and conserve supplies (Water Code Section 375), and may require as a condition of new service, that reasonable water-saving devices and water reclamation devices be installed to reduce water use (Water Code Section 31035).

WHEREAS, the Board of Directors of the MPWD has a long-standing policy of engaging in and encouraging efficient water management measures and practices and desires to adopt this Ordinance in order to provide supportive measures to facilitate the enforcement of landscape conservation ordinances by the municipalities it serves.

WHEREAS, the MPWD has followed the procedures for notice, public participation and adoption set forth in Section 375 of the California Water Code.

WHEREAS, the Board of Directors finds and determines that this Ordinance is not subject to the California Environmental Quality Act (Public Resources Code Section 2100 et seq.) ("CEQA") pursuant to Section 15307 (the activity assures the maintenance, restoration, enhancement, or protection of a natural resource) and Section 15378(b)(2) (the activity is not a project as it involves general policy and procedure making) of the State CEQA Guidelines, California Code of Regulations, Title 14, Chapter 3, since it makes and implements policies and procedures to ensure that water resources are conserved by reducing water consumption through the establishment of a structure for planning, designing, installing, maintaining and managing water-efficient landscapes.

WHEREAS, the adoption and enforcement of this Ordinance is necessary to manage the MPWD's potable water supply in the short and long-term and to avoid or minimize the effects of drought and shortage within the MPWD. This Ordinance is essential to ensure a reliable and sustainable minimum supply of water for the public health, safety and welfare.

NOW, THEREFORE, THE BOARD OF DIRECTORS DOES ORDAIN AS FOLLOWS:

I. Title

THIS ORDINANCE shall be known as the **MPWD Water Efficient Landscaping Ordinance, Effective February 1, 2016**.

II. Applicability

A. The provisions of this Ordinance shall apply to all of the following landscape projects:

i. New construction projects with an aggregate landscape area equal to or greater than 500 square feet requiring a building or landscape permit, plan check or design review,

ii. Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 1,000 square feet requiring a building or landscape permit, plan check, or design review;

iii. Existing landscapes limited to Sections 493, 493.1 and 493.2 in Division 2, Title 23 of the California Code of Regulations; all other existing landscapes shall only be subject to the provisions for existing landscapes provided for in Section XIII ”Provisions for Existing Landscapes Over One Acre in Size”.

iv. Cemeteries that are new or rehabilitated cemeteries shall only be subject to the provisions of Section VIII “Water Budget Calculations”, Section XIII “Landscape Audit Report”, and Section XV “Landscape and Irrigation Maintenance Schedule.” Existing cemeteries are limited to Section XXII “Provisions for Existing Landscapes over One Acre in Size”.

B. Any project with an aggregate landscape area of 2,500 square feet or less may comply with the performance requirements of this ordinance or conform to the prescriptive measures contained in Appendix D.

C. For projects using treated or untreated graywater or rainwater captured on site, any lot or parcel within the project that has less than 2500 sq. ft. of landscape and meets the lot or parcel’s landscape water requirement (Estimated Total Water Use) entirely with treated or untreated graywater or through stored rainwater captured on site is subject only to Appendix D Section (b)(5).

D. This ordinance does not apply to:

i. New construction with irrigated landscape areas less than 500 square feet, rehabilitated landscapes with irrigated landscape areas less than 1,000 square feet, or landscapes that do not require a building or landscape permit, plan check or design review, or new or expanded water service;

ii. Landscapes, or portions of landscapes, that are only irrigated for an establishment period;

iii. Registered local, state or federal historical sites where landscaping establishes a historical landscape style, as determined by a public board or commission responsible for architectural review or historic preservation;

iv. Ecological restoration or mined-land reclamation projects that do not require a permanent irrigation system; or

v. Community gardens or plant collections, as part of botanical gardens and arboretums open to the public, agricultural uses, commercial nurseries and sod farms.

III. Definitions

(a) “applied water” means the portion of water supplied by the irrigation system to the landscape.

(b) “automatic irrigation controller” means a timing device used to remotely control valves that operate an irrigation system. Automatic irrigation controllers are able to self-adjust and schedule irrigation events using either evapotranspiration (weather-based) or soil moisture data.

(c) “backflow prevention device” means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.

(d) “Certificate of Completion” means the document required under Section 492.9.

(e) “certified irrigation designer” means a person certified to design irrigation systems by an accredited academic institution, a professional trade organization or other program such as the US Environmental Protection Agency’s WaterSense irrigation designer certification program and Irrigation Association’s Certified Irrigation Designer program.

(f) “certified landscape irrigation auditor” means a person certified to perform landscape irrigation audits by an accredited academic institution, a professional trade organization or other program such as the US Environmental Protection Agency’s WaterSense irrigation auditor certification program and Irrigation Association’s Certified Landscape Irrigation Auditor program.

(g) “check valve” or “anti-drain valve” means a valve located under a sprinkler head, or other location in the irrigation system, to hold water in the system to prevent drainage from sprinkler heads when the sprinkler is off.

(h) “common interest developments” means community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1351.

(i) “compost” means the safe and stable product of controlled biologic decomposition of organic materials that is beneficial to plant growth.

(j) “conversion factor (0.62)” means the number that converts acre-inches per acre per year to gallons per square foot per year.

(k) “distribution uniformity” means the measure of the uniformity of irrigation water over a defined area.

(l) “drip irrigation” means any non-spray low volume irrigation system utilizing emission devices with a flow rate measured in gallons per hour. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

(m) “ecological restoration project” means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

(n) “effective precipitation” or “usable rainfall” (Eppt) means the portion of total precipitation which becomes available for plant growth.

(o) “emitter” means a drip irrigation emission device that delivers water slowly from the system to the soil.

(p) “established landscape” means the point at which plants in the landscape have developed significant root growth into the soil. Typically, most plants are established after one or two years of growth.

(q) “establishment period of the plants” means the first year after installing the plant in the landscape or the first two years if irrigation will be terminated after establishment. Typically, most plants are established after one or two years of growth. Native habitat mitigation areas and trees may need three to five years for establishment.

(r) “Estimated Total Water Use” (ETWU) means the total water used for the landscape as described in Section VIII.

(s) “ET adjustment factor” (ETAF) means a factor of 0.55 for residential areas and 0.45 for non-residential areas, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape. The ETAF for new and existing (non-rehabilitated) Special Landscape Areas shall not exceed 1.0. The ETAF for existing non-rehabilitated landscapes is 0.8.

(t) “evapotranspiration rate” means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time.

(u) “flow rate” means the rate at which water flows through pipes, valves and emission devices, measured in gallons per minute, gallons per hour, or cubic feet per second.

(v) “flow sensor” means an inline device installed at the supply point of the irrigation system that produces a repeatable signal proportional to flow rate. Flow sensors must be connected to an automatic irrigation controller, or flow monitor capable of receiving flow signals and operating master valves. This combination flow sensor/controller may also function as a landscape water meter or submeter.

(w) “friable” means a soil condition that is easily crumbled or loosely compacted down to a minimum depth per planting material requirements, whereby the root structure of newly planted material will be allowed to spread unimpeded.

(x) “Fuel Modification Plan Guideline” means guidelines from a local fire authority to assist residents and businesses that are developing land or building structures in a fire hazard severity zone.

(y) “graywater” means untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. “Graywater” includes, but is not limited to, wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers. Health and Safety Code Section 17922.12.

(z) “hardscapes” means any durable material (pervious and non-pervious).

(aa) “hydrozone” means a portion of the landscaped area having plants with similar water needs and rooting depth. A hydrozone may be irrigated or non-irrigated.

(bb) “infiltration rate” means the rate of water entry into the soil expressed as a depth of water per unit of time (e.g., inches per hour).

(cc) “invasive plant species” means species of plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources. Invasive species may be regulated by county agricultural agencies as noxious species. Lists of invasive plants are maintained at the California Invasive Plant Inventory and USDA invasive and noxious weeds database.

(dd) “irrigation audit” means an in-depth evaluation of the performance of an irrigation system conducted by a Certified Landscape Irrigation Auditor. An irrigation audit includes, but is not limited to: inspection, system tune-up, system test with distribution uniformity or emission uniformity, reporting overspray or runoff that causes overland flow, and preparation of an irrigation schedule. The audit must be conducted in a manner consistent with the Irrigation Association’s Landscape Irrigation Auditor Certification program or other U.S. Environmental Protection Agency “Watersense” labeled auditing program.

(ee) “irrigation efficiency” (IE) means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The irrigation efficiency for purposes of this ordinance are 0.75 for overhead spray devices and 0.81 for drip systems.

(ff) “irrigation survey” means an evaluation of an irrigation system that is less detailed than an irrigation audit. An irrigation survey includes, but is not limited to: inspection, system test, and written recommendations to improve performance of the irrigation system.

(gg) “irrigation water use analysis” means an analysis of water use data based on meter readings and billing data.

(hh) “landscape architect” means a person who holds a license to practice landscape architecture in the state of California Business and Professions Code, Section 5615.

(ii) “landscape area” means all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance calculation. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation).

(jj) “landscape contractor” means a person licensed by the state of California to construct, maintain, repair, install, or subcontract the development of landscape systems.

(kk) “Landscape Documentation Package” means the documents required under Section IV.

(ll) “landscape project” means total area of landscape in a project as defined in “landscape area” for the purposes of this ordinance, meeting requirements under Section II.

(mm) “landscape water meter” means an inline device installed at the irrigation supply point that measures the flow of water into the irrigation system and is connected to a totalizer to record water use.

(nn) “lateral line” means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.

(oo) “local agency” means a city or county, including a charter city or charter county, that is responsible for adopting and implementing the ordinance. The local agency is also responsible for the enforcement of this ordinance, including but not limited to, approval of a permit and plan check or design review of a project.

(pp) “local water purveyor” means any entity, including a public agency, city, county, or private water company that provides retail water service.

(qq) “low volume irrigation” means the application of irrigation water at low pressure through a system of tubing or lateral lines and low-volume emitters such as drip, drip lines, and bubblers. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

(rr) “low water use plant” means a plant species whose water needs are compatible with local climate and soil conditions. Species classified as "very low water use" and "low water use" by WUCOLS, having a regionally adjusted plant factor of 0.0 through 0.3, shall be considered low water use plants.

(ss) “main line” means the pressurized pipeline that delivers water from the water source to the valve or outlet.

(tt) “master shut-off valve” is an automatic valve installed at the irrigation supply point which controls water flow into the irrigation system. When this valve is closed water will not be supplied to the irrigation system. A master valve will greatly reduce any water loss due to a leaky station valve.

(uu) “Maximum Applied Water Allowance” (MAWA) means the upper limit of annual applied water for the established landscaped area as specified in Section IX. It is based upon the area’s reference evapotranspiration, the ET Adjustment Factor, and the size of the landscape area. The Estimated Total Water Use shall not exceed the Maximum Applied Water Allowance. Special Landscape Areas, including recreation areas, areas permanently and solely dedicated to edible plants such as orchards and vegetable gardens, and areas irrigated with recycled water are subject to the MAWA with an ETAF not to exceed 1.0. MAWA = (ETo) (0.62) [(ETAF x LA) + ((1-ETAF) x SLA)]

(vv) “median” is an area between opposing lanes of traffic that may be unplanted or planted with trees, shrubs, perennials, and ornamental grasses.

(ww) “microclimate” means the climate of a small, specific area that may contrast with the climate of the overall landscape area due to factors such as wind, sun exposure, plant density, or proximity to reflective surfaces.

(xx) “”microspray” means a microirrigation emission device with one or more orifices to convert irrigation water pressure to water discharge with a flow rate not to exceed 30 gallons per hour at the largest area of coverage available for the nozzle series when operated at 30 psi. Microsprays are inclusive of microbubbers, microspinners, and microspray jets.

(yy) “mined-land reclamation projects” means any surface mining operation with a reclamation plan approved in accordance with the Surface Mining and Reclamation Act of 1975.

(zz) “mulch” means any organic material such as leaves, bark, straw, compost, or inorganic mineral materials such as rocks, gravel, or decomposed granite left loose and applied to the soil surface for the beneficial purposes of reducing evaporation, suppressing weeds, moderating soil temperature, and preventing soil erosion.

(aaa) “native plant” means a plant indigenous to a specific area of consideration. For the purposes of these guidelines, the term shall refer to plants indigenous to the coastal ranges of Central and Northern California, and more specifically to such plants that are suited to the ecology of the present or historic natural community(ies) of the project’s vicinity.

(bbb) “new construction” means, for the purposes of this ordinance, a new building with a landscape or other new landscape, such as a park, playground, or greenbelt without an associated building.

(ccc) “non-residential landscape” means landscapes in commercial, institutional, industrial and public settings that may have areas designated for recreation or public assembly. It also includes portions of common areas of common interest developments with designated recreational areas and multifamily homes where landscaping is managed by a homeowners association or other common interest development

(ddd) "no-water using plant" means a plant species with water needs that are compatible with local climate and soil conditions such that regular supplemental irrigation is not required to sustain the plant after it has become established.

(eee) “operating pressure” means the pressure at which the parts of an irrigation system are designed by the manufacturer to operate.

(fff) “overhead sprinkler irrigation systems” or “overhead spray irrigation systems” means systems that deliver water through the air (e.g., spray heads and rotors).

(ggg) “overspray” means the irrigation water which is delivered beyond the target area.

(hhh) “parkway” means the area between a sidewalk and the curb or traffic lane. It may be planted or unplanted, and with or without pedestrian egress.

(iii) “permit” means an authorizing document issued by local agencies for new construction or rehabilitated landscapes.

(jjj) “pervious” means any surface or material that allows the passage of water through the material and into the underlying soil.

(kkk) “plant factor” or “plant water use factor” is a factor, when multiplied by ETo, estimates the amount of water needed by plants. For purposes of this ordinance, the plant factor range for very low water use plants is 0 to 0.1, the plant factor range for low water use plants is 0.1 to 0.3, the plant factor range for moderate water use plants is 0.4 to 0.6, and the plant factor range for high water use plants is 0.7 to 1.0. Plant factors cited in this ordinance are derived from the publication “Water Use Classification of Landscape Species”. Plant factors may also be obtained from horticultural researchers from academic institutions or professional associations as approved by the California Department of Water Resources (DWR).

(lll) “project applicant” means the individual or entity submitting a Landscape Documentation Package required under Section IV, to request a permit, plan check, or design review from the local agency. A project applicant may be the property owner or his or her designee.

(mmm) “rain sensor” or “rain sensing shutoff device” means a component which automatically suspends an irrigation event when it rains.

(nnn) “record drawing” or “as-builts” means a set of reproducible drawings which show significant changes in the work made during construction and which are usually based on drawings marked up in the field and other data furnished by the contractor.

(ooo) “recreational area” means areas, excluding private single family residential areas, designated for active play, recreation or public assembly in parks, sports fields, picnic grounds, amphitheaters or golf course tees, fairways, roughs, surrounds and greens.

(ppp) “recycled water,” “reclaimed water,” or “treated sewage effluent water” means treated or recycled waste water or reused water of a quality suitable for nonpotable uses such as landscape irrigation and water features. This water is not intended for human consumption.

(qqq) “reference evapotranspiration” or “ETo” means a standard measurement of environmental parameters which affect the water use of plants. ETo is expressed in inches per day, month, or year as represented in Appendix A, and is an estimate of the evapotranspiration of a large field of four- to seven-inch tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis of determining the Maximum Applied Water Allowances so that regional differences in climate can be accommodated.

(rrr) “Regional Water Efficient Landscape Ordinance” means a local Ordinance adopted by two or more local agencies, water suppliers and other stakeholders for implementing a consistent set of landscape provisions throughout a geographical region. Regional ordinances are strongly encouraged to provide a consistent framework for the landscape industry and applicants to adhere to.

(sss) “rehabilitated landscape” means any rehabilitated landscaping project that requires a permit, plan check, or design review, meets the requirements of Section 490.1, and the modified landscape area is equal to or greater than 2,500 square feet.

(ttt) “residential landscape” means landscapes surrounding single family homes or multifamily homes where landscapes are managed by individual homeowners.

(uuu) “run off” means water which is not absorbed by the soil or landscape to which it is applied and flows from the landscape area. For example, run off may result from water that is applied at too great a rate (application rate exceeds infiltration rate) or when there is a slope.

(vvv) “soil moisture sensing device” or “soil moisture sensor” means a device that measures the amount of water in the soil. The device may also suspend or initiate an irrigation event.

(www) “soil texture” means the classification of soil based on its percentage of sand, silt, and clay.

(xxx) “Special Landscape Area” (SLA) means an area of the landscape dedicated solely to edible plants, recreational areas, areas irrigated with recycled water, or water features using recycled water.

(yyy) “sprinkler head” or “spray head” means a device which delivers water through a nozzle.

(zzz) “static water pressure” means the pipeline or municipal water supply pressure when water is not flowing.

(aaaa) “station” means an area served by one valve or by a set of valves that operate simultaneously.

(bbbb) “swimming pool” means any structure intended for swimming, recreational bathing or wading that contains water over 24 inches (610 mm) deep. This includes in-ground, above ground, and on-ground pools; hot tubs; spa and fixed in place wading pools

(cccc) “swing joint” means an irrigation component that provides a flexible, leak-free connection between the emission device and lateral pipeline to allow movement in any direction and to prevent equipment damage.

(dddd) “submeter” means a metering device to measure water applied to the landscape that is installed after the primary utility water meter.

(eeee) “turf” means a ground cover surface of mowed grass. Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and Tall fescue are cool-season grasses. Bermudagrass, Kikuyugrass, Seashore Paspalum, St. Augustinegrass, Zoysiagrass, and Buffalo grass are warm-season grasses.

(ffff) “valve” means a device used to control the flow of water in the irrigation system.

(gggg) “water conserving plant species” means a plant species identified as having a very low or low plant factor.

(hhhh) “water feature” means a design element where open water performs an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, artificial streams, spas, and swimming pools (where water is artificially supplied). The surface area of water features is included in the high water use hydrozone of the landscape area. Constructed wetlands used for on-site wastewater treatment or stormwater best management practices that are not irrigated and used solely for water treatment or stormwater retention are not water features and, therefore, are not subject to the water budget calculation.

(iiii) “watering window” means the time of day irrigation is allowed.
(jjjj) “WUCOLS” means the current version of the Water Use Classification of Landscape Species current edition published by the University of California Cooperative Extension and the Department of Water Resources, available at:
http://ucanr.edu/sites/WUCOLS/Download_WUCOLS_IV_List/

IV. Water Conservation in Landscaping Ordinance Requirements

A. All owners of new construction and rehabilitated landscapes of applicable sizes shall: (1) complete the Landscape Project Application and Documentation Package (Section VI) and (2) comply with the Landscape and Irrigation Maintenance Schedule (Section XV) requirements of this Ordinance.

B. All owners of existing landscapes over one acre in size, even if installed before enactment of this Ordinance, shall: (1) comply with local agency programs that may be instituted relating to irrigation audits, surveys and

water use analysis, and (2) shall maintain landscape irrigation facilities to prevent water waste and runoff.

V. Compliance with Ordinance.

A. The local agency shall:

i. Provide the project applicant with the Ordinance and Landscape Project Application and Documentation Package requirements and the procedures for permits, plan checks, design reviews, or new or expanded water service;

ii. Review the Landscape Project Application submitted by the project applicant;

iii. Approve or deny the project applicant's Landscape Project Application submittal;

iv. Issue or approve a permit, plan check or design review that complies with the approved Landscape Project Application or approve a new or expanded water service application that complies with the approved Landscape Project Application;

v. Submit a copy of the complete Landscape Project Application to the local water purveyor or land use authority, as the case may be.

B. The project applicant shall:

i. Prior to construction, submit all portions of the Landscape Project Application, except the Landscape Audit Report, to the local agency; and

ii. Upon approval of the Landscape Project Application by the local agency:

a. receive a permit or approval of the plan check or design review and record the date of the permit in the Certificate of Completion;

b. submit a copy of the approved Landscape Documentation Package along with the record drawings, and any other information to the property owner or his/her designee; and

c. submit a copy of the Water Efficient Landscape Worksheet to the local water purveyor.

VI. Landscape Project Application and Documentation Package

A. The elements of a landscape must be designed to achieve water efficiency and will comply with the criteria described in this Ordinance. In completing the Landscape Project Application, project applicants may choose one of two options to demonstrate that the landscape meets the Ordinance's water efficiency goals. Regardless of which option is selected, the applicant must

complete and comply with all other elements of the Ordinance. The options include:

i. Planting restrictions:

a. The landscape areas may include no turf or high-water using plants; and

b. At least 80% of the plants in landscape areas shall be native plants, low-water using plants, or no-water using plants; or the

ii. Water Budget Calculation option (Section VIII).

B. The Landscape Project Application shall include the following elements:

i. Project Information;

1. Date

2. Project Applicant

3. Project address (if available, parcel and/or lot numbers)

4. Project type (e.g., new, rehabilitated, public, private, cemetery, homeowner-installed)

5. Total landscape area (Square feet)

6. Water supply type (e.g., potable, recycled, well) and identify the local retail water purveyor if the applicant is not served by a private well

7. Checklist of all documents in Landscape Documentation Package

8. Project contacts to include contact information for the project applicant and property owner

9. Applicant signature and date with statement, “I agree to comply with the requirements of the water efficient landscape ordinance and submit a complete Landscape Documentation Package”.

ii. Water Budget Calculations, if applicant selects to use a water budget approach rather than comply with the turf area limitations or specified plant type restrictions (Section VIII);

iii. Soil Management Report or Soil Management Survey (Section VII)

iv. Landscape Design Plans (Section IX);

v. Irrigation System Design Plans (Section X); and

vi. Landscape Audit Report (Section XIII).

vii. Grading Design Plan or Grading Design Survey (Section XI)

VII. Soil Management Report

A. In order to reduce runoff and encourage healthy plant growth, a soil management report shall be completed by the project applicant, or his/her designee, or the applicant shall complete a Soil Management Survey (Appendix E). The soil management report shall be completed as follows:

i. Submit soil samples to a laboratory for analysis and recommendations.

1. Soil sampling shall be conducted in accordance with laboratory protocol, including protocols regarding adequate sampling depth for the intended plants.

2. The soil analysis shall include:

a. soil texture;

b. infiltration rate determined by laboratory test or soil texture infiltration rate table;

c. pH;

d. total soluble salts;

e. sodium

f. percent organic matter; and

g. recommendations

3. In projects with multiple landscape installations (i.e. production home developments) a soil sampling rate of 1 in 7 lots or approximately 15% will satisfy this requirement. Large landscape projects shall sample at a rate equivalent to 1 in 7 lots.

ii. The project applicant, or his/her designee, shall comply with one of the following:

1. If significant mass grading is not planned, the soil analysis report shall be submitted to the local agency as part of the Landscape Documentation Package; or

2. If significant mass grading is planned, the soil analysis report shall be submitted to the local agency as part of the Certificate of Completion.

iii. The soil analysis report shall be made available, in a timely manner, to the professionals preparing the landscape design plans and irrigation design plans to make any necessary adjustments to the design plans.

iv. The project applicant, or his/her designee, shall submit documentation verifying implementation of soil analysis report recommendations to the local agency with Certificate of Completion.

VIII. Water Budget Calculations

Project applicant may elect to complete a water budget calculation for the landscape project using the Water Efficient Landscape Worksheet in Appendix B.

Water budget calculations, if prepared, shall adhere to the following requirements:

A. The plant factor used shall be from WUCOLS or from horticultural researchers with academic institutions or professional associations as approved by the California Department of Water Resources (DWR). The plant factor ranges from from 0 to 0.1 for very low water using plants, 0.1 to 0.3 for low water use plants, from 0.4 to 0.6 for moderate water use plants, and from 0.7 to 1.0 for high water use plants.

B. All water features shall be included in the high water use hydrozone and temporarily irrigated areas shall be included in the low water use hydrozone..

C. All Special Landscape Areas (SLA) shall be identified and their water use included in the water budget calculations.

D. The reference evapotranspiration adjustment factor (ETAF) for SLA shall not exceed 1.0. The ETAF for all other landscaped areas shall not exceed 0.55 for residential areas and 0.45 for non-residential areas.

