

Sutter Mutual Water Company
SBx7-7 Attachments to
Sacramento Valley Regional Water Management Plan

Agricultural Water Management Plan Checklist

TABLE 1

Sutter Mutual Water Company – Agriculture Water Management Plan Checklist

2010/2011 Sacramento Valley Regional Water Management Plan Annual Update

RWMP* Location	Guidebook Location	Description	SB X7-7 Section (or other, as identified)
X	1.4	AWMP Required?	10820, 10608.12
X	1.4	At least 25,000 irrigated acres or	10853
-	1.4	Less than 25,000 acres and funding provided	10853
	1.4	Initial AWMP prepared and adopted by December 31, 2012?	10820 (a)
-	1.4	December 31, 2015 update?	10820 (a)
-	1.4	5-year cycle update?	10820 (a)
-	1.4	New agricultural water supplier after December 31, 2012 - AWMP prepared