E. ETo values from the Reference Evapotranspiration Table in Appendix A shall be used In calculating the Maximum Applied Water Allowance (MAWA) and Estimated Total Water Use (ETWU). For geographic areas not covered in Appendix A, use data from other cities located nearby in the same reference evapotranspiration zone, as found in the CIMIS Reference Evapotranspiration Zones Map, Department of Water Resources, 1999.For the purpose of determining Estimated Total Water Use, average irrigation efficiency is assumed to be 0.75 for overhead spray devices and 0.81 for drip system devices.

F. MAWA shall be calculated using the equation below:

MAWA = (ETo) (0.62) [(0.55 x LA) + (0.45 x SLA)] for residential areas

MAWA = (ETo) (0.62) [(0.45 x LA) + (0.55 x SLA)] for non-residential areas

Where:
MAWA = Maximum Applied Water Allowance (gallons per year)
ETo = Reference Evapotranspiration (inches per year)
0.62 = Conversion Factor (to gallons)
0.55 = Reference Evapotranspiration Adjustment Factor (ETAF) for residential areas

0.45 = Reference Evapotranspiration Adjustment Factor (ETAF) for non-residential areas
LA = Landscape Area including SLA (square feet)
0.45 = Additional Water Allowance for SLA in residential areas
0.55 = Additional Water Allowance for SLA in non-residential areas
SLA = Special Landscape Area (square feet)

G. A local agency or project applicant may consider Effective Precipitation (25% of annual precipitation) in tracking water use and may use the following equation to calculate the MAWA:

i. MAWA = (ETo - Eppt) (0.62) [(0.55 x LA) + (0.45 x SLA)] for residential areas.

ii. MAWA = (ETo - EPPT) (0.62) [(0.45 x LA) + (0.55 x SLA)] for non-residential areas.

H. Estimated Total Water Use (ETWU) will be calculated using the equation below. The sum of the ETWU calculated for all hydrozones will not exceed the MAWA.

$$ETWU = (ETo)(0.62)\left(\frac{PF\ x\ HA}{IE} + SLA\right)$$

Where:
ETWU = Estimated Total Water Use per year (gallons)
ETo = Reference Evapotranspiration (inches)
PF = Plant Factor from WUCOLS (see Section 491)
HA = Hydrozone Area [high, medium, and low water use areas] (square feet)
0.75 = Irrigation Efficiency (IE) for overhead spray devices
0.81 = Irrigation Efficiency (IE) for drip system devices
SLA = Special Landscape Area (square feet)
0.62 = Conversion Factor

IX. Landscape Design Plan

A. For the efficient use of water, a landscape shall be carefully designed and planned for the intended function of the project. A landscape design plan meeting the following design criteria shall be submitted as part of the Landscape Documentation Package.

i. Plant Material

1. Any plant may be selected for the landscape, providing the Estimated Total Water Use in the landscape area does not exceed the Maximum Applied Water Allowance. Methods to achieve water efficiency shall include one or more of the following:

    a. Protection and preservation of native species and natural vegetation;

    b. Selection of water-conserving plant, tree and turf species, especially local native plants;

    c. Selection of plants based on local climate suitability, disease and pest resistance;

    d. Selection of trees based on applicable local tree ordinances or tree shading guidelines, and size at maturity as appropriate for the planting area;

    e. Selection of plants from local and regional landscape program plant lists; and

    f. Selection of plants from local Fuel Modification Plan Guidelines.

2. Each hydrozone shall have plant materials with similar water use, with the exception of hydrozones with plants of mixed water use, as specified in Section X (A)(ii)(4).

3. Plants shall be selected and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site. Methods to achieve water efficiency shall include one or more of the following:

    a. Use the Sunset Western Climate Zone System which takes into account temperature, humidity, elevation, terrain, latitude, and varying degrees of continental and marine influence on local climate;

    b. Recognize the horticultural attributes of plants (i.e., mature plant size, invasive surface roots) to minimize damage to property or infrastructure [e.g., buildings, sidewalks, power lines]; allow for adequate soil volume for healthy root growth;

    c. Consider the solar orientation for plant placement to maximize summer share and winter solar gain.

4. Turf is not allowed on slopes greater than 25% where the toe of the slope is adjacent to an impermeable hardscape and where 25%

means 1 foot of vertical elevation change for every 4 feet of horizontal length (rise divided by run x 100 = slope percent).

5. High water use plants, characterized by a plant factor of 0.7 to 1.0, are prohibited in street medians.

6. A landscape design plan for projects in fire-prone areas shall address fire safety and prevention. A defensible space or zone around a building or structure is required per Public Resources Code Section 4291(a) and (b). Avoid fire-prone plant materials and highly flammable mulches. Refer to the local Fuel Modification Plan guidelines.

7. The use of invasive plant species, such as those listed by the California Invasive Plant Council, is strongly discouraged.

8. The architectural guidelines of a common interest development, which include community apartment projects, condominiums, planned developments, and stock cooperatives, shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group.

ii. Water Features

1. Recirculating water systems shall be used for water features.

2. Where available, recycled water shall be used as a source for decorative water features.

3. Surface area of a water feature shall be included in the high water use hydrozone area of the water budget calculation.

4. Pool and spa covers are required on any newly constructed pool or spa.

iii. Soil Preparation, Mulch and Amendments

1. Prior to the planting of any materials, compacted soils shall be transformed to a friable condition. On engineered slopes, only amended planting holes need meet this requirement.

2. Soil amendments shall be incorporated according to recommendations of the soil report and what is appropriate for the plants selected (see Section VII).

3. For landscape installations, compost at a rate of a minimum of four cubic yards per 1,000 square feet of permeable area shall be incorporated to a depth of six inches into the soil. Soils with greater than 6% organic matter in the top 6 inches of soil are exempt from adding compost and tilling.

4. A minimum three inch (3″) layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated. To provide habitat for beneficial insects and other wildlife, up to 5% of the landscape area may be left without mulch. Designated insect habitat must be included in the landscape design plan as such.

5. Stabilizing mulching products shall be used on slopes that meet current engineering standards.

6. The mulching portion of the seed/mulch slurry in hydro-seeded applications shall meet the mulching requirement.

7. Organic mulch materials made from recycled or post-consumer shall take precedence over inorganic materials or virgin forest products unless the recycled post-consumer organic products are not locally available. Organic mulches are not required where prohibited by local Fuel Modification Plan Guidelines or other applicable local ordinances.

B. The landscape design plan, at a minimum, shall:

i. Delineate and label each hydrozone by number, letter, or other method;

ii. Identify each hydrozone as low, moderate, high water, or mixed water use. Temporarily irrigated areas of the landscape shall be included in the low water use hydrozone for the water budget calculation;

iii. Identify recreational areas;

iv. Identify areas permanently and solely dedicated to edible plants;

v. Identify areas irrigated with recycled water;

vi. Identify type of mulch and application depth;

vii. Identify soil amendments, type, and quantity;

viii. Identify type and surface area of water features;

ix. Identify hardscapes (pervious and non-pervious);

x. Identify location, installation details, and 24-hour retention or infiltration capacity of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater. Project applicants shall refer to the local agency or regional Water Quality Control Board for information on any applicable stormwater technical requirements. Stormwater best management practices are encouraged in the landscape design plan and examples are provided in Section XVI;

xi. Identify any applicable rain harvesting or catchment technologies as discussed in Section XVI and their 24-hour retention or infiltration capacity;

xii. Identify any applicable graywater discharge piping, system components and area(s) of distribution;

xiii. Contain the following statement: “I have complied with the criteria of the ordinance and applied them for the efficient use of water in the landscape design plan”; and

xiv. Bear the signature of a licensed landscape architect, licensed landscape contractor, or any other person authorized to design a landscape. (See Sections 5500.1, 5615, 5641, 5641.1, 5641.2, 5641.3, 5641.4, 5641.5, 5641.6, 6701, 7027.5 of the Business and Professions Code, Section 832.27 of Title 16 of the California Code of Regulations, and Section 6721 of the Food and Agriculture Code.).

X. Irrigation Design Plan

A. This section applies to landscaped areas requiring permanent irrigation, not areas that require temporary irrigation solely for the plant establishment period. For the efficient use of water, an irrigation system shall meet all the requirements listed in this section and the manufacturers’ recommendations. The irrigation system and its related components shall be planned and designed to allow for proper installation, management, and maintenance. An irrigation design plan meeting the following design criteria shall be submitted as part of the Landscape Documentation Package.

i. System

1. Landscape water meters, defined as either a dedicated water service meter or private submeter, shall be installed for all non-residential irrigated landscapes of 1,000 sq. ft. but not more than 5,000 sq.ft. (the level at which Water Code 535 applies) and residential irrigated landscapes of 5,000 sq. ft. or greater. A landscape water meter may be either:

   a. A customer service meter dedicated to landscape use provided by the local water purveyor; or

   b. A privately owned meter or submeter.

2. Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data utilizing non-volatile memory shall be required for irrigation scheduling in all irrigation systems.

3. If the water pressure is below or exceeds the recommended pressure of the specified irrigation devices, the installation of a pressure regulating device is required to ensure that the dynamic pressure at

each emission device is within the manufacturer's recommended pressure range for optimal performance.

a. If the static pressure is above or below the required dynamic pressure of the irrigation system, pressure-regulating devices such as inline pressure regulators, booster pumps, or other devices shall be installed to meet the required dynamic pressure of the irrigation system.

b. Static water pressure, dynamic or operating pressure, and flow reading of the water supply shall be measured at the point of connection. These pressure and flow measurements shall be conducted at the design stage. If the measurements are not available at the design stage, the measurements shall be conducted at installation.

4. Sensors (rain, freeze, wind, etc.), either integral or auxiliary, that suspend or alter irrigation operation during unfavorable weather conditions shall be required on all irrigation systems, as appropriate for local climatic conditions. Irrigation should be avoided during windy or freezing weather or during rain.

5. Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) shall be required, as close as possible to the point of connection of the water supply, to minimize water loss in case of an emergency (such as a main line break) or routine repair.

6. Backflow prevention devices shall be required to protect the water supply from contamination by the irrigation system. A project applicant shall refer to the applicable local agency code (i.e., public health) for additional backflow prevention requirements.

7. Flow sensors that detect high flow conditions created by system damage or malfunction are required for all on non-residential landscapes and residential landscapes of 5000 sq. ft. or larger.

8. Master shut-off valves are required on all projects except landscapes that make use of technologies that allow for the individual control of sprinklers that are individually pressurized in a system equipped with low pressure shut down features.

9. The irrigation system shall be designed to prevent runoff, low head drainage, overspray, or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways, or structures.

10. Relevant information from the soil management plan, such as soil type and infiltration rate, shall be utilized when designing irrigation systems.

11. The design of the irrigation system shall conform to the hydrozones of the landscape design plan.

12. The irrigation system must be designed and installed to meet, at a minimum, the irrigation efficiency criteria as described in Section VIII regarding the Maximum Applied Water Allowance.

13. All irrigation emission devices must meet the requirements set in the American National Standards Institute (ANSI) standard, American Society of Agricultural and Biological Engineers'/International Code Council's (ASABE/ICC) 802-2014 "Landscape Irrigation Sprinkler and Emitter Standard, All sprinkler heads installed in the landscape must document a distribution uniformity low quarter of 0.65 or higher using the protocol defined in ASABE/ICC 802-2014.

14. It is highly recommended that the project applicant or local agency inquire with the local water purveyor about peak water operating demands (on the water supply system) or water restrictions that may impact the effectiveness of the irrigation system.

15. In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.

16. Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.

17. Head to head coverage is recommended. However, sprinkler spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.

18. Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to hardscapes or in high traffic areas of turfgrass.

19. Check valves or anti-drain valves are required on all sprinkler heads where low point drainage could occur.

20. Areas less than ten (10) feet in width in any direction shall be irrigated with subsurface irrigation or other means that produces no runoff or overspray.

21. Overhead irrigation shall not be permitted within 24 inches of any non-permeable surface. Allowable irrigation within the setback from non-permeable surfaces may include drip, drip line, or other low flow non-spray technology. The setback area may be planted or unplanted. The surfacing of the setback may be mulch, gravel, or other porous material. These restrictions may be modified if:

    a. The landscape area is adjacent to permeable surfacing and no runoff occurs; or

    b. The adjacent non-permeable surfaces are designed and

constructed to drain entirely to landscaping; or

c. The irrigation designer specifies an alternative design or technology, as part of the Landscape Documentation Package and clearly demonstrates strict adherence to irrigation system design criteria in Section X (A)(1)Prevention of overspray and runoff must be confirmed during the irrigation audit.

22. Slopes greater than 25% shall not be irrigated with an irrigation system with a application rate exceeding 0.75 inches per hour. This restriction may be modified if the landscape designer specifies an alternative design or technology, as part of the Landscape Documentation Package, and clearly demonstrates no runoff or erosion will occur. Prevention of runoff and erosion must be confirmed during the irrigation audit.

ii. Hydrozone

1. Each valve shall irrigate a hydrozone with similar site, slope, sun exposure, soil conditions, and plant materials with similar water use.

2. Sprinkler heads and other emission devices shall be selected based on what is appropriate for the plant type within that hydrozone.

3. Where feasible, trees shall be placed on separate valves from shrubs, groundcovers, and turf to facilitate the appropriate irrigation of trees. The mature size and extent of the root zone shall be considered when designing irrigation for the tree.

4. Individual hydrozones that mix plants of moderate and low water use, or moderate and high water use, may be allowed if:

a. Plant factor calculation is based on the proportions of the respective plant water uses and their plant factor; or

b. The plant factor of the higher water using plant is used for calculations.

5. Individual hydrozones that mix high and low water use plants shall not be permitted.

6. On the Landscape Design Plan and Irrigation Design Plan, hydrozone areas shall be designated by number, letter, or other designation. On the Irrigation Design Plan, designate the areas irrigated by each valve, and assign a number to each valve. Use this valve number in the Hydrozone Information Table (see Appendix B Section A). This table can also assist with the irrigation audit and programming the controller.

B. The Irrigation Design Plan, at a minimum, shall contain:

i. Location and size of separate water meters for landscape;

ii. Location, type and size of all components of the irrigation system, including controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, pressure regulators, and backflow prevention devices;

iii. Static water pressure at the point of connection to the public water supply;

iv. Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (pressure per square inch) for each station;

v. Recycled water irrigation systems as specified in Section XVII;

vi. The following statement: "I have complied with the criteria of the ordinance and applied them accordingly for the efficient use of water in the irrigation design plan"; and

vii. The signature of a licensed landscape architect, certified irrigation designer, licensed landscape contractor, or any other person authorized to design an irrigation system. (See Sections 5500.1, 5615, 5641, 5641.1, 5641.2, 5641.3, 5641.4, 5641.5, 5641.6, 6701, 7027.5 of the Business and Professions Code, Section 832.27 of Title 16 of the California Code of Regulations, and Section 6721 of the Food and Agricultural Code.)

XI. Grading Design Plan

A. For the efficient use of water, grading of a project site shall be designed to minimize soil erosion, runoff, and water waste. A grading plan or completed Grading Design Survey (Appendix E) shall be submitted as part of the Landscape Documentation Package. A comprehensive grading plan prepared by a civil engineer for other local agency permits satisfies this requirement.

i. The project applicant shall submit a landscape grading plan that indicates finished configurations and elevations of the landscape area including:

1. Height of graded slopes;

2. Drainage patterns;

3. Pad elevations;

4. Finish grade; and

5. Storm water retention improvements, if applicable

ii. To prevent excessive erosion and runoff, it is highly recommended that project applicants:

1. Grade so that all irrigation and normal rainfall remains within property lines and does not drain on to non-permeable hardscapes;

2. Avoid disruption of natural drainage patterns and undisturbed soil; and

3. Avoid soil compaction in landscape areas.

XII. Certificate of Completion

A. The Certificate of Completion (see Appendix C for a sample certificate) shall include the following six (6) elements:

i. Project information sheet that contains:

1. Date

2. Project name

3. Project applicant name, telephone, and mailing address;

4. Project address and location; and

5. Property owner name, telephone, and mailing address;

ii. Certification by either the signer of the landscape design plan, the signer of the irrigation design plan, or the licensed landscape contractor that the landscape project has been installed per the approved Landscape Documentation Package;

1. Where there have been significant changes made in the field during construction, these “as-built” or record drawings shall be included with the certification;

2. A diagram of the irrigation plan showing hydrozones shall be kept with the irrigation controller for subsequent management purposes.

iii. Irrigation scheduling parameters used to set the controller (see Section XIV);

iv. Landscape and irrigation maintenance schedule (see Section XV);

v. Irrigation audit report (see Section XIII); and

vi. Soil analysis report or soil management survey, if not submitted with Landscape Documentation Package, and documentation verifying implementation of soil report recommendations (see Section VII).

B. The project applicant shall:

i. Submit the signed Certificate of Completion to the local agency for review; and

ii. Ensure that copies of the approved Certificate of Completion are submitted to the local water purveyor and property owner or his or her designee.

C. The local agency shall:

i. Receive the signed Certificate of Completion from the project applicant; and

ii. Approve or deny the Certificate of Completion. If the Certificate of Completion is denied, the local agency shall provide information to the project applicant regarding reapplication, appeal, or other assistance.

XIII. Landscape Audit Report

A. The Landscape Audit Report shall include, but is not limited to: inspection to confirm that the landscaping and irrigation system were installed as specified in the Landscape and Irrigation Design Plan, system tune-up, system test with distribution uniformity, reporting overspray or run off that causes overland flow, and preparation of an irrigation schedule.

B. The Landscape Audit Report shall include the following statement: “The landscape and irrigation system has been installed as specified in the Landscape and Irrigation Design Plan and complies with the criteria of the Ordinance and the permit”.

C. Local agency shall administer on-going programs that may include, but not be limited to, post-installation landscape inspection, irrigation water use analysis, irrigation audits, irrigation surveys and water budget calculations to evaluate compliance with the MAWA.

XIV. Irrigation Scheduling

A. For the efficient use of water, all irrigation schedules shall be developed, managed, and evaluated to utilize the minimum amount of water required to maintain plant health. Irrigation schedules shall meet the following criteria:

i. Irrigation scheduling shall be regulated by automatic irrigation controllers.

ii. Overhead irrigation shall be scheduled between 6:00 p.m. and 10:00 a.m. unless weather conditions prevent it. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.

iii. For implementation of the irrigation schedule, particular attention must be paid to irrigation run times, emission device, flow rate, and current reference evapotranspiration, so that applied water meets the Estimated Total Water Use. Total annual applied water shall be less than or equal to Maximum Applied Water Allowance (MAWA). Actual irrigation schedules

shall be regulated by automatic irrigation controllers using current reference evapotranspiration data (e.g., CIMIS) or soil moisture sensor data.

iv. Parameters used to set the automatic controller shall be developed and submitted for each of the following:

1. The plant establishment period;

2. The established landscape; and

3. Temporarily irrigated areas

v. Each irrigation schedule shall consider for each station all of the following that apply:

1. Irrigation interval (days between irrigation);

2. Irrigation run times (hours or minutes per irrigation event to avoid runoff);

3. Number of cycle starts required for each irrigation event to avoid runoff;

4. Amount of applied water scheduled to be applied on a monthly basis;

5. Application rate setting;

6. Root depth setting;

7. Plant type setting;

8. Soil type;

9. Slope factor setting;

10. Shade factor setting; and

11. Irrigation uniformity or efficiency setting.

XV. Landscape and Irrigation Maintenance Schedule

A. Landscapes shall be maintained to ensure water use efficiency. A regular maintenance schedule shall be submitted with the Certificate of Completion.

B. A regular maintenance schedule shall include, but not be limited to, routine inspection; auditing; adjustment and repair of the irrigation system and its components; aerating and dethatching turf areas; topdressing with compost; replenishing mulch; fertilizing; pruning; weeding in all landscape areas; and removing obstructions to emission devices. Operation of the irrigation system

outside the normal watering window is allowed for auditing and system maintenance.

C. Repair of all irrigation equipment shall be done with the originally installed components or their equivalents or with components with greater efficiency.

D. A Project applicant is encouraged to implement established landscape industry sustainable Best Practices for all landscape maintenance activities.

XVI. Stormwater Management and Rainwater Retention

A. Stormwater management practices minimize runoff and increase infiltration, which recharges groundwater and improves water quality. Implementing stormwater best management practices into the landscape and grading design plans to minimize runoff and to increase on-site rainwater retention and infiltration are encouraged.

B. Project applicants shall refer to the local agency or Regional Water Quality Control Board for information on any applicable stormwater technical requirements.

C. All planted landscape areas are required to have friable soil to maximize water retention and infiltration. Refer to Section IX (A)(iii).

D. It is strongly recommended that landscape areas be designed for capture and infiltration capacity that is sufficient to prevent runoff from impervious surfaces (e.g., roof and paved areas) from either: the one inch, 24-hour rain event or (2) the 85th percentile, 24-hour rain event, and/or additional capacity as required by any applicable local, regional, state or federal regulation.

E. It is recommended that stormwater projects incorporate any of the following elements to improve on-site stormwater and dry weather runoff capture and use:

i. Grade impervious surfaces, such as driveways, during construction to drain to vegetated areas.

ii. Minimize the area of impervious surfaces such as paved areas, roof and concrete driveways.

iii. Incorporate pervious or porous surfaces (e.g., gravel, permeable pavers or blocks, pervious or porous concrete) that minimize runoff.

iv. Direct runoff from paved surfaces and roof areas into planting beds or landscaped areas to maximize site water capture and reuse.

v. Incorporate rain gardens, cisterns, and other rain harvesting or catchment systems.

vi. Incorporate infiltration beds, swales, basins and drywells to capture storm water and dry weather runoff and increase percolation into the soil.

vii. Consider constructed wetlands and ponds that retain water, equalize excess flow, and filter pollutants.

XVII. Recycled Water

A. The installation of recycled water irrigation systems shall allow for the current and future use of recycled water.

B. All recycled water irrigation systems shall be designed and operated in accordance with all applicable local and State laws.

C. Landscapes using recycled water are considered Special Landscape Areas. The ET Adjustment Factor for new and existing (non-rehabilitated) Special Landscape Areas shall not exceed 1.0.

XVIII. Graywater Systems

A. Graywater systems promote the efficient use of water and are encouraged to assist in on-site landscape irrigation. All graywater systems shall conform to the California Plumbing Code (Title 24, Part 5, Chapter 16) and any applicable local ordinance standards. Refer to Section II (B) for the applicability of this ordinance to landscape areas less than 2,500 square feet with the Estimated Total Water Use met entirely by graywater.

XIX. Environmental Review

A. The local agency must comply with the California Environmental Quality Act (CEQA), as appropriate.

XX. Provisions for Existing Landscapes

A. A local agency may by mutual agreement, designate another agency to implement some or all of the requirements contained in this ordinance. Local agencies may collaborate with water purveyors to define each entity's specific responsibilities relating to this ordinance.

XXI. Provisions for Existing Landscapes Over One Acre in Size

This section shall apply to all existing landscapes that were installed before December 16, 2015, and are over one acre in size.

A. Irrigation Audit, Irrigation Survey, and Irrigation Water Use Analysis.

i. For landscapes that have a water meter, the local agency shall administer programs that may include, but not be limited to, irrigation water use analyses, irrigation surveys, and irrigation audits to evaluate water use and provide recommendations as necessary to reduce landscape water use to a level that does not exceed the MAWA for existing landscapes. The MAWA for existing landscapes shall be calculated as:

MAWA = (0.8) (ETo)(LA)(0.62).

ii. For landscapes that do not have a meter, the local agency shall administer programs that may include, but not be limited to, irrigation surveys and irrigation audits to evaluate water use and provide recommendations as necessary in order to prevent water waste.

iii. All landscape irrigation audits for existing landscapes that are greater than one acre in size shall be conducted by a certified landscape irrigation auditor.

B. Water Waste Prevention.

i. Local agencies shall prevent water waste resulting from inefficient landscape irrigation by prohibiting runoff from leaving the target landscape due to low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, parking lots, or structures.

ii. Restrictions regarding overspray and runoff may be modified if:

1. the landscape area is adjacent to permeable surfacing and no runoff occurs; or

2. the adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping.

XXII. Penalties

A local agency may establish and administer penalties to the project applicant for non-compliance with this Ordinance to the extent permitted by law.

A. Violation and Notice of Correction.

It is unlawful for any person, firm, partnership, association, or corporation subject to the requirements of this Ordinance to fail to comply with the outdoor water use efficiency requirements of this Ordinance. The MPWD has the authority to conduct such inquiries, audits or surveys to ensure compliance with the requirements of this Ordinance. Whenever the General Manager for the MPWD determines that a violation of this Ordinance has occurred, they may serve a notice of correction on the owner(s) of the property on which the violation is situated. The owner(s) of record shall have ninety (90) days to take corrective action.

B. Enforcement.

If an applicant for new or expanded water service fails to comply with the provisions of this Ordinance, the MPWD may require the applicant to resubmit its water service application and revised Landscape Project Application for approval and may withhold approval of the application until the applicant complies with the terms of this Ordinance. In addition to any other remedy provided herein, the MPWD may also refer enforcement of violations under this Ordinance to the City Attorney or County Counsel of the municipality where the violation occurred.

XXIII. Public Education

A. Publications. Education is a critical component to promote the efficient use of water in landscapes. The use of appropriate principles of design, installation, management and maintenance that save water is encouraged in the community.

i. The local agency shall provide information to all applicants regarding the design, installation, management, and maintenance of water-efficient landscapes and irrigation systems.

B. Model Homes. All model homes that are landscaped shall use signs and written information to demonstrate the principles of water-efficient landscapes that are described in this Ordinance.

i. Signs shall be used to identify the model as an example of a water efficient landscape featuring elements such as hydrozones, irrigation equipment, and others that contribute to the overall water efficient theme. Signage shall include information about the site water use as designed per the local ordinance; specify who designed and installed the water efficient landscape; and demonstrate low water use approaches to landscaping such as using native plants, graywater systems, and rainwater catchment systems.

ii. Information shall be provided about designing, installing, managing, and maintaining water efficient landscapes.

XXIV. Severability

If any section, subsection, provision or part of this Ordinance, or its application to any person or circumstance, is held to be unconstitutional or otherwise invalid, the remainder of this Ordinance, and the application of such provision to other person or circumstances, shall not be affected thereby and shall remain in full force and effect and, to that end, the provisions of this Ordinance are severable.

XXV. Effective Date

This Ordinance shall take effect and be in full force as of the date of its enactment. All prior ordinances or parts of ordinances that may be inconsistent with this Ordinance No. 115 hereby are repealed.

REGULARLY PASSED AND ADOPTED at a meeting of the Board of Directors of the Mid-Peninsula Water District duly held on the 16th day of December 2015, by the following vote:

AYES:

NOES:

ABSENT:

_____
President of the Board of Directors
Mid-Peninsula Water District

ATTEST:

_____
Secretary of the Board

Appendix A: Reference Evapotranspiration (ETo) Table

Appendix A - Reference Evapotranspiration (ETo) Table*													
County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
ALAMEDA													
Fremont	1.5	1.9	3.4	4.7	5.4	6.3	6.7	6.0	4.5	3.4	1.8	1.5	47.0
Livermore	1.2	1.5	2.9	4.4	5.9	6.6	7.4	6.4	5.3	3.2	1.5	0.9	47.2
Oakland	1.5	1.5	2.8	3.9	5.1	5.3	6.0	5.5	4.8	3.1	1.4	0.9	41.8
Oakland Foothills	1.1	1.4	2.7	3.7	5.1	6.4	5.8	4.9	3.6	2.6	1.4	1.0	39.6
Pleasanton	0.8	1.5	2.9	4.4	5.6	6.7	7.4	6.4	4.7	3.3	1.5	1.0	46.2
Union City	1.4	1.8	3.1	4.2	5.4	5.9	6.4	5.7	4.4	3.1	1.5	1.2	44.2
ALPINE													
Markleeville	0.7	0.9	2.0	3.5	5.0	6.1	7.3	6.4	4.4	2.6	1.2	0.5	40.6
AMADOR													
Jackson	1.2	1.5	2.8	4.4	6.0	7.2	7.9	7.2	5.3	3.2	1.4	0.9	48.9
Shanandoah Valley	1.0	1.7	2.9	4.4	5.6	6.8	7.9	7.1	5.2	3.6	1.7	1.0	48.8
BUTTE													
Chico	1.2	1.8	2.9	4.7	6.1	7.4	8.5	7.3	5.4	3.7	1.7	1.0	51.7
Durham	1.1	1.8	3.2	5.0	6.5	7.4	7.8	6.9	5.3	3.6	1.7	1.0	51.1
Gridley	1.2	1.8	3.0	4.7	6.1	7.7	8.5	7.1	5.4	3.7	1.7	1.0	51.9
Oroville	1.2	1.7	2.8	4.7	6.1	7.6	8.5	7.3	5.3	3.7	1.7	1.0	51.5
CALAVERAS													
San Andreas	1.2	1.5	2.8	4.4	6.0	7.3	7.9	7.0	5.3	3.2	1.4	0.7	48.8
COLUSA													
Colusa	1.0	1.7	3.4	5.0	6.4	7.6	8.3	7.2	5.4	3.8	1.8	1.1	52.8
Williams	1.2	1.7	2.9	4.5	6.1	7.2	8.5	7.3	5.3	3.4	1.6	1.0	50.8
CONTRA COSTA													
Brentwood	1.0	1.5	2.9	4.5	6.1	7.1	7.9	6.7	5.2	3.2	1.4	0.7	48.3
Concord	1.1	1.4	2.4	4.0	5.5	5.9	7.0	6.0	4.8	3.2	1.3	0.7	43.4
Courtland	0.9	1.5	2.9	4.4	6.1	6.9	7.9	6.7	5.3	3.2	1.4	0.7	48.0
Martinez	1.2	1.4	2.4	3.9	5.3	5.6	6.7	5.6	4.7	3.1	1.2	0.7	41.8
Moraga	1.2	1.5	3.4	4.2	5.5	6.1	6.7	5.9	4.6	3.2	1.6	1.0	44.9
Pittsburg	1.0	1.5	2.8	4.1	5.6	6.4	7.4	6.4	5.0	3.2	1.3	0.7	45.4
Walnut Creek	0.8	1.5	2.9	4.4	5.6	6.7	7.4	6.4	4.7	3.3	1.5	1.0	46.2
DEL NORTE													
Crescent City	0.5	0.9	2.0	3.0	3.7	3.5	4.3	3.7	3.0	2.0	0.9	0.5	27.7
EL DORADO													
Camino	0.9	1.7	2.5	3.9	5.9	7.2	7.8	6.8	5.1	3.1	1.5	0.9	47.3
FRESNO													
Clovis	1.0	1.5	3.2	4.8	6.4	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.4
Coalinga	1.2	1.7	3.1	4.6	6.2	7.2	8.5	7.3	5.3	3.4	1.6	0.7	50.9
Firebaugh	1.0	1.8	3.7	5.7	7.3	8.1	8.2	7.2	5.5	3.9	2.0	1.1	55.4
FivePoints	1.3	2.0	4.0	6.1	7.7	8.5	8.7	8.0	6.2	4.5	2.4	1.2	60.4
Fresno	0.9	1.7	3.3	4.8	6.7	7.8	8.4	7.1	5.2	3.2	1.4	0.6	51.1
Fresno State	0.9	1.6	3.2	5.2	7.0	8.0	8.7	7.6	5.4	3.6	1.7	0.9	53.7
Friant	1.2	1.5	3.1	4.7	6.4	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.3
Kerman	0.9	1.5	3.2	4.8	6.6	7.7	8.4	7.2	5.3	3.4	1.4	0.7	51.2
Kingsburg	1.0	1.5	3.4	4.8	6.6	7.7	8.4	7.2	5.3	3.4	1.4	0.7	51.6
Mendota	1.5	2.5	4.6	6.2	7.9	8.6	8.8	7.5	5.9	4.5	2.4	1.5	61.7
Orange Cove	1.2	1.9	3.5	4.7	7.4	8.5	8.9	7.9	5.9	3.7	1.8	1.2	56.7
Panoche	1.1	2.0	4.0	5.6	7.8	8.5	8.3	7.3	5.6	3.9	1.8	1.2	57.2
Parlier	1.0	1.9	3.6	5.2	6.8	7.6	8.1	7.0	5.1	3.4	1.7	0.9	52.0

Appendix A - Reference Evapotranspiration (ETo) Table*													
County and City	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual ETo**
FRESNO													
Reedley	1.1	1.5	3.2	4.7	6.4	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.3
Westlands	0.9	1.7	3.8	6.3	8.0	8.6	8.6	7.8	5.9	4.3	2.1	1.1	58.8
GLENN													
Orland	1.1	1.8	3.4	5.0	6.4	7.5	7.9	6.7	5.3	3.9	1.8	1.4	52.1
Willows	1.2	1.7	2.9	4.7	6.1	7.2	8.5	7.3	5.3	3.6	1.7	1.0	51.3
HUMBOLDT													
Eureka	0.5	1.1	2.0	3.0	3.7	3.7	3.7	3.7	3.0	2.0	0.9	0.5	27.5
Ferndale	0.5	1.1	2.0	3.0	3.7	3.7	3.7	3.7	3.0	2.0	0.9	0.5	27.5
Garberville	0.6	1.2	2.2	3.1	4.5	5.0	5.5	4.9	3.8	2.4	1.0	0.7	34.9
Hoopa	0.5	1.1	2.1	3.0	4.4	5.4	6.1	5.1	3.8	2.4	0.9	0.7	35.6
IMPERIAL													
Brawley	2.8	3.8	5.9	8.0	10.4	11.5	11.7	10.0	8.4	6.2	3.5	2.1	84.2
Calipatria/Mulberry	2.4	3.2	5.1	6.8	8.6	9.2	9.2	8.6	7.0	5.2	3.1	2.3	70.7
El Centro	2.7	3.5	5.6	7.9	10.1	11.1	11.6	9.5	8.3	6.1	3.3	2.0	81.7
Holtville	2.8	3.8	5.9	7.9	10.4	11.6	12.0	10.0	8.6	6.2	3.5	2.1	84.7
Meloland	2.5	3.2	5.5	7.5	8.9	9.2	9.0	8.5	6.8	5.3	3.1	2.2	71.6
Palo Verde II	2.5	3.3	5.7	6.9	8.5	8.9	8.6	7.9	6.2	4.5	2.9	2.3	68.2
Seeley	2.7	3.5	5.9	7.7	9.7	10.1	9.3	8.3	6.9	5.5	3.4	2.2	75.4
Westmoreland	2.4	3.3	5.3	6.9	8.7	9.6	9.6	8.7	6.9	5.0	3.0	2.2	71.4
Yuma	2.5	3.4	5.3	6.9	8.7	9.6	9.6	8.7	6.9	5.0	3.0	2.2	71.6
INYO													
Bishop	1.7	2.7	4.8	6.7	8.2	10.9	7.4	9.6	7.4	4.8	2.5	1.6	68.3
Death Valley Jct	2.2	3.3	5.4	7.7	9.8	11.1	11.4	10.1	8.3	5.4	2.9	1.7	79.1
Independence	1.7	2.7	3.4	6.6	8.5	9.5	9.8	8.5	7.1	3.9	2.0	1.5	65.2
Lower Haiwee Res.	1.8	2.7	4.4	7.1	8.5	9.5	9.8	8.5	7.1	4.2	2.6	1.5	67.6
Oasis	2.7	2.8	5.9	8.0	10.4	11.7	11.6	10.0	8.4	6.2	3.4	2.1	83.1
KERN													
Arvin	1.2	1.8	3.5	4.7	6.6	7.4	8.1	7.3	5.3	3.4	1.7	1.0	51.9
Bakersfield	1.0	1.8	3.5	4.7	6.6	7.7	8.5	7.3	5.3	3.5	1.6	0.9	52.4
Bakersfield/Bonanza	1.2	2.2	3.7	5.7	7.4	8.2	8.7	7.8	5.7	4.0	2.1	1.2	57.9
Bakersfield/Greenlee	1.2	2.2	3.7	5.7	7.4	8.2	8.7	7.8	5.7	4.0	2.1	1.2	57.9
Belridge	1.4	2.2	4.1	5.5	7.7	8.5	8.6	7.8	6.0	3.8	2.0	1.5	59.2
Blackwells Corner	1.4	2.1	3.8	5.4	7.0	7.8	8.5	7.7	5.8	3.9	1.9	1.2	56.6
Buttonwillow	1.0	1.8	3.2	4.7	6.6	7.7	8.5	7.3	5.4	3.4	1.5	0.9	52.0
China Lake	2.1	3.2	5.3	7.7	9.2	10.0	11.0	9.8	7.3	4.9	2.7	1.7	74.8
Delano	0.9	1.8	3.4	4.7	6.6	7.7	8.5	7.3	5.4	3.4	1.4	0.7	52.0
Famoso	1.3	1.9	3.5	4.8	6.7	7.6	8.0	7.3	5.5	3.5	1.7	1.3	53.1
Grapevine	1.3	1.8	3.1	4.4	5.6	6.8	7.6	6.8	5.9	3.4	1.9	1.0	49.5
Inyokern	2.0	3.1	4.9	7.3	8.5	9.7	11.0	9.4	7.1	5.1	2.6	1.7	72.4
Isabella Dam	1.2	1.4	2.8	4.4	5.8	7.3	7.9	7.0	5.0	3.2	1.7	0.9	48.4
Lamont	1.3	2.4	4.4	4.6	6.5	7.0	8.8	7.6	5.7	3.7	1.6	0.8	54.4
Lost Hills	1.6	2.2	3.7	5.1	6.8	7.8	8.7	7.8	5.7	4.0	2.1	1.6	57.1
McFarland/Kern	1.2	2.1	3.7	5.6	7.3	8.0	8.3	7.4	5.6	4.1	2.0	1.2	56.5
Shafter	1.0	1.7	3.4	5.0	6.6	7.7	8.3	7.3	5.4	3.4	1.5	0.9	52.1
Taft	1.3	1.8	3.1	4.3	6.2	7.3	8.5	7.3	5.4	3.4	1.7	1.0	51.2
Tehachapi	1.4	1.8	3.2	5.0	6.1	7.7	7.9	7.3	5.9	3.4	2.1	1.2	52.9
KINGS													
Caruthers	1.6	2.5	4.0	5.7	7.8	8.7	9.3	8.4	6.3	4.4	2.4	1.6	62.7

Appendix A - Reference Evapotranspiration (ETo) Table*													
County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
KINGS													
Corcoran	1.6	2.2	3.7	5.1	6.8	7.8	8.7	7.8	5.7	4.0	2.1	1.6	57.1
Hanford	0.9	1.5	3.4	5.0	6.6	7.7	8.3	7.2	5.4	3.4	1.4	0.7	51.5
Kettleman	1.1	2.0	4.0	6.0	7.5	8.5	9.1	8.2	6.1	4.5	2.2	1.1	60.2
Lemoore	0.9	1.5	3.4	5.0	6.6	7.7	8.3	7.3	5.4	3.4	1.4	0.7	51.7
Stratford	0.9	1.9	3.9	6.1	7.8	8.6	8.8	7.7	5.9	4.1	2.1	1.0	58.7
LAKE													
Lakeport	1.1	1.3	2.6	3.5	5.1	6.0	7.3	6.1	4.7	2.9	1.2	0.9	42.8
Lower Lake	1.2	1.4	2.7	4.5	5.3	6.3	7.4	6.4	5.0	3.1	1.3	0.9	45.4
LASSEN													
Buntingville	1.0	1.7	3.5	4.9	6.2	7.3	8.4	7.5	5.4	3.4	1.5	0.9	51.8
Ravendale	0.6	1.1	2.3	4.1	5.6	6.7	7.9	7.3	4.7	2.8	1.2	0.5	44.9
Susanville	0.7	1.0	2.2	4.1	5.6	6.5	7.8	7.0	4.6	2.8	1.2	0.5	44.0
LOS ANGELES													
Burbank	2.1	2.8	3.7	4.7	5.1	6.0	6.6	6.7	5.4	4.0	2.6	2.0	51.7
Claremont	2.0	2.3	3.4	4.6	5.0	6.0	7.0	7.0	5.3	4.0	2.7	2.1	51.3
El Dorado	1.7	2.2	3.6	4.8	5.1	5.7	5.9	5.9	4.4	3.2	2.2	1.7	46.3
Glendale	2.0	2.2	3.3	3.8	4.7	4.8	5.7	5.6	4.3	3.3	2.2	1.8	43.7
Glendora	2.0	2.5	3.6	4.9	5.4	6.1	7.3	6.8	5.7	4.2	2.6	2.0	53.1
Gorman	1.6	2.2	3.4	4.6	5.5	7.4	7.7	7.1	5.9	3.6	2.4	1.1	52.4
Hollywood Hills	2.1	2.2	3.8	5.4	6.0	6.5	6.7	6.4	5.2	3.7	2.8	2.1	52.8
Lancaster	2.1	3.0	4.6	5.9	8.5	9.7	11.0	9.8	7.3	4.6	2.8	1.7	71.1
Long Beach	1.8	2.1	3.3	3.9	4.5	4.3	5.3	4.7	3.7	2.8	1.8	1.5	39.7
Los Angeles	2.2	2.7	3.7	4.7	5.5	5.8	6.2	5.9	5.0	3.9	2.6	1.9	50.1
Monrovia	2.2	2.3	3.8	4.3	5.5	5.9	6.9	6.4	5.1	3.2	2.5	2.0	50.2
Palmdale	2.0	2.6	4.6	6.2	7.3	8.9	9.8	9.0	6.5	4.7	2.7	2.1	66.2
Pasadena	2.1	2.7	3.7	4.7	5.1	6.0	7.1	6.7	5.6	4.2	2.6	2.0	52.3
Pearblossom	1.7	2.4	3.7	4.7	7.3	7.7	9.9	7.9	6.4	4.0	2.6	1.6	59.9
Pomona	1.7	2.0	3.4	4.5	5.0	5.8	6.5	6.4	4.7	3.5	2.3	1.7	47.5
Redondo Beach	2.2	2.4	3.3	3.8	4.5	4.7	5.4	4.8	4.4	2.8	2.4	2.0	42.6
San Fernando	2.0	2.7	3.5	4.6	5.5	5.9	7.3	6.7	5.3	3.9	2.6	2.0	52.0
Santa Clarita	2.8	2.8	4.1	5.6	6.0	6.8	7.6	7.8	5.8	5.2	3.7	3.2	61.5
Santa Monica	1.8	2.1	3.3	4.5	4.7	5.0	5.4	5.4	3.9	3.4	2.4	2.2	44.2
MADERA													
Chowchilla	1.0	1.4	3.2	4.7	6.6	7.8	8.5	7.3	5.3	3.4	1.4	0.7	51.4
Madera	0.9	1.4	3.2	4.8	6.6	7.8	8.5	7.3	5.3	3.4	1.4	0.7	51.5
Raymond	1.2	1.5	3.0	4.6	6.1	7.6	8.4	7.3	5.2	3.4	1.4	0.7	50.5
MARIN													
Black Point	1.1	1.7	3.0	4.2	5.2	6.2	6.6	5.8	4.3	2.8	1.3	0.9	43.0
Novato	1.3	1.5	2.4	3.5	4.4	6.0	5.9	5.4	4.4	2.8	1.4	0.7	39.8
Point San Pedro	1.1	1.7	3.0	4.2	5.2	6.2	6.6	5.8	4.3	2.8	1.3	0.9	43.0
San Rafael	1.2	1.3	2.4	3.3	4.0	4.8	4.8	4.9	4.3	2.7	1.3	0.7	35.8
MARIPOSA													
Coulterville	1.1	1.5	2.8	4.4	5.9	7.3	8.1	7.0	5.3	3.4	1.4	0.7	48.8
Mariposa	1.1	1.5	2.8	4.4	5.9	7.4	8.2	7.1	5.0	3.4	1.4	0.7	49.0
Yosemite Village	0.7	1.0	2.3	3.7	5.1	6.5	7.1	6.1	4.4	2.9	1.1	0.6	41.4
MENDOCINO													
Fort Bragg	0.9	1.3	2.2	3.0	3.7	3.5	3.7	3.7	3.0	2.3	1.2	0.7	29.0
Hopland	1.1	1.3	2.6	3.4	5.0	5.9	6.5	5.7	4.5	2.8	1.3	0.7	40.9

Appendix A - Reference Evapotranspiration (ETo) Table*													
County and City	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual ETo**
MENDOCINO													
Point Arena	1.0	1.3	2.3	3.0	3.7	3.9	3.7	3.7	3.0	2.3	1.2	0.7	29.6
Sanel Valley	1.0	1.6	3.0	4.6	6.0	7.0	8.0	7.0	5.2	3.4	1.4	0.9	49.1
Ukiah	1.0	1.3	2.6	3.3	5.0	5.8	6.7	5.9	4.5	2.8	1.3	0.7	40.9
MERCED													
Kesterson	0.9	1.7	3.4	5.5	7.3	8.2	8.6	7.4	5.5	3.8	1.8	0.9	55.1
Los Banos	1.0	1.5	3.2	4.7	6.1	7.4	8.2	7.0	5.3	3.4	1.4	0.7	50.0
Merced	1.0	1.5	3.2	4.7	6.6	7.9	8.5	7.2	5.3	3.4	1.4	0.7	51.5
MODOC													
Modoc/Alturas	0.9	1.4	2.8	3.7	5.1	6.2	7.5	6.6	4.6	2.8	1.2	0.7	43.2
MONO													
Bridgeport	0.7	0.9	2.2	3.8	5.5	6.6	7.4	6.7	4.7	2.7	1.2	0.5	43.0
MONTEREY													
Arroyo Seco	1.5	2.0	3.7	5.4	6.3	7.3	7.2	6.7	5.0	3.9	2.0	1.6	52.6
Castroville	1.4	1.7	3.0	4.2	4.6	4.8	4.0	3.8	3.0	2.6	1.6	1.4	36.2
Gonzales	1.3	1.7	3.4	4.7	5.4	6.3	6.3	5.9	4.4	3.4	1.9	1.3	45.7
Greenfield	1.8	2.2	3.4	4.8	5.6	6.3	6.5	6.2	4.8	3.7	2.4	1.8	49.5
King City	1.7	2.0	3.4	4.4	4.4	5.6	6.1	6.7	6.5	5.2	2.2	1.3	49.6
King City-Oasis Rd.	1.4	1.9	3.6	5.3	6.5	7.3	7.4	6.8	5.1	4.0	2.0	1.5	52.7
Long Valley	1.5	1.9	3.2	4.1	5.8	6.5	7.3	6.7	5.3	3.6	2.0	1.2	49.1
Monterey	1.7	1.8	2.7	3.5	4.0	4.1	4.3	4.2	3.5	2.8	1.9	1.5	36.0
Pajaro	1.8	2.2	3.7	4.8	5.3	5.7	5.6	5.3	4.3	3.4	2.4	1.8	46.1
Salinas	1.6	1.9	2.7	3.8	4.8	4.7	5.0	4.5	4.0	2.9	1.9	1.3	39.1
Salinas North	1.2	1.5	2.9	4.1	4.6	5.2	4.5	4.3	3.2	2.8	1.5	1.2	36.9
San Ardo	1.0	1.7	3.1	4.5	5.9	7.2	8.1	7.1	5.1	3.1	1.5	1.0	49.0
San Juan	1.8	2.1	3.4	4.6	5.3	5.7	5.5	4.9	3.8	3.2	2.2	1.9	44.2
Soledad	1.7	2.0	3.4	4.4	5.5	5.4	6.5	6.2	5.2	3.7	2.2	1.5	47.7
NAPA													
Angwin	1.8	1.9	3.2	4.7	5.8	7.3	8.1	7.1	5.5	4.5	2.9	2.1	54.9
Carneros	0.8	1.5	3.1	4.6	5.5	6.6	6.9	6.2	4.7	3.5	1.4	1.0	45.8
Oakville	1.0	1.5	2.9	4.7	5.8	6.9	7.2	6.4	4.9	3.5	1.6	1.2	47.7
St Helena	1.2	1.5	2.8	3.9	5.1	6.1	7.0	6.2	4.8	3.1	1.4	0.9	44.1
Yountville	1.3	1.7	2.8	3.9	5.1	6.0	7.1	6.1	4.8	3.1	1.5	0.9	44.3
NEVADA													
Grass Valley	1.1	1.5	2.6	4.0	5.7	7.1	7.9	7.1	5.3	3.2	1.5	0.9	48.0
Nevada City	1.1	1.5	2.6	3.9	5.8	6.9	7.9	7.0	5.3	3.2	1.4	0.9	47.4
ORANGE													
Irvine	2.2	2.5	3.7	4.7	5.2	5.9	6.3	6.2	4.6	3.7	2.6	2.3	49.6
Laguna Beach	2.2	2.7	3.4	3.8	4.6	4.6	4.9	4.9	4.4	3.4	2.4	2.0	43.2
Santa Ana	2.2	2.7	3.7	4.5	4.6	5.4	6.2	6.1	4.7	3.7	2.5	2.0	48.2
PLACER													
Auburn	1.2	1.7	2.8	4.4	6.1	7.4	8.3	7.3	5.4	3.4	1.6	1.0	50.6
Blue Canyon	0.7	1.1	2.1	3.4	4.8	6.0	7.2	6.1	4.6	2.9	0.9	0.6	40.5
Colfax	1.1	1.5	2.6	4.0	5.8	7.1	7.9	7.0	5.3	3.2	1.4	0.9	47.9
Roseville	1.1	1.7	3.1	4.7	6.2	7.7	8.5	7.3	5.6	3.7	1.7	1.0	52.2
Soda Springs	0.7	0.7	1.8	3.0	4.3	5.3	6.2	5.5	4.1	2.5	0.7	0.7	35.4
Tahoe City	0.7	0.7	1.7	3.0	4.3	5.4	6.1	5.6	4.1	2.4	0.8	0.6	35.5
Truckee	0.7	0.7	1.7	3.2	4.4	5.4	6.4	5.7	4.1	2.4	0.8	0.6	36.2

Appendix A - Reference Evapotranspiration (ETo) Table*													
County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
PLUMAS													
Portola	0.7	0.9	1.9	3.5	4.9	5.9	7.3	5.9	4.3	2.7	0.9	0.5	39.4
Quincy	0.7	0.9	2.2	3.5	4.9	5.9	7.3	5.9	4.4	2.8	1.2	0.5	40.2
RIVERSIDE													
Beaumont	2.0	2.3	3.4	4.4	6.1	7.1	7.6	7.9	6.0	3.9	2.6	1.7	55.0
Blythe	2.4	3.3	5.3	6.9	8.7	9.6	9.6	8.7	6.9	5.0	3.0	2.2	71.4
Cathedral City	1.6	2.2	3.7	5.1	6.8	7.8	8.7	7.8	5.7	4.0	2.1	1.6	57.1
Coachella	2.9	4.4	6.2	8.4	10.5	11.9	12.3	10.1	8.9	6.2	3.8	2.4	88.1
Desert Center	2.9	4.1	6.4	8.5	11.0	12.1	12.2	11.1	9.0	6.4	3.9	2.6	90.0
Elsinore	2.1	2.8	3.9	4.4	5.9	7.1	7.6	7.0	5.8	3.9	2.6	1.9	55.0
Indio	3.1	3.6	6.5	8.3	10.5	11.0	10.8	9.7	8.3	5.9	3.7	2.7	83.9
La Quinta	2.4	2.8	5.2	6.5	8.3	8.7	8.5	7.9	6.5	4.5	2.7	2.2	66.2
Mecca	2.6	3.3	5.7	7.2	8.6	9.0	8.8	8.2	6.8	5.0	3.2	2.4	70.8
Oasis	2.9	3.3	5.3	6.1	8.5	8.9	8.7	7.9	6.9	4.8	2.9	2.3	68.4
Palm Desert	2.5	3.4	5.3	6.9	8.7	9.6	9.6	8.7	6.9	5.0	3.0	2.2	71.6
Palm Springs	2.0	2.9	4.9	7.2	8.3	8.5	11.6	8.3	7.2	5.9	2.7	1.7	71.1
Rancho California	1.8	2.2	3.4	4.8	5.6	6.3	6.5	6.2	4.8	3.7	2.4	1.8	49.5
Rancho Mirage	2.4	3.3	5.3	6.9	8.7	9.6	9.6	8.7	6.9	5.0	3.0	2.2	71.4
Ripley	2.7	3.3	5.6	7.2	8.7	8.7	8.4	7.6	6.2	4.6	2.8	2.2	67.8
Salton Sea North	2.5	3.3	5.5	7.2	8.8	9.3	9.2	8.5	6.8	5.2	3.1	2.3	71.7
Temecula East II	2.3	2.4	4.1	4.9	6.4	7.0	7.8	7.4	5.7	4.1	2.6	2.2	56.7
Thermal	2.4	3.3	5.5	7.6	9.1	9.6	9.3	8.6	7.1	5.2	3.1	2.1	72.8
Riverside UC	2.5	2.9	4.2	5.3	5.9	6.6	7.2	6.9	5.4	4.1	2.9	2.6	56.4
Winchester	2.3	2.4	4.1	4.9	6.4	6.9	7.7	7.5	6.0	3.9	2.6	2.1	56.8
SACRAMENTO													
Fair Oaks	1.0	1.6	3.4	4.1	6.5	7.5	8.1	7.1	5.2	3.4	1.5	1.0	50.5
Sacramento	1.0	1.8	3.2	4.7	6.4	7.7	8.4	7.2	5.4	3.7	1.7	0.9	51.9
Twitchell Island	1.2	1.8	3.9	5.3	7.4	8.8	9.1	7.8	5.9	3.8	1.7	1.2	57.9
SAN BENITO													
Hollister	1.5	1.8	3.1	4.3	5.5	5.7	6.4	5.9	5.0	3.5	1.7	1.1	45.1
San Benito	1.2	1.6	3.1	4.6	5.6	6.4	6.9	6.5	4.8	3.7	1.7	1.2	47.2
San Juan Valley	1.4	1.8	3.4	4.5	6.0	6.7	7.1	6.4	5.0	3.5	1.8	1.4	49.1
SAN BERNARDINO													
Baker	2.7	3.9	6.1	8.3	10.4	11.8	12.2	11.0	8.9	6.1	3.3	2.1	86.6
Barstow NE	2.2	2.9	5.3	6.9	9.0	10.1	9.9	8.9	6.8	4.8	2.7	2.1	71.7
Big Bear Lake	1.8	2.6	4.6	6.0	7.0	7.6	8.1	7.4	5.4	4.1	2.4	1.8	58.6
Chino	2.1	2.9	3.9	4.5	5.7	6.5	7.3	7.1	5.9	4.2	2.6	2.0	54.6
Crestline	1.5	1.9	3.3	4.4	5.5	6.6	7.8	7.1	5.4	3.5	2.2	1.6	50.8
Lake Arrowhead	1.8	2.6	4.6	6.0	7.0	7.6	8.1	7.4	5.4	4.1	2.4	1.8	58.6
Lucerne Valley	2.2	2.9	5.1	6.5	9.1	11.0	11.4	9.9	7.4	5.0	3.0	1.8	75.3
Needles	3.2	4.2	6.6	8.9	11.0	12.4	12.8	11.0	8.9	6.6	4.0	2.7	92.1
Newberry Springs	2.1	2.9	5.3	8.4	9.8	10.9	11.1	9.9	7.6	5.2	3.1	2.0	78.2
San Bernardino	2.0	2.7	3.8	4.6	5.7	6.9	7.9	7.4	5.9	4.2	2.6	2.0	55.6
Twentynine Palms	2.6	3.6	5.9	7.9	10.1	11.2	11.2	10.3	8.6	5.9	3.4	2.2	82.9
Victorville	2.0	2.6	4.6	6.2	7.3	8.9	9.8	9.0	6.5	4.7	2.7	2.1	66.2
SAN DIEGO													
Chula Vista	2.2	2.7	3.4	3.8	4.9	4.7	5.5	4.9	4.5	3.4	2.4	2.0	44.2
Escondido SPV	2.4	2.6	3.9	4.7	5.9	6.5	7.1	6.7	5.3	3.9	2.8	2.3	54.2
Miramar	2.3	2.5	3.7	4.1	5.1	5.4	6.1	5.8	4.5	3.3	2.4	2.1	47.1

Appendix A - Reference Evapotranspiration (ETo) Table*													
County and City	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual ETo**
SAN DIEGO													
Oceanside	2.2	2.7	3.4	3.7	4.9	4.6	4.6	5.1	4.1	3.3	2.4	2.0	42.9
Otay Lake	2.3	2.7	3.9	4.6	5.6	5.9	6.2	6.1	4.8	3.7	2.6	2.2	50.4
Pine Valley	1.5	2.4	3.8	5.1	6.0	7.0	7.8	7.3	6.0	4.0	2.2	1.7	54.8
Ramona	2.1	2.1	3.4	4.6	5.2	6.3	6.7	6.8	5.3	4.1	2.8	2.1	51.6
San Diego	2.1	2.4	3.4	4.6	5.1	5.3	5.7	5.6	4.3	3.6	2.4	2.0	46.5
Santee	2.1	2.7	3.7	4.5	5.5	6.1	6.6	6.2	5.4	3.8	2.6	2.0	51.1
Torrey Pines	2.2	2.3	3.4	3.9	4.0	4.1	4.6	4.7	3.8	2.8	2.0	2.0	39.8
Warner Springs	1.6	2.7	3.7	4.7	5.7	7.6	8.3	7.7	6.3	4.0	2.5	1.3	56.0
SAN FRANCISCO													
San Francisco	1.5	1.3	2.4	3.0	3.7	4.6	4.9	4.8	4.1	2.8	1.3	0.7	35.1
SAN JOAQUIN													
Farmington	1.5	1.5	2.9	4.7	6.2	7.6	8.1	6.8	5.3	3.3	1.4	0.7	50.0
Lodi West	1.0	1.6	3.3	4.3	6.3	6.9	7.3	6.4	4.5	3.0	1.4	0.8	46.7
Manteca	0.9	1.7	3.4	5.0	6.5	7.5	8.0	7.1	5.2	3.3	1.6	0.9	51.2
Stockton	0.8	1.5	2.9	4.7	6.2	7.4	8.1	6.8	5.3	3.2	1.4	0.6	49.1
Tracy	1.0	1.5	2.9	4.5	6.1	7.3	7.9	6.7	5.3	3.2	1.3	0.7	48.5
SAN LUIS OBISPO													
Arroyo Grande	2.0	2.2	3.2	3.8	4.3	4.7	4.3	4.6	3.8	3.2	2.4	1.7	40.0
Atascadero	1.2	1.5	2.8	3.9	4.5	6.0	6.7	6.2	5.0	3.2	1.7	1.0	43.7
Morro Bay	2.0	2.2	3.1	3.5	4.3	4.5	4.6	4.6	3.8	3.5	2.1	1.7	39.9
Nipomo	2.2	2.5	3.8	5.1	5.7	6.2	6.4	6.1	4.9	4.1	2.9	2.3	52.1
Paso Robles	1.6	2.0	3.2	4.3	5.5	6.3	7.3	6.7	5.1	3.7	2.1	1.4	49.0
San Luis Obispo	2.0	2.2	3.2	4.1	4.9	5.3	4.6	5.5	4.4	3.5	2.4	1.7	43.8
San Miguel	1.6	2.0	3.2	4.3	5.0	6.4	7.4	6.8	5.1	3.7	2.1	1.4	49.0
San Simeon	2.0	2.0	2.9	3.5	4.2	4.4	4.6	4.3	3.5	3.1	2.0	1.7	38.1
SAN MATEO													
Hal Moon Bay	1.5	1.7	2.4	3.0	3.9	4.3	4.3	4.2	3.5	2.8	1.3	1.0	33.7
Redwood City	1.5	1.8	2.9	3.8	5.2	5.3	6.2	5.6	4.8	3.1	1.7	1.0	42.8
Woodside	1.8	2.2	3.4	4.8	5.6	6.3	6.5	6.2	4.8	3.7	2.4	1.8	49.5
SANTA BARBARA													
Betteravia	2.1	2.6	4.0	5.2	6.0	5.9	5.8	5.4	4.1	3.3	2.7	2.1	49.1
Carpenteria	2.0	2.4	3.2	3.9	4.8	5.2	5.5	5.7	4.5	3.4	2.4	2.0	44.9
Cuyama	2.1	2.4	3.8	5.4	6.9	7.9	8.5	7.7	5.9	4.5	2.6	2.0	59.7
Goleta	2.1	2.5	3.9	5.1	5.7	5.7	5.4	5.4	4.2	3.2	2.8	2.2	48.1
Goleta Foothills	2.3	2.6	3.7	5.4	5.3	5.6	5.5	5.7	4.5	3.9	2.8	2.3	49.6
Guadalupe	2.0	2.2	3.2	3.7	4.9	4.6	4.5	4.6	4.1	3.3	2.4	1.7	41.1
Lompoc	2.0	2.2	3.2	3.7	4.8	4.6	4.9	4.8	3.9	3.2	2.4	1.7	41.1
Los Alamos	1.8	2.0	3.2	4.1	4.9	5.3	5.7	5.5	4.4	3.7	2.4	1.6	44.6
Santa Barbara	2.0	2.5	3.2	3.8	4.6	5.1	5.5	4.5	3.4	2.4	1.8	1.8	40.6
Santa Maria	1.8	2.3	3.7	5.1	5.7	5.8	5.6	5.3	4.2	3.5	2.4	1.9	47.4
Santa Ynez	1.7	2.2	3.5	5.0	5.8	6.2	6.4	6.0	4.5	3.6	2.2	1.7	48.7
Sisquoc	2.1	2.5	3.8	4.1	6.1	6.3	6.4	5.8	4.7	3.4	2.3	1.8	49.2
Solvang	2.0	2.0	3.3	4.3	5.0	5.6	6.1	5.6	4.4	3.7	2.2	1.6	45.6
SANTA CLARA													
Gilroy	1.3	1.8	3.1	4.1	5.3	5.6	6.1	5.5	4.7	3.4	1.7	1.1	43.6
Los Gatos	1.5	1.8	2.8	3.9	5.0	5.6	6.2	5.5	4.7	3.2	1.7	1.1	42.9
Morgan Hill	1.5	1.8	3.4	4.2	6.3	7.0	7.1	6.0	5.1	3.7	1.9	1.4	49.5
Palo Alto	1.5	1.8	2.8	3.8	5.2	5.3	6.2	5.6	5.0	3.2	1.7	1.0	43.0

Appendix A - Reference Evapotranspiration (ETo) Table*													
County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
SANTA CLARA													
San Jose	1.5	1.8	3.1	4.1	5.5	5.8	6.5	5.9	5.2	3.3	1.8	1.0	45.3
SANTA CRUZ													
De Laveaga	1.4	1.9	3.3	4.7	4.9	5.3	5.0	4.8	3.6	3.0	1.6	1.3	40.8
Green Valley Rd	1.2	1.8	3.2	4.5	4.6	5.4	5.2	5.0	3.7	3.1	1.6	1.3	40.6
Santa Cruz	1.5	1.8	2.6	3.5	4.3	4.4	4.8	4.4	3.8	2.8	1.7	1.2	36.6
Watsonville	1.5	1.8	2.7	3.7	4.6	4.5	4.9	4.2	4.0	2.9	1.8	1.2	37.7
Webb	1.8	2.2	3.7	4.8	5.3	5.7	5.6	5.3	4.3	3.4	2.4	1.8	46.2
SHASTA													
Burney	0.7	1.0	2.1	3.5	4.9	5.9	7.4	6.4	4.4	2.9	0.9	0.6	40.9
Fall River Mills	0.6	1.0	2.1	3.7	5.0	6.1	7.8	6.7	4.6	2.8	0.9	0.5	41.8
Glenburn	0.6	1.0	2.1	3.7	5.0	6.3	7.8	6.7	4.7	2.8	0.9	0.6	42.1
McArthur	0.7	1.4	2.9	4.2	5.6	6.9	8.2	7.2	5.0	3.0	1.1	0.6	46.8
Redding	1.2	1.4	2.6	4.1	5.6	7.1	8.5	7.3	5.3	3.2	1.4	0.9	48.8
SIERRA													
Downieville	0.7	1.0	2.3	3.5	5.0	6.0	7.4	6.2	4.7	2.8	0.9	0.6	41.3
Sierraville	0.7	1.1	2.2	3.2	4.5	5.9	7.3	6.4	4.3	2.6	0.9	0.5	39.6
SISKIYOU													
Happy Camp	0.5	0.9	2.0	3.0	4.3	5.2	6.1	5.3	4.1	2.4	0.9	0.5	35.1
MacDoel	1.0	1.7	3.1	4.5	5.9	7.2	8.1	7.1	5.1	3.1	1.5	1.0	49.0
Mt Shasta	0.5	0.9	2.0	3.0	4.5	5.3	6.7	5.7	4.0	2.2	0.7	0.5	36.0
Tule lake FS	0.7	1.3	2.7	4.0	5.4	6.3	7.1	6.4	4.7	2.8	1.0	0.6	42.9
Weed	0.5	0.9	2.0	2.5	4.5	5.3	6.7	5.5	3.7	2.0	0.9	0.5	34.9
Yreka	0.6	0.9	2.1	3.0	4.9	5.8	7.3	6.5	4.3	2.5	0.9	0.5	39.2
SOLANO													
Benicia	1.3	1.4	2.7	3.8	4.9	5.0	6.4	5.5	4.4	2.9	1.2	0.7	40.3
Dixon	0.7	1.4	3.2	5.2	6.3	7.6	8.2	7.2	5.5	4.3	1.6	1.1	52.1
Fairfield	1.1	1.7	2.8	4.0	5.5	6.1	7.8	6.0	4.8	3.1	1.4	0.9	45.2
Hastings Tract	1.6	2.2	3.7	5.1	6.8	7.8	8.7	7.8	5.7	4.0	2.1	1.6	57.1
Putah Creek	1.0	1.6	3.2	4.9	6.1	7.3	7.9	7.0	5.3	3.8	1.8	1.2	51.0
Rio Vista	0.9	1.7	2.8	4.4	5.9	6.7	7.9	6.5	5.1	3.2	1.3	0.7	47.0
Suisun Valley	0.6	1.3	3.0	4.7	5.8	7.0	7.7	6.8	5.3	3.8	1.4	0.9	48.3
Winters	0.9	1.7	3.3	5.0	6.4	7.5	7.9	7.0	5.2	3.5	1.6	1.0	51.0
SONOMA													
Bennett Valley	1.1	1.7	3.2	4.1	5.5	6.5	6.6	5.7	4.5	3.1	1.5	0.9	44.4
Cloverdale	1.1	1.4	2.6	3.4	5.0	5.9	6.2	5.6	4.5	2.8	1.4	0.7	40.7
Fort Ross	1.2	1.4	2.2	3.0	3.7	4.5	4.2	4.3	3.4	2.4	1.2	0.5	31.9
Healdsburg	1.2	1.5	2.4	3.5	5.0	5.9	6.1	5.6	4.5	2.8	1.4	0.7	40.8
Lincoln	1.2	1.7	2.8	4.7	6.1	7.4	8.4	7.3	5.4	3.7	1.9	1.2	51.9
Petaluma	1.2	1.5	2.8	3.7	4.6	5.6	4.6	5.7	4.5	2.9	1.4	0.9	39.6
Santa Rosa	1.2	1.7	2.8	3.7	5.0	6.0	6.1	5.9	4.5	2.9	1.5	0.7	42.0
Valley of the Moon	1.0	1.6	3.0	4.5	5.6	6.6	7.1	6.3	4.7	3.3	1.5	1.0	46.1
Windsor	0.9	1.6	3.0	4.5	5.5	6.5	6.5	5.9	4.4	3.2	1.4	1.0	44.2
STANISLAUS													
Denair	1.0	1.9	3.6	4.7	7.0	7.9	8.0	6.1	5.3	3.4	1.5	1.0	51.4
La Grange	1.2	1.5	3.1	4.7	6.2	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.2
Modesto	0.9	1.4	3.2	4.7	6.4	7.7	8.1	6.8	5.0	3.4	1.4	0.7	49.7
Newman	1.0	1.5	3.2	4.6	6.2	7.4	8.1	6.7	5.0	3.4	1.4	0.7	49.3
Oakdale	1.2	1.5	3.2	4.7	6.2	7.7	8.1	7.1	5.1	3.4	1.4	0.7	50.3

Appendix A - Reference Evapotranspiration (ETo) Table*													
County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
STANISLAUS													
Patterson	1.3	2.1	4.2	5.4	7.9	8.6	8.2	6.6	5.8	4.0	1.9	1.3	57.3
Turlock	0.9	1.5	3.2	4.7	6.5	7.7	8.2	7.0	5.1	3.4	1.4	0.7	50.2
SUTTER													
Nicolaus	0.9	1.6	3.2	4.9	6.3	7.5	8.0	6.9	5.2	3.4	1.5	0.9	50.2
Yuba City	1.3	2.1	2.8	4.4	5.7	7.2	7.1	6.1	4.7	3.2	1.2	0.9	46.7
TEHAMA													
Corning	1.2	1.8	2.9	4.5	6.1	7.3	8.1	7.2	5.3	3.7	1.7	1.1	50.7
Gerber	1.0	1.8	3.5	5.0	6.6	7.9	8.7	7.4	5.8	4.1	1.8	1.1	54.7
Gerber Dryland	0.9	1.6	3.2	4.7	6.7	8.4	9.0	7.9	6.0	4.2	2.0	1.0	55.5
Red Bluff	1.2	1.8	2.9	4.4	5.9	7.4	8.5	7.3	5.4	3.5	1.7	1.0	51.1
TRINITY													
Hay Fork	0.5	1.1	2.3	3.5	4.9	5.9	7.0	6.0	4.5	2.8	0.9	0.7	40.1
Weaverville	0.6	1.1	2.2	3.3	4.9	5.9	7.3	6.0	4.4	2.7	0.9	0.7	40.0
TULARE													
Alpaugh	0.9	1.7	3.4	4.8	6.6	7.7	8.2	7.3	5.4	3.4	1.4	0.7	51.6
Badger	1.0	1.3	2.7	4.1	6.0	7.3	7.7	7.0	4.8	3.3	1.4	0.7	47.3
Delano	1.1	1.9	4.0	4.9	7.2	7.9	8.1	7.3	5.4	3.2	1.5	1.2	53.6
Dinuba	1.1	1.5	3.2	4.7	6.2	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.2
Lindcove	0.9	1.6	3.0	4.8	6.5	7.6	8.1	7.2	5.2	3.4	1.6	0.9	50.6
Porterville	1.2	1.8	3.4	4.7	6.6	7.7	8.5	7.3	5.3	3.4	1.4	0.7	52.1
Visalia	0.9	1.7	3.3	5.1	6.8	7.7	7.9	6.9	4.9	3.2	1.5	0.8	50.7
TUOLUMNE													
Groveland	1.1	1.5	2.8	4.1	5.7	7.2	7.9	6.6	5.1	3.3	1.4	0.7	47.5
Sonora	1.1	1.5	2.8	4.1	5.8	7.2	7.9	6.7	5.1	3.2	1.4	0.7	47.6
VENTURA													
Camarillo	2.2	2.5	3.7	4.3	5.0	5.2	5.9	5.4	4.2	3.0	2.5	2.1	46.1
Oxnard	2.2	2.5	3.2	3.7	4.4	4.6	5.4	4.8	4.0	3.3	2.4	2.0	42.3
Piru	2.8	2.8	4.1	5.6	6.0	6.8	7.6	7.8	5.8	5.2	3.7	3.2	61.5
Port Hueneme	2.0	2.3	3.3	4.6	4.9	4.9	4.9	5.0	3.7	3.2	2.5	2.2	43.5
Thousand Oaks	2.2	2.6	3.4	4.5	5.4	5.9	6.7	6.4	5.4	3.9	2.6	2.0	51.0
Ventura	2.2	2.6	3.2	3.8	4.6	4.7	5.5	4.9	4.1	3.4	2.5	2.0	43.5
YOLO													
Bryte	0.9	1.7	3.3	5.0	6.4	7.5	7.9	7.0	5.2	3.5	1.6	1.0	51.0
Davis	1.0	1.9	3.3	5.0	6.4	7.6	8.2	7.1	5.4	4.0	1.8	1.0	52.5
Esparto	1.0	1.7	3.4	5.5	6.9	8.1	8.5	7.5	5.8	4.2	2.0	1.2	55.8
Winters	1.7	1.7	2.9	4.4	5.8	7.1	7.9	6.7	5.3	3.3	1.6	1.0	49.4
Woodland	1.0	1.8	3.2	4.7	6.1	7.7	8.2	7.2	5.4	3.7	1.7	1.0	51.6
Zamora	1.1	1.9	3.5	5.2	6.4	7.4	7.8	7.0	5.5	4.0	1.9	1.2	52.8
YUBA													
Browns Valley	1.0	1.7	3.1	4.7	6.1	7.5	8.5	7.6	5.7	4.1	2.0	1.1	52.9
Brownsville	1.1	1.4	2.6	4.0	5.7	6.8	7.9	6.8	5.3	3.4	1.5	0.9	47.4

* The values in this table were derived from:

1) California Irrigation Management Information System (CIMIS);
2) Reference EvapoTranspiration Zones Map, UC Dept. of Land, Air & Water Resources and California Dept of Water Resources 1999; and
3) Reference Evapotranspiration for California, University of California, Department of Agriculture and Natural Resources (1987) Bulletin 1922;
4) Determining Daily Reference Evapotranspiration, Cooperative Extension UC Division of Agriculture and Natural Resources (1987), Publication Leaflet 21426

Appendix B

WATER EFFICIENT LANDSCAPE WORKSHEET

This worksheet is filled out by the project applicant and it is a required element of the Landscape Documentation Package.

Reference Evapotranspiration (ETo) _____

Hydrozone # /Planting Description[a]	Plant Factor (PF)	Irrigation Method[b]	Irrigation Efficiency (IE)[c]	ETAF (PF/IE)	Landscape Area (sq, ft,)	ETAF x Area	Estimated Total Water Use (ETWU)[e]
Regular Landscape Areas							
			Totals		(A)	(B)	
Special Landscape Areas							
				1			
				1			
				1			
			Totals		(C)	(D)	
						ETWU Total	
						Maximum Allowed Water Allowance (MAWA)[e]	

[a] ***Hydrozone #/Planting Description***
E.g
1.) front lawn
2.) low water use plantings
3.) medium water use planting

[b] ***Irrigation Method***
overhead spray or drip

[c] ***Irrigation Efficiency***
0.75 for spray head
0.81 for drip

[d] ***ETWU*** **(Annual Gallons Required) =**
Eto x 0.62 x ETAF x Area
where 0.62 is a conversion factor that converts acre-inches per acre per year to gallons per square foot per year.

[e] ***MAWA (Annual Gallons Allowed) = (****Eto) (0.62) [(ETAF x LA) + ((1-ETAF) x SLA)]*
where 0.62 is a conversion factor that converts acre-inches per acre per year to gallons per square foot per year, LA is the total landscape area in square feet, SLA is the total special landscape area in square feet, and ETAF is .55 for residential areas and 0.45 for non-residential areas.

ETAF Calculations

Regular Landscape Areas

Total ETAF x Area	(B)
Total Area	(A)
Average ETAF	**B ÷ A**

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

All Landscape Areas

Total ETAF x Area	(B+D)
Total Area	(A+C)
Sitewide ETAF	**(B+D) ÷ (A+C)**

CERTIFICATE OF COMPLETION & INSTALLATION

SUBMIT UPON COMPLETION OF THE LANDSCAPE PROJECT

BAWSCA Water Efficient Landscape Ordinance

Project Information

Date:	Telephone
Project Name	Email
Applicant Name (print):	Street Address
Title	State
Company	Zip

Project Owner - Declaration of Completion

Project Owner Name or Designee:
Title
Company

I certify that I have received copies of all the documents associated with the landscape project and that it is our responsibility to see that the project is maintained in accordance with the Landscape and Irrigation Maintenance Schedule.

Property Owner Signature	**Date**

Licensed Professional - Declaration of Installation

I certify that based upon periodic site observations, the work has been substantially completed in accordance with the ordinance and that the landscape planting and irrigation installation conform with the criteria and specifications of the approved Landscape Documentation Package.

Print Name and Company of Landscape Architect or Irrigation Designer	**Signature***	**License Number**
Email Address	**Phone Number**	

***Signer of the landscape design plan, signer of the irrigation plan, or a licensed landscape contractor.

REQUIRED ATTACHMENTS:

IRRIGATION SCHEDULING

Attach parameters for setting the irrigation schedule on controller as required by the ordinance.

SCHEDULE OF LANDSCAPE AND IRRIGATION MAINTENANCE

Attach schedule of Landscape and Irrigation Maintenance.

LANDSCAPE IRRIGATION AUDIT REPORT

Attach Landscape Irrigation Audit Report as required by the MWELO ordinance.

SOIL MANAGEMENT REPORT/SOIL MANAGEMENT AND GRADING DESIGN SURVEY

Attach soil analysis report OR Soil Management and Grading Design Survey, if not previously submitted with the Landscape Documentation Package as required by the ordinance. Attach documentation verifying implementation of recommendations from soil analysis report as required.

Appendix D - Prescriptive Compliance Option.

(a) This appendix contains prescriptive requirements which may be used as a compliance option to the Model Water Efficient Landscape Ordinance.

(b) Compliance with the following items is mandatory and must be documented on a landscape plan in order to use the prescriptive compliance option:

(1) Submit a Landscape Documentation Package which includes the following elements:

(A) date

(B) project applicant

(C) project address (if available, parcel and/or lot number(s))

(D) total landscape area (square feet), including a breakdown of turf and plant material

(E) project type (e.g., new, rehabilitated, public, private, cemetery, homeowner-installed)

(F) water supply type (e.g., potable, recycled, well) and identify the local retail water purveyor if the applicant is not served by a private well

(G) contact information for the project applicant and property owner

(H) applicant signature and date with statement, “I agree to comply with the requirements of the prescriptive compliance option to the MWELO”.

(2) Incorporate compost at a rate of at least four cubic yards per 1,000 square feet to a depth of six inches into landscape area (unless contra-indicated by a soil test);

(3) Plant material shall comply with all of the following;

(A) For residential areas, install climate adapted plants that require occasional, little or no summer water (average WUCOLS plant factor 0.3) for 75% of the plant area excluding edibles and areas using recycled water; For non-residential areas, install climate adapted plants that require occasional, little or no summer water (average WUCOLS plant factor 0.3) for 100% of the plant area excluding edibles and areas using

recycled water;

(B) A minimum three inch (3″) layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated.

(4) Turf shall comply with all of the following:

(A) Turf shall not exceed 25% of the landscape area in residential areas, and there shall be no turf in non-residential areas;

(B) Turf shall not be planted on sloped areas which exceed a slope of 1 foot vertical elevation change for every 4 feet of horizontal length;

(C) Turf is prohibited in parkways less than 10 feet wide, unless the parkway is adjacent to a parking strip and used to enter and exit vehicles. Any turf in parkways must be irrigated by sub-surface irrigation or by other technology that creates no overspray or runoff.

(5) Irrigation systems shall comply with the following:

(A) Automatic irrigation controllers are required and must use evapotranspiration or soil moisture sensor data and utilize a rain sensor.

(B) Irrigation controllers shall be of a type which does not lose programming data in the event the primary power source is interrupted.

(C) Pressure regulators shall be installed on the irrigation system to ensure the dynamic pressure of the system is within the manufacturers recommended pressure range.

(D) Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) shall be installed as close as possible to the point of connection of the water supply.
\

(E) All irrigation emission devices must meet the requirements set in the ANSI standard, ASABE/ICC 802-2014. “Landscape Irrigation Sprinkler and Emitter Standard,” All sprinkler heads installed in the landscape must document a distribution uniformity low quarter of 0.65 or higher using the protocol defined in ASABE/ICC 802-2014.

(F) Areas less than ten (10) feet in width in any direction shall be irrigated with subsurface irrigation or other means that produces no runoff or overspray.

(6) For non-residential projects with landscape areas of 1,000 sq. ft. or more, a private submeter(s) to measure landscape water use shall be installed.

(c) At the time of final inspection, the permit applicant must provide the owner of the property with a certificate of completion, certificate of installation, irrigation schedule and a schedule of landscape and irrigation maintenance.

Soil Management and Grading Design Survey

Project Name:

Project Location:

Project Lot Size:

Site Analysis Completed By:

Signature Date

This soil analysis and grading report form is designed to assist the applicant in reviewing existing conditions at their project site and evaluate opportunities to maximize benefits. Respond to the following questions, and submit a report detailing geographic features surrounding the site, topography, vegetation and other site features as directed below.

Soil Management Survey

☐ Laboratory soil analysis results are attached.

OR answer the following questions:

1. What is the infiltration rate in inches per hour for the site soil type?
(Instructions – in a minimum of three distinct locations dig a hole that would accommodate planting a 5-gallon plant. Fill hole with water and let drain. Fill hole again and measure the depth of the water in the hole and record the time it takes to infiltrate totally into the soil with no remaining standing water. Note the time of year and the level of existing soil saturation by touch).

2. What is the primary project site soil texture? (Example – clay, loam, silt, sand, etc)

3. What is the soil color at 2 inches depth? What is the color at 6 inches? What is the color at 12 inches? (Example – black, dark or light brown, red, gold, gray, blue, etc)

4. Has the site been previously or historically contaminated with toxic materials?

Comments:

Grading Design Survey

☐ Grading Design Plan is attached.

OR answer the following questions:

1. Does the stormwater runoff from the site discharge to (check all that apply):
   - ☐ Indirectly to waters of the U.S. (i.e. discharge flows overland across adjacent properties or rights-of-way prior to discharging into water of the United States)
   - ☐ Storm drain system
   - ☐ Directly to the water of the U.S. (e.g. river, lake, creek, stream, bay, ocean, etc.)

2. Has a stormwater pollution prevention plan been prepared for this site?
   - ☐ Yes
   - ☐ No

3. Is there potential for filtering or infiltrating stormwater in the landscape areas (e.g. grassy swales, infiltration planters, bioretention areas)?
   - ☐ Yes
   - ☐ No

4. Is there potential to store rainwater for future use?
   - ☐ Yes
   - ☐ No

5. Is the proposed site within a 100 year floodplain?
   - ☐ Yes
   - ☐ No

6. Is a creek protection plan required for this site?
   - ☐ Yes
   - ☐ No

Comments:

MID-PENINSULA WATER DISTRICT

AGENDA ITEM NO. 8.A.

DATE: December 16, 2015

TO: Board of Directors

FROM: Tammy Rudock, General Manager
Rene A. Ramirez, Operations Manager
Joubin Pakpour, District Engineer

SUBJECT: CONSIDER RESOLUTION 2015-21 AUTHORIZING FIVE-YEAR CAPITAL IMPROVEMENT PROGRAM FOR FISCAL YEARS 2016/2017 THROUGH FISCAL YEARS 2020/2021

RECOMMENDATION

Approve Resolution 2015-21 authorizing a five-year Capital Improvement Program (CIP) for the MPWD and for FYs 2016/2017 through 2020/2021.

FISCAL IMPACT

No immediate fiscal impact by Board action. For discussion purposes up to $25 million is proposed in the revised CIP.

BACKGROUND

At the October 22, 2015, Board meeting, District Engineer Pakpour provided each Director with a package of CIP projects (90 project sheets), together with a summary sheet that contained a cost estimate for each project in 2015 dollars. This engineering effort was the outcome of a water system hydraulic model prepared for the MPWD by the District Engineer's office. The total estimated cost for infrastructure improvement projects within the MPWD's nine (9) pressure zones is estimated at $42,400,000.

With some assistance from the District Engineer, staff developed a list of six scoring criteria in order to rank and prioritize each of the 90 projects. Operations staff has much institutional knowledge, over 85 years of combined MPWD experience, and in developing scoring criteria it was important to them that those projects that have had numerous leaks over the past five years be weighted the highest. The scoring criteria also took into account the condition of Belmont's roads. MPWD staff asked for and City of Belmont staff provided their most recent report on road conditions titled, "Pavement Management Program Budget Options Report" from April 2015. These criteria with several others were used to score and rank each project.

At last month's Board meeting on November 16, 2015, based on the score and ranking, staff presented a proposed five-year CIP totaling $12,035,000 (in 2015 dollars).

DISCUSSION

After much discussion last month by the Board, it was determined that a 5-year capital program valued at $12 million capital program would not accomplish much more than what has been the practice here at the MPWD with its pay-go program these past few years and annual investment between $1 million - $2 million. Additionally, three projects were not considered during the modeling but are appropriate for consideration during the capital program development. Staff shared with the Board the following additional that should be considered priority projects:

- AMI Installation Completion - $2 million
- SCADA System Replacement/Rehabilitation - $1.5 million
- Dairy Lane Structural and Facility Rehabilitation - $1.5 million

Therefore, staff was directed to bring back a more expanded CIP and longer-term financing options.

The revised CIP is attached for reference. It totals $25 million. Also attached is a system map reflecting the location of each proposed infrastructure project, by MPWD pressure zones. Staff has met with Belmont Public Works staff to share the proposed CIP and map and discuss/coordinate any challenges with them.

The District Engineer is working on the scheduling and staging (also requested by the Board last month) for the projects included within the revised CIP. Because of the upcoming holidays, staff and the District Engineer plan to meet next month and discuss the scheduling and resources, and tentatively plan to report preliminary information at the January 28, 2016, regular meeting.

In order for those financing options to be developed, including the integration of continued pay-go capital projects and outlay, the services of a Municipal Financial Advisor are necessary. Staff does not have that specialty expertise. The Board's next agenda item 8.B. deals with financing services necessary to contract with such professionals to develop CIP funding options and financing scenarios for the Board's future consideration and approval.

On December 3, 2015, staff and the Board's Financial Audit Committee had an informal meeting with a Municipal Financial Advisor familiar with funding options for public agencies. More details will be provided in the next agenda item 8.B.

Staff recommends Board approval of the attached Resolution No. 2015-21 and acknowledges that CIP is a living document and dependent upon available funding and financing decisions that will be considered by the Board in the near future.

Attachments: Resolution No. 2015-21
MPWD 5-Year CIP Summary dated 12/09/15 ($25,020,000)
CIP Map

BOARD ACTION: APPROVED:____ DENIED:_____ POSTPONED:_____ STAFF DIRECTION:_____

UNANIMOUS_____ LINVILL_____ ZUCCA_____ WARDEN_____ STUEBING_____ VELLA_____

RESOLUTION NO. 2015-21

AUTHORIZING MPWD 5-YEAR CAPITAL IMPROVEMENT PROGRAM FOR FISCAL YEARS 2016/2017 THROUGH 2020/2021

*** * ***

MID-PENINSULA WATER DISTRICT

WHEREAS, the Mid-Peninsula Water District ("MPWD") completed a comprehensive water hydraulic model of the entire MPWD system over the course of the past 18 months; and

WHEREAS, almost 90 capital improvement projects were identified for completion as a result of the water hydraulic modeling; and

WHEREAS, a list of six scoring criteria was developed in order to rank and prioritize each of the 90 capital projects; and

WHEREAS, a preliminary draft 5-year capital improvement program was introduced to the Board on November 16, 2015, totaling $12 million, and the Board provided direction to staff to revise it to expand beyond what the MPWD is currently funding on a pay-go basis and develop financing options; and

WHEREAS, a revised 5-year capital improvement program was developed totaling $25 million and presented to the Board on December 16, 2015, and the summary is attached as Exhibit “A;” and

WHEREAS, financing options for the capital improvement program will be developed and presented to the Board for consideration before commencement of the capital improvement program.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Mid-Peninsula Water District hereby authorizes the 5-Year Capital Improvement Program for Fiscal Years 2016/2017 through 2020/2021 totaling $25,020,000.

BE IT FURTHER RESOLVED that financing options will be developed and presented to the Board for consideration before commencement of the 5-Year Capital Improvement Program established pursuant to this Resolution.

REGULARLY PASSED AND ADOPTED this 16th day of December 2015, by the following vote:

AYES:

NOES:

ABSENT:

_____

President, Board of Directors
Mid-Peninsula Water District

ATTEST:

_____

District Secretary

Mid-Peninsula Water District
CIP Summary

Priority	Project Number	Zone	Project Name	Quantity LF	Quantity SRV	Quantity HYD	Construction	Planning, Design & CM	Contingency	2015 Dollars	2016-2017	104.0% 2017-2018	108.2% 2018-2019	112.5% 2019-2020	117.0% 2020-2021	121.0% 2021-2022	Total
1	15-14	3	Mezes Avenue Improvements	310	10	1	$ 122,500	$ 37,000	$ 15,500	$ 175,000							$0
2	15-30	3	Alameda De Las Pulgas Improvements	1460	32	4	$ 591,000	$ 118,000	$ 71,000	$ 780,000							$0
3	15-76	1	El Camino Real Improvements	4100	23	12	$ 1,463,000	$ 360,000	$ 277,000	$ 2,100,000							$0
4	15-65	2	Folger Drive Improvements	830	12	3	$ 306,000	$ 77,000	$ 37,000	$ 420,000							$0
5	15-73	1	Karen Road Improvements	800	9	2	$ 307,000	$ 80,000	$ 38,000	$ 425,000							$0
6	15-10	3	Notre Dame Avenue Loop Closure	2230	29	3	$ 689,500	$ 138,000	$ 82,500	$ 910,000							$0
7	15-44	2	South Road Abandonment	0	19	3	$ 302,000	$ 75,000	$ 38,000	$ 415,000							$0
8	15-22	3	Arthur Avenue Improvements	880	15	2	$ 345,000	$ 87,000	$ 43,000	$ 475,000							$0
9	15-16	3	Williams Avenue, Ridge Road, Hillman Avenue Improvements	2460	59	4	$ 834,000	$ 166,000	$ 100,000	$ 1,100,000							$0
10	15-43	2	North Road Cross Country / Davey Glen Road Improvements	1400	17	5	$ 496,000	$ 124,000	$ 60,000	$ 680,000							$0
11	15-06	5	Zone 5 Fire Hydrant Upgrades	0	0	7	$ 105,000	$ 31,000	$ 14,000	$ 150,000							$0
12	15-78	1	Civic Lane Improvements	1800	20	5	$ 605,000	$ 120,000	$ 75,000	$ 800,000							$0
13	15-17	3	Monte Cresta Drive / Alhambra Drive Improvements	2250	48	5	$ 781,500	$ 195,000	$ 98,500	$ 1,075,000							$0
14	15-87	1	Hillcrest Pressure Regulating Station	0	0	0	$ 250,000	$ 65,000	$ 30,000	$ 345,000							$0
15	15-09	3	Dekoven Tank Utilization Project	2300	14	2	$ 782,000	$ 158,000	$ 95,000	$ 1,035,000							$0
16	15-28	7	Tahoe Drive Area Improvements	900	28	4	$ 369,000	$ 94,000	$ 47,000	$ 510,000							$0
17	15-29	7	Belmont Canyon Road Improvements	900	17	2	$ 306,000	$ 76,000	$ 38,000	$ 420,000							$0
18	15-38	8	Cliffside Court Improvements	330	14	2	$ 154,500	$ 46,500	$ 19,000	$ 220,000							$0
19	15-42	2	North Road Improvements	0	19	1	$ 152,000	$ 46,000	$ 22,000	$ 220,000							$0
20	15-02	5	Courtland Road Improvements	780	9	2	$ 252,000	$ 63,000	$ 30,000	$ 345,000							$0
21	15-24	3	San Juan Boulevard Improvements	520	16	3	$ 223,000	$ 67,000	$ 30,000	$ 320,000							$0
22	15-75	1	Old County Road Improvements	5500	111	26	$ 2,580,500	$ 510,000	$ 309,500	$ 3,400,000							$0
23	15-41	2	Mills Avenue Improvements	280	12	2	$ 136,000	$ 41,000	$ 18,000	$ 195,000							$0
25	15-46	2	Miramar Terrace Improvements	1250	21	4	$ 435,500	$ 110,000	$ 54,500	$ 600,000							$0
26	15-61	2	Chula Vista Drive Improvements	800	10	2	$ 320,000	$ 80,000	$ 40,000	$ 440,000							$0
27	15-11	3	Camelita Avenue Improvements	1300	31	3	$ 463,000	$ 115,000	$ 57,000	$ 635,000							$0
28	15-72	1	SR 101 Crossing at PAMF Hospital	2300	0	2	$ 1,040,000	$ 350,000	$ 280,000	$ 1,670,000							$0
29	15-49	2	Mid-Notre Dame Improvements	0	0	10	$ 110,000	$ 33,000	$ 17,000	$ 160,000							$0
30	A	-	MPWD Building / Shop Improvements	0	0	0	$ 1,500,000	$ -	$ -	$ 1,500,000							$0
31	B	-	Complete AMI Installation	0	0	0	$ 2,000,000	$ -	$ -	$ 2,000,000							$0
32	C	-	Replace / Update SCADA per Master Plan	0	0	0	$ 1,500,000	$ -	$ -	$ 1,500,000							$0
			Material Totals	**35680**	**595**	**121**											
			Subtotal (Programed Projects)							**$25,020,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
			Average CIP per year and Carryover							**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	

MID-PENINSULA WATER DISTRICT

CAPITAL IMPROVEMENT PROGRAM
5 YEAR LOOK AHEAD

RANK	CIP NO.	PROJECT NAME	PIPE LF	SRV	HYD	COST*
1	15-14	Mezes Avenue Improvements	310	10	1	$ 175,000
2	15-30	Alameda De Las Pulgas Improvements	1,460	32	4	$ 780,000
3	15-76	El Camino Real Improvements	4,100	23	12	$ 2,100,000
4	15-65	Folger Drive Improvements	830	12	3	$ 420,000
5	15-73	Karen Road Improvements	800	9	2	$ 425,000
6	15-10	Notre Dame Avenue Loop Closure	2,230	29	3	$ 910,000
7	15-44	South Road Abandonment	N/A	19	3	$ 415,000
8	15-22	Arthur Avenue Improvements	880	15	2	$ 475,000
9	15-16	Williams Avenue, Ridge Road, Hillman Avenue Improvements	2,460	59	4	$ 1,100,000
10	15-43	North Road Cross Country / Davey Glen Road Improvements	1,400	17	5	$ 680,000
11	15-06	Zone 5 Fire Hydrant Upgrades	N/A	N/A	7	$ 150,000
12	15-78	Civic Lane Improvements	1,800	20	5	$ 800,000
13	15-17	Monte Cresta Drive / Alhambra Drive Improvements	2,250	48	5	$ 1,075,000
14	15-87	Hillcrest Regulating Station (not shown on map)	N/A	N/A	N/A	$ 345,000
15	15-09	Dekoven Tank Utilization Project	2,300	14	2	$ 1,035,000
16	15-28	Tahoe Drive Area Improvements	900	28	4	$ 510,000
17	15-29	Belmont Canyon Road Improvements	900	17	2	$ 420,000
18	15-38	Cliffside Court Improvements	330	14	2	$ 220,000
19	15-42	North Road Improvements	N/A	19	1	$ 220,000
20	15-02	Courtland Road Improvements	780	9	2	$ 345,000
21	15-24	San Juan Boulevard Improvements	520	16	3	$ 320,000
22	15-75	Old County Road Improvements	5,500	111	26	$ 3,400,000
23	15-41	Mills Avenue Improvements	280	12	2	$ 195,000
25	15-46	Miramar Terrace Improvements	1,250	21	4	$ 600,000
26	15-61	Chula Vista Drive Improvements	800	10	2	$ 440,000
27	15-11	Carmelita Avenue Improvements	1,300	31	3	$ 635,000
28	15-72	SR 101 Crossing at PAMF Hospital	2,300	N/A	2	$ 1,670,000
29	15-49	Mid-Notre Dame Improvements	N/A	N/A	N/A	$ 160,000
		TOTALS	35,680	595	121	$ 20,020,000

* 2015 Dollars

LEGEND

- ZONE 1
- ZONE 2
- ZONE 3
- ZONE 5
- ZONE 7
- ZONE 8

GRAPHIC SCALE
400 0 200 400 800
SCALE IN FEET
1" = 400'

MID-PENINSULA WATER DISTRICT

AGENDA ITEM NO. 8.B.

DATE: December 16, 2015

TO: Board of Directors

FROM: Tammy Rudock, General Manager
Rene A. Ramirez, Operations Manager

SUBJECT: CONSIDER RESOLUTION 2015-22 AUTHORIZING THE COMMENCEMENT OF PROCEEDINGS IN CONNECTION WITH THE FINANCING OF WATER SYSTEM IMPROVEMENTS AND DESIGNATING WULFF HANSEN & COMPANY AS MUNICIPAL FINANCIAL ADVISOR, AND QUINT & THIMMIG, LLP AS BOND COUNSEL AND DISCLOSURE COUNSEL

RECOMMENDATION

Approve Resolution 2015-22 authorizing the commencement of proceedings in connection with the financing of water system improvements and designating Wulff Hansen & Company as Municipal Financial Advisor, and Quint & Thimmig, LLP as Bond Counsel and Disclosure Counsel.

FISCAL IMPACT

No immediate fiscal impact by Board action. Fees for the services of the Municipal Financial Advisor, Bond Counsel, and Disclosure Counsel would be paid from the proceeds of the financing once approved by the Board and funded.

BACKGROUND

Historically, the MPWD has funded its Capital Improvement Program (CIP) on a pay-go basis, totaling $1 million - $2 million each year. Staff will provide a summary at the Board Meeting of MPWD's CIP investment for the past five years.

The MPWD has not obligated itself to significant debt in the past for its capital improvement program, and while it is common in the water industry, it would be a new undertaking for the MPWD.

Staff, the District Engineer, and even the Board's financial auditor, has reported that the MPWD is behind in its capital replacement/rehabilitation.

DISCUSSION

Last month at its November 16th regular meeting, the Board recognized the need to consider more than the $12 million proposed in the preliminary 5-year CIP introduced by staff. Therefore, it directed staff to expand the CIP and develop financing options, including the integration of pay-go funds for capital projects and outlay, for the Board's consideration.

In order for those financing options to be developed, the services of a Municipal Financial Advisor are necessary. Staff does not have that specialty expertise.

On December 3, 2015, staff and the Board's Financial Audit Committee had an informal meeting with a Municipal Financial Advisors from Wulff Hansen & Company, who are experienced with developing funding options and providing advice for public agencies.

General information learned from that meeting:

- MPWD is in excellent financial shape and investors would be highly interested;
- MPWD likely has a very high credit rating;
- The Board has a strong history of considering the MPWD rates and increasing as needed;
- Interest rates for borrowing have been at their all-time low (2%-3%) but are soon expected to increase; and
- There are many financing options available.

The attached Resolution 2015-22 is required to assemble a financial team to work on development of financing options. If approved, staff and District Counsel will finalize an agreement with the consultants and report back to the Board of its completion.

Attachments: Resolution 2015-22

BOARD ACTION: APPROVED:_____ DENIED:_____ POSTPONED:_____ STAFF DIRECTION:_____

UNANIMOUS_____ LINVILL_____ ZUCCA_____ WARDEN_____ STUEBING_____ VELLA_____

RESOLUTION NO. 2015-22

AUTHORIZING THE COMMENCEMENT OF PROCEEDINGS IN CONNECTION WITH THE FINANCING OF WATER SYSTEM IMPROVEMENTS AND DESIGNATING WULFF HANSEN & COMPANY AS MUNICIPAL ADVISOR, AND QUINT & THIMMIG, LLP, AS BOND COUNSEL AND DISCLOSURE COUNSEL

MID-PENINSULA WATER DISTRICT

*** * ***

WHEREAS, the Mid-Peninsula Water District ("MPWD") anticipates the issuance of bonds, certificates of participation or other appropriate securities (the "Securities") to finance water system improvements described in Exhibit "A" attached hereto, to be secured by the MPWD's water enterprise; and

WHEREAS, capital expenditures relating to the water system improvements described in Exhibit "A" (the "Expenditures") have been paid by the MPWD not more than 60 days prior to the adoption of this Resolution or will be paid by the MPWD on or after the adoption of this Resolution; and

WHEREAS, the MPWD reasonably expects to reimburse itself for the Expenditures with the proceeds of the Securities; and

WHEREAS, it is desirable to appoint a municipal advisor, a bond counsel, and a disclosure counsel in connection with the issuance of the Securities.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors for the Mid-Peninsula Water District as follows:

1. The MPWD reasonably expects to reimburse all or a portion of the Expenditures with the proceeds of the Securities.
2. The maximum principal amount of the Securities is TWENTY-FIVE MILLION DOLLARS ($25,000,000).

3. This Resolution is a declaration of official intent to reimburse Expenditures pursuant to Treasury Regulations Section 1.150-2.

4. The issuance of Securities is authorized. Officers and officials of the MPWD are authorized to proceed with the preparation of the necessary documents in connection with the issuance of the Securities, subject to the final approval thereof by the Board at subsequent meetings.

5. Wulff, Hansen & Company, in San Francisco, California is hereby designated as municipal advisor to the MPWD in connection with the issuance of the Securities. The President, the Vice President, and the General Manager, or the designee thereof, are each hereby authorized and directed in the name and on behalf of the MPWD to execute an agreement for municipal advisory services with such firm, with compensation to be paid thereunder from the proceeds of the Securities, in a form approved by the District Counsel and General Manager.

6. Quint & Thimmig, LLP, in Larkspur, California, is hereby designated as bond counsel and disclosure counsel to the MPWD in connection with the issuance of the Securities. The President, the Vice President, and the General Manager, or the designee thereof, are each hereby authorized and directed in the name and on behalf of the MPWD to execute an agreement for legal services with such firm, with compensation to be paid thereunder from the proceeds of the Securities, in a form approved by the District Counsel and General Manager.

7. The President, the Vice President, the General Manager, the District Secretary and other appropriate officers and officials of the MPWD are hereby authorized and directed to take such action and to execute such documents as may be necessary or desirable to effectuate the intent of this Resolution.

8. This Resolution shall take effect from and after the date of its passage and adoption.

REGULARLY PASSED AND ADOPTED this 16th day of December 2015, by the following vote:

AYES:

NOES:

ABSENT:

_____
President, Board of Directors

ATTEST:

_____
District Secretary

MID-PENINSULA WATER DISTRICT

AGENDA ITEM NO. 8.C.

DATE: December 16, 2015

TO: Board of Directors

FROM: Tammy Rudock, General Manager

SUBJECT: SCHEDULE MPWD STRATEGIC PLANNING SPECIAL MEETING IN JANUARY 2016

RECOMMENDATION

Schedule the MPWD Strategic Planning Special Meeting in January 2016.

FISCAL IMPACT

None.

DISCUSSION

The MPWD Board of Directors traditionally schedules a Special Meeting in January for its annual strategic planning. The meeting begins at 6:00PM and dinner is served. It was held this year on Tuesday, January 13, 2015.

In the coming year, the MPWD regular Board meeting is scheduled for Thursday, January 28, 2016. Consultant Julie Brown will facilitate the strategic planning meeting and process. Staff has confirmed that she is available on Thursday, January 21, 2016, and staff recommends that date for the meeting.

MPWD's 2015 strategic planning documents are attached for advance preparation for the 2016 session.

Attachments:
MPWD 2015 Strategic Plan
MPWD 2015 Director Assignments
MPWD Vision and Mission Statements

BOARD ACTION: APPROVED:_____ DENIED:_____ POSTPONED:_____ STAFF DIRECTION:_____

UNANIMOUS_____ LINVILL_____ ZUCCA_____ WARDEN_____ STUEBING_____ VELLA_____

APPROVED – *February 26, 2015*

MID-PENINSULA WATER DISTRICT

2015 Strategic Plan

January 13, 2015

Strategic Element #1-*External Relationships and Customer Service*

Core Goal	Objective	2015 Measure of Success	2016 Measure of Success	2017 Measure of Success
Maintain effective working relationships with external agencies	Maintain an appropriate agency presence in local, regional and state industry organizations and activities	*Basic Measures of Success External relationships: • Attend HIA meetings • Attend neighborhood meetings as appropriate • Maintain presence at LAFCO meetings • Attend local community City Council meetings • Attend ACWA JPIA and Region 5 meetings • Attend San Mateo CSDA meetings • Attend SFPUC meetings • Attend BAWSCA meetings • Attend Belmont Operational coordination meetings Conduct at least one community education event with BAWSCA **Action Plan Item 1.A.: Work with City of Belmont to coordinate capital projects,	*Basic Measures of Success **Action Plan Item 1.A.: Work with City of Belmont to coordinate capital projects, MPWD Urban Water Management Plan (UWMP) update and Belmont's General Plan update and related development policies	*Basic Measures of Success Continue coordination with City of Belmont

**Basic Measures of Success include 2015 items highlighted in blue.*
***Described in detail within the attached Action Plan document.*

		MPWD Urban Water Management Plan (UWMP) update and Belmont's General Plan update and related development policies		
Maintain organizational standards that ensure a high level of service orientation for our ratepayers	Provide ratepayers with prompt, professional and courteous service	*Basic Measures of Success Provide timely and useful customer communications Monitor customer satisfaction via a measurable survey **Action Plan Item 1.B.: Complete and launch new MPWD website	*Basic Measures of Success Develop MPWD website survey Provide water use information in customer friendly way	*Basic Measures of Success AMI data access for customers

**Basic Measures of Success include 2015 items highlighted in blue.*
***Described in detail within the attached Action Plan document.*

APPROVED – *February 26, 2015*

Strategic Element #2-*Resource Management*

Core Goal	Objective	2015 Measure of Success	2016 Measure of Success	2017 Measure of Success
Ensure water quality meets desired quality standards	Water quality standards for SWRCB/Department of Drinking Water are met	*Basic Measures of Success Routine water testing and monitoring should meet SWRCB/Department of Drinking Water standards Prepare and transmit timely CCR Implement feasible water quality inspection recommendations **Action Plan Item 2.A.: Complete Nitrification Monitoring Plan	*Basic Measures of Success Review Nitrification Monitoring Plan for applicable operational procedure revisions/updates	*Basic Measures of Success
Develop long-term resource sustainability through energy and water conservation measures	Participate in BAWSCA water supply reliability and water conservation projects Develop plan for meeting SB7X per capita water demand goals (20% reduction by 2020) Monitor fuel and energy use to identify opportunities for improved efficiency	*Basic Measures of Success Maintain active involvement in BAWSCA water supply reliability and water conservation project activity Continue water use efficiency messaging to meet regional and statewide water conservation goals Support continued off-peak hour pumping Explore use of solar power as market costs drop	*Basic Measures of Success Finalize UWMP and submit to SWRCB	*Basic Measures of Success Conduct leak survey, repair identified system leaks, and report results

**Basic Measures of Success include 2015 items highlighted in blue.*
***Described in detail within the attached Action Plan document.*

		Conduct leak survey, repair identified system leaks, and report results **Action Plan Item 2.B.: Finalize Indoor/Outdoor Water Use Efficiency Ordinances **Action Plan Item 2.C.: Commence UWMP Update		

**Basic Measures of Success include 2015 items highlighted in blue.*
***Described in detail within the attached Action Plan document.*

Strategic Element #3-*Infrastructure Management and Operations*

Core Goal	Objective	2015 Measure of Success	2016 Measure of Success	2017 Measure of Success
Maintain operations and maintenance procedures	Develop standard operating procedures in accordance with best management practices as an organized manual	*Basic Measures of Success Monitor O&M procedures and revise as appropriate **Action Item 3.A.: Finalize O&M manual Update Emergency Response Plan	*Basic Measures of Success Review O&M manual and update/revise as applicable Develop business interruption/resumption procedures to include within Emergency Response Plan	*Basic Measures of Success Review Emergency Response Plan and update/revise as applicable
Maintain long-term capital improvement plan	Review MPWD infrastructure modeling for assessment of capital improvement priorities, and assess other fixed assets in accordance with best management practices	*Basic Measures of Success Continue coordination of CIP with City of Belmont and City of San Carlos **Action Plan Item 3.B.: Complete the MPWD water hydraulic model **Action Plan Item 3.C.: Complete development of CIP/Master Plan **Action Plan Item 3.D.: Continue installation of AMI.	*Basic Measures of Success Continue implementation of 5-year CIP **Action Plan Item 3.D.: Continue installation of AMI.	*Basic Measures of Success Continue implementation of 5-year CIP **Action Plan Item 3.D.: Complete installation of AMI.

**Basic Measures of Success include 2015 items highlighted in blue.*
***Described in detail within the attached Action Plan document.*

APPROVED – *February 26, 2015*

Strategic Element #4-*Human Resource Management*

Core Goal	Objective	2015 Measure of Success	2016 Measure of Success	2017 Measure of Success
Develop and maintain systems and processes for effective workforce management	Develop and maintain an effective workforce to meet organizational needs Maintain appropriate communication channels with employees Maintain a positive work environment and employee satisfaction Maintain organizational human resources policy manual	*Basic Measures of Success Monitor recruitment/retention levers for funding/implementation action Review recruitment /hiring process plans Meet and confer with MPWD Employee Association as applicable Maintain organization chart Create organizational succession plan Plan annual training plan/calendar around available budget funds Regular GM/staff meetings and communications Develop/update and maintain administrative procedures Recognize employee service milestones Celebrate employee accomplishments Monitor staff job satisfaction Review Employee Safety and Loss Prevention Program Fiscal Year safety incident and loss prevention report to Board **Action Plan Item 4.A.: Finish HR Manual	*Basic Measures of Success	*Basic Measures of Success Prepare to conduct employee total compensation study in 2018 Prepare for MPWD Employee Association labor negotiations in 2018

**Basic Measures of Success include 2015 items highlighted in blue.*
***Described in detail within the attached Action Plan document.*

Develop and maintain Board of Directors procedures for effective and transparent governance	Develop and maintain Board of Director policies	*Basic Measures of Success Create/maintain/update Board of Directors policies **Action Plan Item 4.A.: Create Board of Directors bylaws	*Basic Measures of Success Review Board bylaws	*Basic Measures of Success Review Board bylaws

**Basic Measures of Success include 2015 items highlighted in blue.*
***Described in detail within the attached Action Plan document.*

APPROVED – *February 26, 2015*

Strategic Element #5-*Financial Management*

Core Goal	Objective	2015 Measure of Success	2016 Measure of Success	2017 Measure of Success
Establish and achieve annual budget targets	Complete annual budgeting process on a timely basis Monitor financial projections for accurate forecasting Maintain/monitor water rate schedule Maintain/monitor schedule of water capacity charges Maintain/monitor schedule of miscellaneous fees Update, monitor and implement capital plan	*Basic Measures of Success Review proposed fiscal year SFPUC water rate charges and consider MPWD water rate adjustment Budget process addressing District priorities completed by June 30 Review performance on a monthly basis so that targeted allocation is achieved Comprehensive budget document, including charts/graphs Apply for budget and/or financial transparency certification Incorporate and fund capital plan priorities in annual budget Incorporate modeling into annual budgeting process; use tools to develop scenario that can be used as operating circumstances change **Action Plan Item 5.A.: Complete rate study and Proposition 218 process	*Basic Measures of Success After Board consideration and approval of fiscal year water rate schedule, develop and transmit water rate adjustment notice to customers	*Basic Measures of Success After Board consideration and approval of fiscal year water rate schedule, develop and transmit water rate adjustment notice to customers

**Basic Measures of Success include 2015 items highlighted in blue.*
***Described in detail within the attached Action Plan document.*

		**Action Plan Item 5.B.: Miscellaneous fees update/fee schedule		
Develop and maintain adequate financial controls	Develop/update/maintain financial control policies, procedures, and audits in accordance with best management practices	*Basic Measures of Success Review and respond to annual financial audit recommendations and take corrective action as necessary Review PARS OPEB trust account investment performance and portfolio strategy **Action Item 5.C.: Implement new financial management system **Action Item 5.D.: Develop/finalize financial control policies and procedures, including implementation of inventory controls and policy	*Basic Measures of Success Full transition to new financial management system	*Basic Measures of Success Review/revise internal control policy manual as applicable

**Basic Measures of Success include 2015 items highlighted in blue.*
***Described in detail within the attached Action Plan document.*

MID-PENINSULA WATER DISTRICT

Board of Director Strategic Planning
January 13, 2015 Chart Pad Notes

2014 Accomplishments

- Successfully completed negotiations with MPWD Employee Association
- Completed Buckland tanks replacement project
- Improved City of Belmont coordination, including city leaders, public works, parks and recreation, and community development
- Improved organizational morale and built harmonious work environment
- Improved interactions between Board of Directors and General Manager through consistent communications
- Completed compensation study and resulting equity adjustments; related professional experiences to salaries
- Improved communications between General Manager/Staff, Board of Directors/General Manager
- Completed new construction standards and specifications to establish consistency in system construction
- Modified organizational focus away from in-house construction toward operations and maintenance expertise
- Managed cost containment, particularly expenses to within less than 1% variance
- Reviewed connection fees and rates; proactively determined appropriate rate structure to support infrastructure
- Continued improvement and transparency around financial controls
- Continued water conservation education efforts resulting in a 17% water use decrease in per capita water demand
- Avoided worker's compensation claims as a result of workplace safety
- Established communication process that linked goals and strategies to ongoing work efforts

2015 Priorities

- Commence UWMP (Urban Water Management Plan) update
- Work with City of Belmont to coordinate capital projects, MPWD UWMP update and Belmont's General Plan update and related development policies
- Complete the water hydraulic model
- Complete development of Capital Improvement Program (CIP)/Master Plan
- Finish the Human Resources manual
- Complete rate study and Proposition 218 process
- Complete and launch new MPWD website
- Complete miscellaneous fees update
- Complete nitrification monitoring plan
- Create Board bylaws
- Develop key organizational policies/manuals
- Implement inventory controls and related policy
- Implement new financial management system
- Develop financial control policies and procedures
- Finalize indoor/outdoor water use efficiency ordinances
- Develop project monitoring system to improve tracking and reporting between General Manager and Board of Directors *(to be included in the General Manager Performance Assessment)*
- Continue AMI installation project

ACTION PLAN FOR 2015 STRATEGIC PRIORITIES

Strategic Element #1- *External Relationships and Customer Service*

A. **Work with City of Belmont to coordinate capital projects, MPWD Urban Water Management Plan (UWMP) update and Belmont's General Plan update and related development policies**
   - Board Liaison-All Directors involved

Key Steps
- Complete water hydraulic modeling
- Develop Capital Improvement Plan
- Update MPWD Urban Water Management Plan (UWMP) and coordinate with City of Belmont General Plan update and related development policies
- Identify and act on appropriate actions to collaborate with the City of Belmont on shared accountabilities/projects

Target Completion Date-Ongoing

B. **Complete and launch new MPWD website**
   - Board Liaison-Tammy Rudock

Key Steps
- Finalize website content transfer
- Coordinate elements with Special District Leadership Foundation transparency best management practices
- Present to Board of Directors for input on 2/26/15
- Incorporate feedback and suggested revisions
- Launch new website by 4/15/15

Strategic Element #2-*Resource Management*

A. **Complete Nitrification Monitoring Plan**
   - Board Liaison – Henry Young

Key Steps
- Develop internal working draft
- Include key standard operating procedures
- Submit draft to the State Water Resources Control Board/Division of Drinking Water for review - 4/1/15
- Present vetted plan to the Board of Directors for approval - 5/1/15

B. **Finalize Indoor / Outdoor Water Use Efficiency Ordinances**
   - Board Liaison- Tammy Rudock/District Counsel

Key Steps
- District Counsel update to Board of Directors on meeting with Belmont's City Attorney regarding enforcement challenges
- Finalize "one-stop shop" processes with City of Belmont and City of San Carlos
- Develop flowchart describing applicant procedures
- Present cost-of-service fee to Board of Directors for approval
- Incorporate into Belmont/San Carlos coordination efforts

Target Completion Date – 12/1/15

C. Commence UWMP (Urban Water Management Plan) update

➢ Board Liaison- Matt Zucca/Tammy Rudock

Key Steps

- Develop and issue Request for Proposal (RFP)
  - Select appropriate consultant after development of criteria for plan needs
  - Create contract and initiate work
- Initiate planning process with consultant
  - Create alignment during MPWD plan development as possible with Belmont's general plan process and zoning ordinance change processes; also include San Carlos as part of effort
  - Develop workshops for staff and presentations to BOD (Board of Directors) regarding plan development, status and recommendations
  - Schedule and develop plan for public review of draft
  - Complete public hearing and incorporate appropriate feedback
  - Submit in appropriate format after Board approval

Target Completion Date – 6/30/16

Strategic Element #3-*Infrastructure Management and Operations*

A. Finalize Operations & Maintenance (O&M) Manual

➢ Board Liaison-Henry Young

- O& M manual → Henry → present at least one procedure monthly beginning 2/26/15

B. Complete the MPWD water hydraulic model

➢ Board Liaison-District Engineer/Tammy Rudock/Henry Young

Key Steps

- Carry forward assessment work in progress to identify additional needs by zone
  - Zone 8 by 2/26/15
  - Zone 2 by 5/28/15
  - Zone 1 by 8/20/15
- Complete all water hydraulic modeling and mapping and integrate needs into one plan
- Identify and prioritize projects for in-house construction by operations
- Prioritize capital projects for Capital Improvement Program (CIP) development

C. Complete development of CIP/Master Plan

➢ Board Liaison-District Engineer/Tammy Rudock/Henry Young/Candy Pina

Key Steps

- Finalize development of 5-year CIP
- Assess financial impact on agency operations
- Link capital needs to 5-year rate study activity (Proposition 218)
- Determine ability to incorporate information into July 1, 2015 rates/5-year program
- Present to Board of Directors for approval

Target Completion Date – 10/22/15

D. Continue AMI (Advanced Metering Infrastructure) installation project

➢ Board Liaison-Tammy Rudock/Henry Young/Brent Chester

Key Steps

- Identify service area for AMI installation and update AMI schematic and data for proposed 2015 program
- Develop proposed capital budget for AMI project materials and supplies, and labor for installation
- Establish AMI capital project for Board consideration
- Include with capital budget presentation to Board of Directors for approval
- Order AMI project materials and supplies
- Implement AMI installation plan

Target Completion Date – 4/30/16

Strategic Element #4-*Human Resource Management*

A. Finalize key organizational policies/manuals

- **Finish Human Resources (HR) Manual**
  - Board Liaison- Tammy Rudock/Candy Pina/District Counsel

Key Steps

- Complete draft manual
- Review draft with District Counsel
- Meet and confer with MPWD Employee Association for review and input
- Present HR manual to Board of Directors for review and approval by 6/25/15

Target Completion Date – 6/25/15

- **Create Board of Directors Bylaws**
  - Board Liaison-Matt Zucca/Betty Linvill/District Counsel

Key Steps

- Develop necessary content framework
- Obtain comparable bylaws for review
- Create draft bylaws
- Revise drafts based on legal counsel input
- Submit to the full Board of Directors for approval by 12/16/15

Target Completion Date – 12/16/15

Strategic Element #5-*Financial Management*

A. Complete rate study and Proposition 218 process

- Board Liaison- Tammy Rudock/Candy Pina/Henry Young/District Treasurer/District Counsel/District Engineer/Bartle Wells

Key Steps

- Create schedule for study and process for implementation by 7/1/15
- Develop rates at levels adequate to fund costs of providing service, including long-term operating and capital needs
- Consider financial challenges: SFPUC wholesale water purchase rate increases, capital improvement needs, reduced water sales, and ongoing operating costs inflation
- Financial Plan:
  - Develop 10-year financial projections to determine annual revenue needs

- Evaluate financial scenarios and rate increase alternatives
- Water Rate Analysis:
  - Evaluate rate structure alternatives or modifications as directed
  - Analyze customer and usage data
  - Develop new rates based on a cost-of-service approach
  - Develop emergency water shortage rates to support financial stability during periods of reduced water sales
- Phase in rate adjustments over time to minimize the annual impact on ratepayers
- Build consensus for final recommendations
  - Conduct public rates workshop
  - Incorporate feasible input
- Finalize rate study and new rate schedule
- Proposition 218 process:
  - Create customer protest hearing notice
  - Conduct public hearing
  - Board approval of new rate schedule
- Implement new rates by 7/1/15

B. Miscellaneous fees update/fee schedule

➢ Board Liaison- Tammy Rudock/Candy Pina/Henry Young/District Treasurer/District Counsel/Bartle Wells

Key Steps

- Identify operational activities for inclusion into updated fee schedule
- Consider cost-of-service approach
- Benchmark charges by similar agencies
- Draft proposed fee schedule
- Complete after agency rate study by 10/1/15

C. Implement new financial management system

➢ Board Liaison- Candy Pina/Tammy Rudock/Henry Young/District Treasurer/External Consultant

Key Steps

- Develop and issue RFP
- Select responsive proposal
- Create contract to present to BOD for approval
- Schedule kickoff meeting and create project timeline
- Coordinate system components with staff
- Develop system transition schedule
- Train staff on new system
- Implement new financial management system by 12/1/15

D. Develop/finalize financial control policies and procedures, including implementation of inventory controls and policy

➢ Board Liaison- Tammy Rudock/Candy Pina/Henry Young/District Counsel/District Treasurer

- Financial Control and Inventory Control Manuals

  Key Steps

  - Coordinate financial control and inventory control manuals with staff
  - Review drafts with District Counsel and District Treasurer
  - Present policy manuals to Board of Directors for review and approval
    - Financial control manual by 6/1/16
    - Inventory control policy by 6/1/16

MID-PENINSULA WATER DISTRICT

January 13, 2015

DIRECTOR ASSIGNMENTS

ASSIGNMENT	2015
ASSOCIATION OF CALIFORNIA WATER AGENCIES (ACWA)/REGION 5	All
ACWA/JOINT POWERS INSURANCE AUTHORITY (JPIA)	Al Stuebing
BAY AREA WATER SUPPLY & CONSERVATION AGENCY (BAWSCA)	Louis Vella
SAN MATEO CHAPTER -CALIFORNIA SPECIAL DISTRICTS ASSOCIATION (CSDA)	Al Stuebing Dave Warden
GENERAL MANAGER PERFORMANCE EVALUATION	Al Stuebing Betty Linvill
HARBOR INDUSTRIAL ASSOCIATION (HIA)	Betty Linvill Dave Warden
FINANCIAL AUDIT COMMITTEE	Betty Linvill Dave Warden
BOARD BYLAWS COMMITTEE	Matt Zucca Betty Linvill
BELMONT CHAMBER OF COMMERCE	All

MID-PENINSULA
WATER DISTRICT

January 13, 2015

MISSION STATEMENT

The mission of the Mid-Peninsula Water District is to deliver a safe, high quality, reliable supply of water for current and future generations in a cost effective, environmentally sensitive and efficient manner.

VISION STATEMENT

The MPWD strives to be recognized by our ratepayers, the community we serve, and other agencies for our outstanding service and enlightened water conservation programs. We will employ innovative approaches to water and energy sustainability to achieve cutting edge environmental efficiency and a competitive rate structure. We will commit ourselves to provide community information and water education.

STRATEGIC GOALS

1. To effectively manage the water resources, demands and infrastructure for the District.
2. To operate the District at the highest level of service to ratepayers at the lowest expense.
3. To maintain an environment that fosters open and candid communication with the community, ratepayers, staff, and directors.
4. To keep current with water issues and industry best management standards.

MID-PENINSULA WATER DISTRICT

TO: Board of Directors

FROM: Tammy A. Rudock
General Manager

DATE: December 16, 2015

MANAGER'S REPORT

FOLLOW-UP FROM 11/16/15 REGULAR BOARD MEETING

- ✓ Cornerstone Structural Engineering, Group, Inc., contract signed for the Hallmark Water Storage Tanks Seismic Retrofit Evaluation and Strategy Development.

- ✓ Ordered four (4) vehicles for MPWD Operations from Towne Ford of Redwood City.

- ✓ Posted to the MPWD website and distributed to transmittal list the Financial Audit Report for Year Ended June 30, 2015.

2015 URBAN WATER MANANGEMENT PLAN (UWMP)

Since consultant contract award was considered in an earlier agenda item this evening, the next step is a kickoff meeting between staff and the consulting team on Friday, December 18th.

PERSONNEL MANUAL UPDATE

The new MPWD Personnel Manual will be transmitted to District Counsel and ACWA/JPIA for review by Friday, December 18th. It has been completely reformatted, and I believe staff and the Board will find it much more user friendly. Here is a project schedule summary for the remaining tasks:

TASK	***PROJECTED DATE***
DRAFT to MPWD Employees Association for review	02/26/16
Meet and confer with MPWD Employees Association	03/25/16
Complete FINAL DRAFT	04/01/16
Final Legal Review	04/15/16
Initial presentation for Board consideration and input	04/28/16
Final presentation for Board approval	05/26/16

MISCELLANEOUS FEES PROJECT UPDATE

Preliminary work has been accomplished for this project. No progress since last month's Board meeting due to other priorities, and staff will regroup with Bartle Wells after the holidays.

HOLIDAY CLOSURE

The MPWD Administration, Customer Services, and Field Operations will be closed on the following official holidays:

- Thursday and Friday, December 24 and 25, 2015 in observance of Christmas;
- Thursday and Friday, December 31, 2015 and January 1, 2016 in observance of the New Year; and
- Monday, January 18, 2016 in observance of Martin Luther King Day.

On-call staff will be available for service interruptions and emergencies. Customers may contact the MPWD's 24-hour answering service at 650-591-8941.

MEETINGS

DATE	***EVENT***
November 23rd	Attended meeting with District Engineer and Operations Manager regarding revised CIP
December 2nd	Attended quarterly PWWA dinner meeting in Sunnyvale
December 3rd	Attended HIA meeting in Belmont Met with Board President for 12/16/15 agenda review Met with Board's Financial Audit Committee, staff, and Municipal Financial Advisors from Wulff Hansen & Company regarding financing options for 5-year CIP
December 10th	Attended BAWSCA Water Management meeting in Foster City Attended safety session with staff and facilitated GM rap session.

UPCOMING MEETINGS/EVENTS

BAWSCA Water Management Meeting (Foster City) – January 7, 2016
HIA Meeting* (Belmont) – January 7, 2016
Annual SFPUC GM Meeting with Wholesale Customers (Millbrae) – February 16, 2016

*The HIA 2016 Meeting Schedule was transmitted under separate cover to each Director.

MID-PENINSULA WATER DISTRICT

TO: Board of Directors

FROM: Candy Pina

DATE: December 16, 2015

ADMINISTRATIVE SERVICES MANAGER'S REPORT

CONFERENCES, TRAINING, & MEETINGS:

1) Jeanette Kalabolas: 11/18/15 – MWELO Working Group Conference Call
2) Misty Malczon: 11/19/15 – "Dropcountr CLEAR" Webinar
3) Misty Malczon: 11/25/15 – Comcast Phone Review
4) Jeanette Kalabolas: 12/07/15 – DWR UWMP Workshop
5) Laura Ravella: 12/09/15 – "How to Remain Cool and Collected in Challenging Conversations" Webinar

FINANCIAL REPORTING:

1) Schedule of Cash and Investments:

SCHEDULE OF CASH AND INVESTMENTS		
CASH ACCOUNT	**BALANCE @ 11/30/15**	**BALANCE 12/03/15**
PETTY CASH	400	400
CASH DRAWER	200	200
WELLS FARGO CHECKING	$ 111,119	$ 197,958
LAIF	$ 3,392,186	$ 3,392,186
TOTAL	**$ 3,503,905**	**$ 3,590,744**

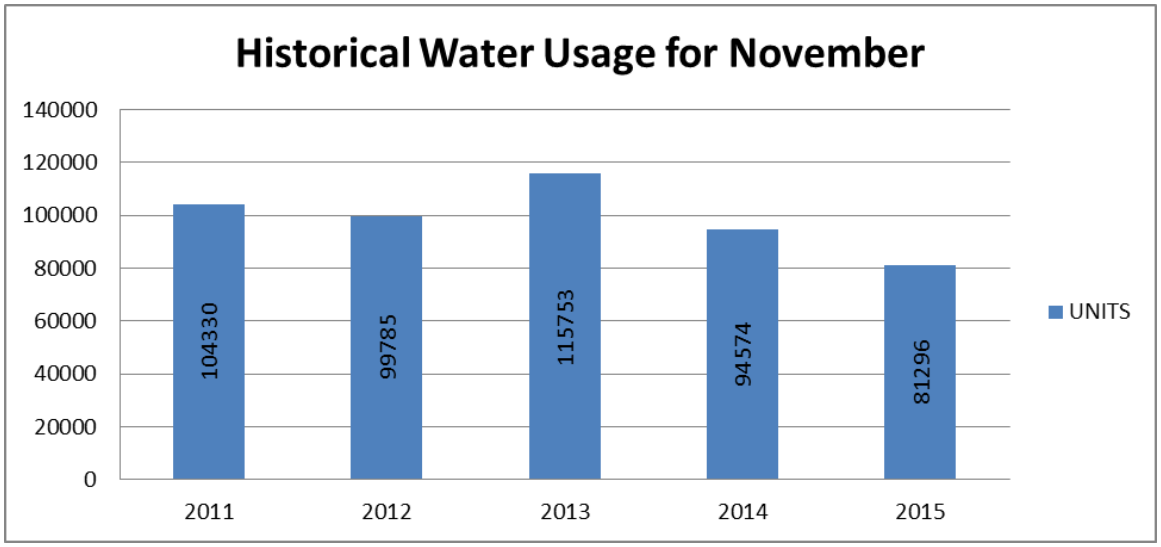
Month End Balance of PARS/OPEB for September 2015 (Oct & Nov 2015 reports not yet received): $440,908.02. An overall decrease in Net Earnings of $5,205.27 reported.

2) Reserve Report:

MPWD RESERVE FUNDS				
Reserve Account	**Balance @ 11/30/2013**	**Balance @ 11/30/2014**	**Balance @ 11/30/2015**	**Budget for Reserve Policy**
Capital Reserves	$1,222,112	$1,432,101	$ 892,186	$2,500,000
Emergency Reserves	$2,000,000	$2,000,000	$2,000,000	$2,000,000
Working Capital Reserves	$ 500,000	$ 500,000	$ 500,000	$ 500,000
TOTAL RESERVE FUNDS	**$3,722,112**	**$3,932,101**	**$3,392,186**	**$5,000,000**

3) Water Revenue Report:

WATER REVENUES for FISCAL YEAR 2015/2016					
Month	Total Units	Water Commodity Charges	Fixed System Charges	Total Water Revenues	Misc Rev
JUL	102,202	655,215.69	174,717.33	829,933.02	1,223.75
AUG	104,096	788,694.37	206,692.18	995,386.55	1,217.50
SEP	101,546	767,490.00	206,247.53	973,737.53	1,213.75
OCT	95,095	715,010.00	206,496.89	921,506.89	1,218.88
NOV	81,298	601,597.16	205,707.83	807,304.99	1,220.00
TOTAL	**484,237**	**3,528,007.22**	**999,861.76**	**4,527,868.98**	**6,093.88**



TEAM BUILDING ACTIVITIES:

1. We continue to celebrate birthdays.
2. We will be celebrating Jon Tscharner's 25-year anniversary with the District on Thursday, December 17, 2015.

MID-PENINSULA
WATER DISTRICT

TO: Board of Directors

FROM: Rene A. Ramirez, Operations Manager

DATE: December 16, 2015

OPERATIONS REPORT – November 2015

Projects:

- AMI: Since last month's report, staff have installed 31 commercial meters for a total of 91 in Zone 1. This zone is taking more time as District staff has to coordinate and accommodate customer water needs with their meter installation in addition to preparing the old meter site for a new AMI meter. In several cases, staff has come in early before normal work hours to accommodate a customer's needs in order for the water meter to be replaced;
- A new 450 horsepower motor for Pump 3 at the Tunnels Pump Station was ordered to replace the existing motor that had a catastrophic failure due to a lower bearing failure
- Coordinating and meeting in field with the City of Belmont's sewer project contractor mainly along North Road;
- In order to better manage water quality throughout the system, staff installed a 2-inch regulator at the San Juan Regulator Station. The 2-inch regulator compliments the 4 and 6-inch regulators at this station, and will act as the lead regulator for low flow needs in Zone 9; and
- The biannual leak survey awarded by the Board in September is underway. The contractor, Subtronic, initiated the survey on October 26 and has completed the survey in Zone 7 and 8, and has been working in Zone 3. To date, they have confirmed leaks at 4 residences and 1 irrigation service. These 5 leaks were all on the customer side of the service. So far, only 1 leak has been found on the District side of a residential meter.

Maintenance:

- Issued a ten-day shut off letter for a business on Old County Road for non-compliance regarding a mandated backflow installation;
- During October responded to and completed 122 USA (underground service alerts) requests to identify our infrastructure;

- During November staff exercised 22 water system valves in Zone 8, 7, and 3 bringing the total to 302 valves exercised this fiscal year;
- Staff ordered and is awaiting delivery of a rebuild kit for the pump control valve on Hannibal Pump #2;
- Customer conservation efforts and the water savings it entails has evolved into a water aging and water quality degradation in parts of the system. To best manage, staff has discussed operational options and is in the process of taking the one tank at the Dekoven and Exbourne Tank sites. Staff has been draining, inspecting and cleaning tanks and preparing them to remain empty of water until spring;
- Staff is working with the District Engineer to determine if other tanks, where the District operates more than one tank per site, could be removed from service without sacrificing storage capacity for peak needs and fire protection; which are the main reasons for storage. Staff's concerns are water quality regulations and water quality due to conservation;
- A regular program of bimonthly regulator exercising continues throughout the distribution system;
- Paving several areas where leaks occurred including: Hillman/Terrace, Vine and Ponce/Cipriani;
- Hot-tap water main and trench along Ponce to re-locate a fire hdrant;
- Grabbed 44 water samples for bacteriological testing – all samples were normal and showed no signs of coliform bacteria;
- We also monitored dead-ends for disinfectant residual, and where needed, we flowed water into landscapes, street sweepers or sewer flushing trucks versus monitoring for discharge into the storm water systems to improve water quality; and
- Staff continues monitoring for signs of nitrification within our tanks.

System Repairs;

Location	Event	Material	Installation Date	Estimated Water Loss (Gals.)
104 Alameda	Main Break	CIP	1954	< 1,000
2611 Barclay.	Main Break	CIP	1958	500

Development:

- Staff is currently working with developers on six (6) development projects located at:
    - 576-600 El Camino Real – there is nothing to report out at this time;
    - 1401 Shoreway Road – a hotel building; their plans are in good shape. The District has made a request to make the landscape service connection from Shoreway in order to improve water quality in the area versus Cormorant where they will be taking water for the hotel building;

- 1201 Shoreway Road – a hotel building; the developer has agreed to locate their services in a better spot and to install an additional fire hydrant off of their private fire system;
- 360-380 Industrial Road – a commercial building; District has received payment for the installation of the services requested. At this time, District staff are waiting to hear when site demolition is complete and the existing fire service connection has been exposed ;
- 2177 Carlmont Avenue – a 10 unit residential condominium project; a revised set of plans following District comments have been re-submitted and are under review by staff; and
- 2204 Thurm – a residential unit; their initial plans were returned for correction with an outdated detail for service and backflow device connections and staff is awaiting a resubmittal.

Administration:

- Held Operations staff meetings during month;
- Participated in a walk-through of the 1513 Folger rental property with the General Manager and staff;
- Staff continues to monitor system pumping protocol, and hours and time of use in an effort to best manage power costs, and continue to see the efforts paying off;
- Staff hiked the Tunnels Pump Station to Hallmark Tank site to check on existing pipeline markers and insert almost 30 more fiberglass markers along pipeline route;
- As a matter of courtesy, spoke with SWRCB engineer regarding our intent to take a couple of tanks down for maintenance and then out of service during the winter;
- Staff attended the BAWSCA Innovative Tech Forum in Foster City;
- Operations staff and General Manager went over CIP scoring process and then split work up in order to rank each of the 90 projects;
- Attended discussion and demonstration of a prototype fire hydrant remote reading system and mixing system for tanks pulled together by the District Engineer for District, Westborough and Purissima Hills Water Districts personnel;
- Attended the initial San Mateo County – Hazard Mitigation Planning meeting and then talked with City of Belmont staff on how the City's efforts, with the District, will integrate with the County's Plan that is just kicking off;
- Met with the General Manager and Staff to discuss the proposed physical improvements at the Tierra Linda School;
- Met with the General Manager and District Engineer to beginning planning the next steps in the CIP;
- Made effort to reach out to City of Belmont staff to discuss our proposed CIP in person during December; and
- Continue conversing with Crown Castle Corporation, as the representative for T-Mobile, on two potential projects on cellular phone service towers on District property under agreement, and with Verizon. Verizon has interest in erecting a new cell tower at the Hallmark Tank site.

MID-PENINSULA WATER DISTRICT
BUDGET FOR YEAR 2015-2016
SUMMARY

DESCRIPTION	APPROVED FY 2015-2016 BUDGET $	ACTUAL 7/1/15 11/30/15	REMAINING BALANCE/ (OVER BUDGET)	Target YTD % 41.9% Y-T-D % OF BUDGET
OPERATING REVENUE				
WATER COMMODITY CHARGES	8,400,000	3,521,184	4,878,816	41.9%
FIXED SYSTEM CHARGES	2,443,780	1,004,915	1,438,865	41.1%
FIRE SERVICE CHARGES	14,400	6,093	8,308	42.3%
METER CHARGES	10,000	5,428	4,572	54.3%
SERVICE LINE & INSTALLATION CHARGES	25,000	30,229	(5,229)	120.9%
WATER SYSTEM CAPACITY CHARGES	200,000	28,125	171,875	14.1%
WATER DEMAND OFFSET CHARGES	10,000	3,651	6,349	36.5%
TEMP CONSTRUCTION CONNECTION CHARGES	10,000	-	10,000	NA
MISCELLANEOUS CHARGES	10,000	5,032	4,968	50.3%
INTEREST REVENUE - LAIF	10,000	4,875	5,125	48.8%
LEASE OF PHYSICAL PROPERTY	245,140	69,875	175,265	28.5%
PROPERTY TAX REVENUE	245,000	70,890	174,110	NA
TOTAL OPERATING REVENUE	**11,623,320**	**4,750,297**	**6,873,023**	40.9%
OPERATING EXPENDITURES				
SALARIES & WAGES	1,653,300	638,353	1,014,947	38.6%
PAYROLL TAXES & BENEFITS	1,141,017	444,323	696,694	38.9%
PURCHASED WATER	5,062,000	2,114,327	2,947,673	41.8%
CUSTOMER CREDIT CARD SERVICE FEES	114,638	50,096	64,542	43.7%
OUTREACH & EDUCATION	130,000	65,137	64,863	50.1%
M&R - OPS SYSTEM	364,215	130,603	233,612	35.9%
M&R - FACILITIES & EQUIPMENT	123,600	39,757	83,843	32.2%
MAJOR MAINTENANCE	32,000	700	31,300	2.2%
OFFICE SUPPLIES & EQUIPMENT	207,486	71,300	136,186	34.4%
MEMBERSHIP & GOV FEES	173,900	91,580	82,320	52.7%
BAD DEBT & CLAIMS	37,000	6,783	30,217	18.3%
UTILITIES	340,334	122,270	218,064	35.9%
PROFESSIONAL SERVICES	568,567	206,655	361,912	36.3%
TRAINING/TRAVEL & RECRUITMENT	54,140	6,351	47,789	11.7%
RESTRICTED EARNINGS	(10,000)	(4,875)	(5,125)	48.8%
RESERVES	61,123	-	61,123	NA
DEPRECIATION	870,000	394,902	475,098	45.4%
TOTAL OPERATING EXPENDITURES	**10,923,320**	**4,378,263**	**6,545,057**	40.1%
OPERATING REVENUE LESS EXPENDITURES	**700,000**	**372,034**	**327,966**	53.1%
NET TRANSFERS TO CAPITAL	**(700,000)**	**(372,034)**	**(327,966)**	53.1%
NET RESULTS OF OPERATIONS	-	-	-	

MID-PENINSULA WATER DISTRICT
OPERATIONS BUDGET FOR YEAR 2015-2016
DETAILED

ACCOUNT NUMBER	ACCOUNT DESCRIPTION	APPROVED FY 2015-2016 BUDGET $	ACTUAL 7/1/2015 11/30/2015	REMAINING BALANCE/ (OVER BUDGET)	Target YTD % 41.9% **Y-T-D % OF BUDGET**
4010	WATER COMMODITY CHARGES	8,400,000	3,521,184	4,878,816	41.9%
4020	FIXED SYSTEM CHARGES	2,443,780	1,004,915	1,438,865	41.1%
4030	FIRE SERVICE CHARGES	14,400	6,093	8,308	42.3%
4040	METER CHARGES	10,000	-	10,000	NA
4050	SERVICE LINE & INSTALLATION CHARGES (A)	25,000	30,229	(5,229)	120.9%
4060	WATER SYSTEM CAPACITY CHARGES	200,000	28,125	171,875	14.1%
4070	WATER DEMAND OFFSET CHARGES	10,000	3,651	6,349	36.5%
4080	TEMPORARY CONSTRUCTION CONNECTION CHARGES	10,000		10,000	NA
4090	MISCELLANEOUS CHARGES (B)	10,000	5,428	4,572	54.3%
4000	TOTAL WATER AND FEE CHARGES	11,123,180	4,599,624	6,523,556	41.4%
4102	Interest Revenue- LAIF	10,000	4,875	5,125	48.8%
4100	INTEREST REVENUE	10,000	4,875	5,125	48.8%
4201	Lease of Physical Property	245,140	69,875	175,265	28.5%
4202	Property Tax Revenue (C)	245,000	70,890	174,110	28.9%
4203	New Construction Revenue	-	3,632	(3,632)	NA
4208	Landscape Plan Permit Review	-	400	(400)	NA
4206	Other Miscellaneous Charges	-	1,000	(1,000)	NA
4200	OTHER REVENUE	490,140	145,797	344,343	29.7%
4000	TOTAL OPERATING REVENUE	11,623,320	4,750,297	6,873,023	40.9%
6011	Salaries & Wages	1,546,900	604,866	942,034	39.1%
6012	Director Compensation	11,000	2,800	8,200	25.5%
6017	Capital Salaries & Wages	-	14,671	(14,671)	NA
6010	GROSS REGULAR WAGES	1,557,900	622,337	935,563	39.9%
6017	CAPITAL SALARY & WAGES reversed	-	(14,671)	14,671	N/A
6021	Overtime Labor	58,300	17,551	40,749	30.1%

MID-PENINSULA WATER DISTRICT
OPERATIONS BUDGET FOR YEAR 2015-2016
DETAILED

ACCOUNT NUMBER	ACCOUNT DESCRIPTION	APPROVED FY 2015-2016 BUDGET $	ACTUAL 7/1/2015 11/30/2015	REMAINING BALANCE/ (OVER BUDGET)	Target YTD % 41.9% **Y-T-D % OF BUDGET**
6022	Standby Labor	37,100	13,136	23,964	35.4%
6020	SUB-TOTAL SALARY & WAGES	1,653,300	638,353	1,014,947	38.6%
6031	FICA/Medicare PR Tax	126,477	44,017	82,460	34.8%
6038	ACWA Health Care	310,272	126,701	183,571	40.8%
6039	ACWA Dental	29,991	11,471	18,520	38.2%
6040	ACWA Vision	4,223	1,867	2,356	44.2%
6041	ACWA Life/AD&D	4,035	1,800	2,235	44.6%
6042	Standard LDL/SDL Disabiility	9,953	3,810	6,143	38.3%
6043	Workers' Comp Insurance	48,000	16,411	31,589	34.2%
6044	Unemployment	1,000	-	1,000	NA
6045	CALPERS Retirement - ER 2%@55	250,706	84,823	165,883	33.8%
6054	CAPITAL PAYROLL TAXES & BENEFITS	-	7,433	(7,433)	N/A
6046	Retirees' ACWA Health Care	54,400	23,708	30,692	43.6%
6047	Directors' ACWA Health Care	105,060	42,367	62,693	40.3%
6049	Medical Reimbursement	2,500	223	2,277	8.9%
6050	Employee Service Recognition (D)	3,000	3,067	(67)	102.2%
6051	Safety Incentive Program	7,200	3,000	4,200	41.7%
6052	Uniforms (E)	24,000	14,310	9,690	59.6%
6053	PARS OPEB Expense	160,200	66,750	93,450	41.7%
6030	SUB-TOTAL PAYROLL TAXES & BENEFITS	1,141,017	451,756	689,261	39.6%
6054	CAPITAL PAYROLL TAXES & BENEFITS	-	(7,433)	7,433	N/A
6000	PERSONNEL COSTS	2,794,317	1,082,676	1,711,641	38.7%
6101	SFPUC Treated Water	4,600,000	1,889,312	2,710,688	41.1%
6102	BAWSCA (Debt Service Surcharges)	462,000	192,190	269,810	41.6%
6103	Rates Stabilization	-	-	-	NA
6104	SFPUC Water Service Charge	-	32,824	(32,824)	N/A
6100	PURCHASED WATER	5,062,000	2,114,327	2,947,673	41.8%
6201	Customer Credit Card Service Fees	114,638	50,096	64,542	43.7%
6200	CUSTOMER CREDIT CARD SVS FEES	114,638	50,096	64,542	43.7%
6301	Water Conservation Program	25,000	3,330	21,670	13.3%
6302	School Conservation Program	15,000	1,115	13,885	7.4%
6303	Public Outreach & Education	40,000	11,721	28,279	29.3%
6305	HET Rebates (F)	10,000	12,836	(2,836)	128.4%

MID-PENINSULA WATER DISTRICT
OPERATIONS BUDGET FOR YEAR 2015-2016
DETAILED

ACCOUNT NUMBER	ACCOUNT DESCRIPTION	APPROVED FY 2015-2016 BUDGET $	ACTUAL 7/1/2015 11/30/2015	REMAINING BALANCE/ (OVER BUDGET)	Target YTD % 41.9% **Y-T-D % OF BUDGET**
6306	Washing Machine Rebates (G)	15,000	17,298	(2,298)	115.3%
6307	Lawn-Be-Gone Rebates (H)	20,000	18,873	1,127	94.4%
6308	Rain Barrel Rebates	5,000	(35)	5,035	-0.7%
6304	TOTAL WATER CONSERVATION REBATES	50,000	48,972	1,028	97.9%
6300	OUTREACH/EDUCATION	130,000	65,137	64,863	50.1%
6401	Water Quality	65,000	23,072	41,928	35.5%
6402	Pumping	25,750	10,711	15,039	41.6%
6403	Storage Tanks	5,150	-	5,150	NA
6404	Mains/Distribution	154,500	28,089	126,411	18.2%
6405	Meters & Service (I)	77,250	42,064	35,186	54.5%
6406	Fire Hydrants (J)	15,965	18,960	(2,995)	118.8%
6407	Regulator Stations (K)	10,300	5,558	4,742	54.0%
6408	Safety	10,300	2,149	8,151	20.9%
6400	M&R - OPS SYSTEMS	364,215	130,603	233,612	35.9%
6501	M&R-Buildings&Grounds	61,800	23,498	38,302	38.0%
6502	M&R- Equipment&Tools	20,600	5,099	15,501	24.8%
6503	M&R- Vehicles & Large Equipment	10,300	1,983	8,317	19.2%
6504	M&R - Fuel	30,900	9,178	21,722	29.7%
6500	M&R - FACILITIES & EQUIPMENT	123,600	39,757	83,843	32.2%
6601	Cathodic Protection Survey	-	700	(700)	NA
6602	Leak Detection Survey	32,000	-	32,000	NA
6600	MAJOR MAINTENANCE	32,000	700	31,300	2.2%
6701	Office Supplies (L)	10,300	7,379	2,921	71.6%
6702	Insurance- Liability/Vehicles	85,000	28,497	56,503	33.5%
6703	Bank Service Fees	546	1	545	0.2%
6704	Postage	5,150	145	5,005	2.8%
6705	Printing/Printing Supplies	24,710	5,362	19,348	21.7%
6706	Equipment Services/Maintenance	55,000	24,369	30,631	44.3%
6707	Computer Supplies & Upgrades	11,330	4,563	6,767	40.3%
6708	Security & Safety	15,450	985	14,465	6.4%
6709	Other Fees	-		-	NA
6700	OFFICE SUPPLIES & EQUIP	207,486	71,300	136,186	34.4%
6801	Dues & Publications	41,200	14,713	26,487	35.7%
6802	Gov't Fees & Licenses (M)	30,000	37,322	(7,322)	124.4%

MID-PENINSULA WATER DISTRICT
OPERATIONS BUDGET FOR YEAR 2015-2016
DETAILED

ACCOUNT NUMBER	ACCOUNT DESCRIPTION	APPROVED FY 2015-2016 BUDGET $	ACTUAL 7/1/2015 11/30/2015	REMAINING BALANCE/ (OVER BUDGET)	Target YTD % 41.9% **Y-T-D % OF BUDGET**
6803	BAWSCA Membership Assessments	61,800	28,045	33,755	45.4%
6804	Env Health - Cross Connection Inspection	30,900	11,500	19,400	37.2%
6805	Software License	10,000	-	10,000	NA
6800	MEMBERSHIP & GOV FEES	173,900	91,580	82,320	52.7%
6901	Bad Debt	7,000	2,796	4,204	39.9%
6902	Claims	30,000	3,987	26,013	13.3%
6900	BAD DEBT & CLAIMS	37,000	6,783	30,217	18.3%
7001	Utilities-Internet/Cable (M)	4,244	2,869	1,375	67.6%
7002	Utilities-Cellular Telephones	14,853	4,075	10,778	27.4%
7003	Utilities-Electric-Pumping	275,834	99,694	176,140	36.1%
7004	Utilities-Electric-Bldgs&Grounds	24,401	10,667	13,734	43.7%
7005	Utilities-Telephones	13,792	2,248	11,544	16.3%
7006	Utilities-Sewer - NPDES	7,210	2,717	4,493	37.7%
7000	UTILITIES	340,334	122,270	218,064	35.9%
7101	Prof Serv - District Counsel (O)	106,000	56,126	49,875	52.9%
7102	Prof Serv - District Engineer (P)	100,000	56,515	43,485	56.5%
7103	Prof Serv - IT	25,194	9,509	15,685	37.7%
7104	Prof Serv- Annual Finance Audit (Q)	20,000	18,600	1,400	93.0%
7105	Prof Serv - Mngmt Consult	-	-	-	NA
7106	Prof Serv- Accounting & Payroll	17,510	8,610	8,900	49.2%
7107	Prof Serv- Customer Billing	70,040	28,521	41,519	40.7%
7108	Prof Serv - Answering Svs	4,223	-	4,223	NA
7110	Prof Serv - Miscellaneous	222,000	27,873	194,127	12.6%
7111	Prof Serv - District Treasurer	3,600	900	2,700	25.0%
7100	PROFESSIONAL SERVICES	568,567	206,655	361,912	36.3%
7201	Director Travel	6,180	-	6,180	NA
7202	Director Expense	2,060	58	2,002	2.8%
7203	Elections	15,000	-	15,000	NA
7204	Employee Travel/Training	25,750	5,258	20,492	20.4%
7205	Meetings Expense	5,150	1,035	4,115	20.1%
7200	TRAINING & TRAVEL	54,140	6,351	47,789	11.7%
7302	Restricted Earnings Expense - Interest LAIF	(10,000)	(4,875)	(5,125)	48.8%
7300	RESTRICTED EARNINGS EXPENSE	(10,000)	(4,875)	(5,125)	48.8%

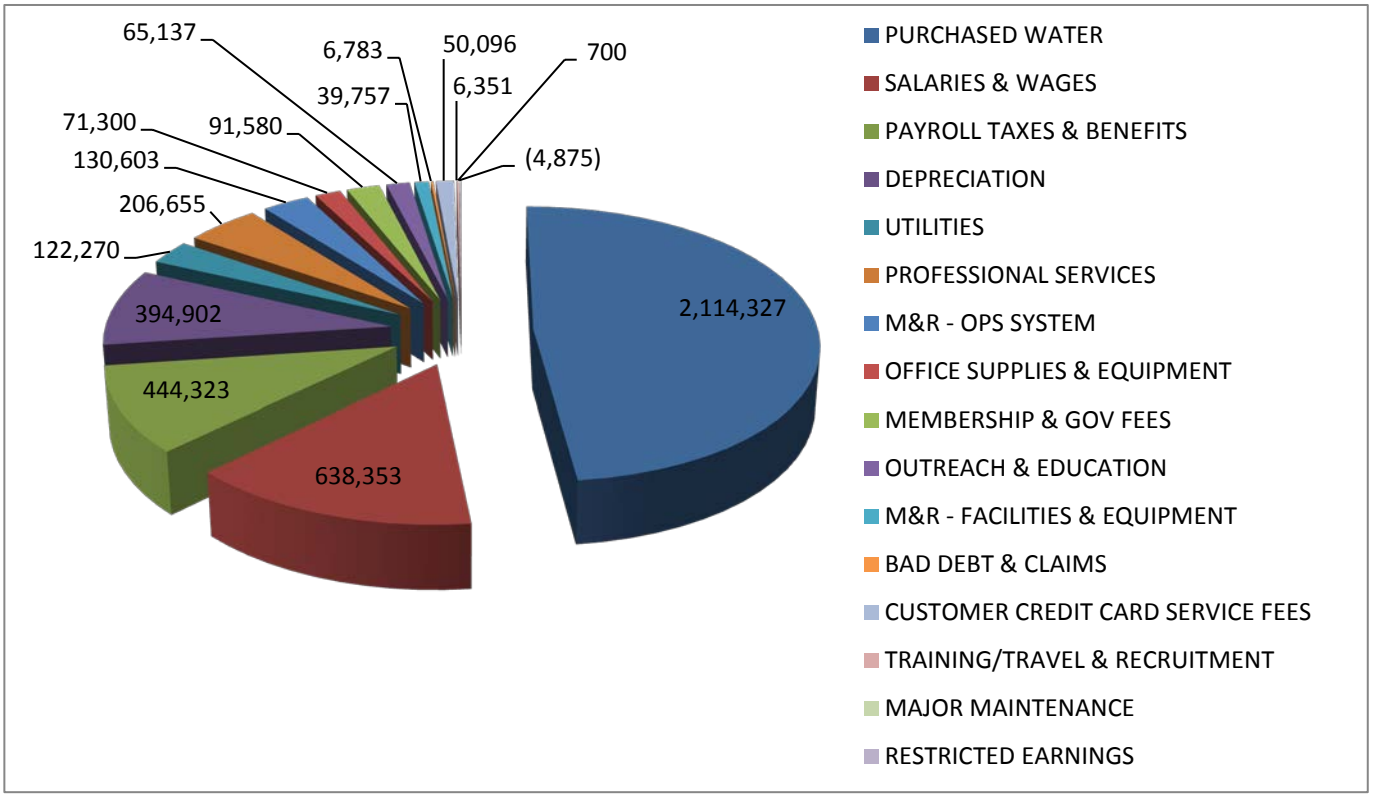
MID-PENINSULA WATER DISTRICT
OPERATIONS BUDGET FOR YEAR 2015-2016
DETAILED

ACCOUNT NUMBER	ACCOUNT DESCRIPTION	APPROVED FY 2015-2016 BUDGET $	ACTUAL 7/1/2015 11/30/2015	REMAINING BALANCE/ (OVER BUDGET)	Target YTD % 41.9% **Y-T-D % OF BUDGET**
8001	Working Reserves: Capital	-	-	-	NA
8002	Working Reserves: Operating	61,123	-	61,123	NA
8000	RESERVES	61,123	-	61,123	NA
9010	DEPRECIATION	870,000	394,902	475,098	45.4%
SUB-TOTAL - OPERATING EXPENSES		8,129,003	3,295,587	4,833,416	40.5%
TOTAL OPERATING EXPENSES		10,923,320	4,378,263	6,545,057	40.1%
	NET OPERATING SURPLUS/(LOSS) TRANSFER TO CAPITAL	700,000	372,034	327,966	53.1%

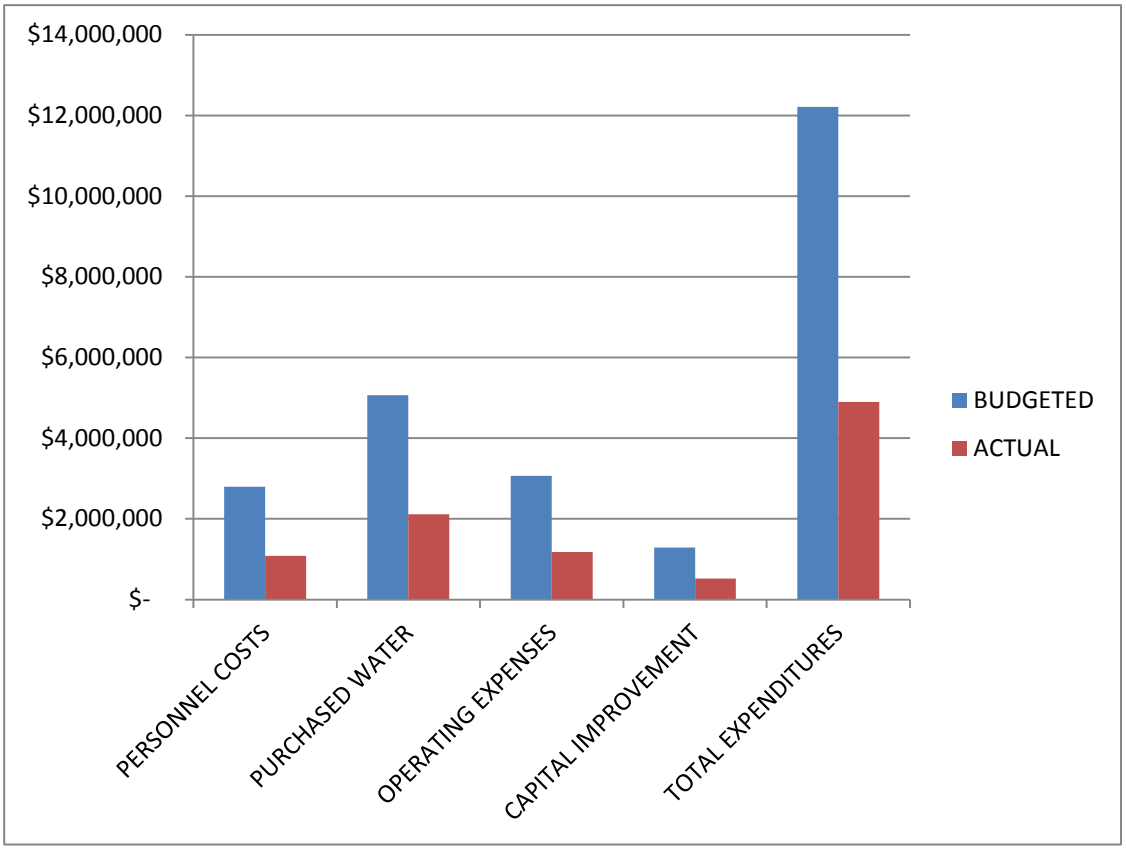
(A) Three new service line installations.
(B) Received funds from customer's insurance company to replace hit fire hydrant.
(C) Receipt of Property Tax revenue: December 2015 and April 2016.
(D) Partnered with ACWA/JPIA with Wellness Program $1961.
(E) Annual work boots purchased for Operations staff $2,215.
(F) High Efficiency Toilet Rebate Program excess participation.
(G) Washing Machine Rebate Program excess participation.
(H) Lawn-Be-Gone Rebate Program excess participation.
(I) Accounting for Inventory and operation expenses (expensing per policy items over $5,000).
(J) Accounting for Inventory and operation expenses (expensing per policy items over $5,000).
(K) Accounting for Inventory and operation expenses (expensing per policy items over $5,000).
(L) Restocking low office supplies.
(M) Prior Year Charge: 2014/2015 SWRCB bill for permitting, inspections & investigations, compliance, and monitoring totaling $20,395.92
(N) FY 2014/2015 Comcast expenses included.
(O) Unexpected Litigation Support totaled $15,640.
(P) Distribution System Analysis totaled $13,363.
(Q) Audit complete. Waiting for final bill.

MID-PENINSULA WATER DISTRICT
ACTUAL OPERATING EXPENDITURES SUMMARY
Nov-15

OPERATING EXPENDITURES	ACTUAL $	% OF TOTAL
PURCHASED WATER	2,114,327	48.3%
SALARIES & WAGES	638,353	14.6%
PAYROLL TAXES & BENEFITS	444,323	10.1%
DEPRECIATION	394,902	9.0%
UTILITIES	122,270	2.8%
PROFESSIONAL SERVICES	206,655	4.7%
M&R - OPS SYSTEM	130,603	3.0%
OFFICE SUPPLIES & EQUIPMENT	71,300	1.6%
MEMBERSHIP & GOV FEES	91,580	2.1%
OUTREACH & EDUCATION	65,137	1.5%
M&R - FACILITIES & EQUIPMENT	39,757	0.9%
BAD DEBT & CLAIMS	6,783	0.2%
CUSTOMER CREDIT CARD SERVICE FEES	50,096	1.1%
TRAINING/TRAVEL & RECRUITMENT	6,351	0.1%
MAJOR MAINTENANCE	700	0.0%
RESTRICTED EARNINGS	(4,875)	-0.1%
TOTAL OPERATING EXPENDITURES	**4,378,263**	**100%**



2014/2015 BUDGET vs ACTUAL TOTAL EXPENDITURES
Nov-15



TOTAL EXPENDITURES	BUDGETED	ACTUAL	BUDGETED % OF TOTAL	ACTUAL % OF TOTAL
PERSONNEL COSTS	$ 2,794,317	$ 1,082,676	23%	22%
PURCHASED WATER	$ 5,062,000	$ 2,114,327	41%	43%
OPERATING EXPENSES	$ 3,067,003	$ 1,181,260	25%	24%
CAPITAL IMPROVEMENT	$ 1,292,000	$ 517,881	11%	11%
TOTAL EXPENDITURES	**$ 12,215,320**	**$ 4,896,144**	**100%**	**100%**

MID-PENINSULA WATER DISTRICT
PROPOSED AMENDED BUDGET FOR FY 2015-2016
CAPITAL OUTLAY/CAPITAL PROJECTS

DESCRIPTION	APPROVED AMENDED FY 2015-2016 BUDGET $	ACTUAL 7/1/2015 11/30/2015	REMAINING BALANCE/ (OVER BUDGET)	Target YTD % 41.9% **Y-T-D % OF BUDGET**
CAPITAL IMPROVEMENTS - WORK IN PROCESS (WIP)				
AMI Meter Change Out Program	400,000	359,465	40,535	89.9%
Karen Road Water Main Replacement - CIP	100,000	4,749	95,251	4.7%
Hallmark Tank Structural and Seismic Retrofit - CIP	55,000	909	54,091	1.7%
Dekoven Tanks Structural and Seismic Retrofit - CIP	55,000	28,740	26,260	52.3%
Folger Pump Station Demolition - CIP	50,000	2,418	47,582	4.8%
Buckland Tank Replacement Project - CIP	46,000	23,817	22,183	51.8%
Alameda de las Pulgas Water Main Replacement Project - CIP	30,000	22,336	7,664	74.5%
CAPITAL IMPROVEMENTS - WIP TOTAL	**736,000**	**442,434**	**293,566**	60.1%
CAPITAL OUTLAY				
SCADA Replacement Project	171,000	22,552	148,448	13.2%
Financial Management System (FMS) - Comprehensive Replacement	145,000	-	145,000	0.0%
Fleet Replacement: Four pickup trucks	125,000	-	125,000	0.0%
Dairy Lane Wiring/Cabling	40,000	31,601	8,399	79.0%
Replacement Printer/Copier/Scanner	25,000	21,294	3,706	85.2%
Miscellaneous Capital Outlay/Projects	50,000	-	50,000	0.0%
CAPITAL OUTLAY TOTAL	**556,000**	**75,446**	**480,554**	13.6%
CAPITAL IMPROVEMENTS & CAPITAL OUTLAY TOTAL	**1,292,000**	**517,881**	**774,119**	40.1%
DEPRECIATION	870,000	394,902	475,098	45.4%
TRANSFER FROM OPS	700,000	372,034	327,966	53.1%
TRANSFER (TO)/FROM CAPITAL RESERVES	(278,000)	(249,055)	(28,945)	89.6%
CAPITAL OUTLAY/CAPITAL PROJECTS	(1,292,000)	(517,881)	(774,119)	40.1%
NET RESULTS OF CAPITAL	**-**	**(0)**	**0**	N/A

MID-PENINSULA WATER DISTRICT
PREVIOUS YEAR COMPARISON

	Jul - Nov 15	Jul - Nov 14	$ Change	% Change
Ordinary Income/Expense				
Income				
4000 · OPERATING REVENUE	4,599,624.17	4,519,085.94	80,538.23	1.78%
4100 · INTEREST INCOME	4,875.31	4,433.22	442.09	9.97%
4200 · OTHER INCOME	145,797.03	223,765.28	-77,968.25	-34.84%
Total Income	4,750,296.51	4,747,284.44	3,012.07	0.06%
Cost of Goods Sold				
5000 · Cost of Goods Sold	0.00	0.00	0.00	0.0%
Total COGS	0.00	0.00	0.00	0.0%
Gross Profit	4,750,296.51	4,747,284.44	3,012.07	0.06%
Expense				
6000 · PERSONNEL COSTS	1,082,676.22	934,105.01	148,571.21	15.91%
6100 · PURCHASED WATER	2,114,326.52	2,051,836.04	62,490.48	3.05%
6200 · CUSTOMER CREDIT CARD SVS FEES	50,096.00	42,552.04	7,543.96	17.73%
6300 · OUTREACH/EDUCATION	65,137.43	26,662.31	38,475.12	144.31%
6400 · M&R - OPS SYSTEMS	130,602.90	143,459.91	-12,857.01	-8.96%
6500 · M&R - FACILITIES & EQUIPMENT	39,757.40	46,576.25	-6,818.85	-14.64%
6600 · MAJOR MAINTENANCE	700.00	0.00	700.00	100.0%
6700 · OFFICE SUPPLIES & EQUIPMENT	71,300.24	97,327.01	-26,026.77	-26.74%
6800 · MEMBERSHIP & GOV FEES	91,580.13	58,987.66	32,592.47	55.25%
6900 · BAD DEBT & CLAIMS	6,783.47	12,348.35	-5,564.88	-45.07%
7000 · UTILITIES	122,270.38	147,519.12	-25,248.74	-17.12%
7100 · PROFESSIONAL SERVICES	206,654.54	157,401.30	49,253.24	31.29%
7200 · TRAINING & TRAVEL	6,350.93	7,403.05	-1,052.12	-14.21%
Total Expense	3,988,236.16	3,726,178.05	262,058.11	7.03%
Net Ordinary Income	762,060.35	1,021,106.39	-259,046.04	-25.37%
Other Income/Expense				
Other Expense				
9000 · OTHER EXPENSE	394,902.03	350,096.02	44,806.01	12.8%
Total Other Expense	394,902.03	350,096.02	44,806.01	12.8%
7302 - RESTRICTED EARNINGS EXPENSE - INTEREST LAIF	-4,875.31	-4,433.22	-442.09	-10.0%
Total Restricted Earnings Expense	-4,875.31	-4,433.22	-442.09	-10.0%
Net Operating Surplus/(Loss)	372,033.63	675,443.59	-303,409.96	-44.9%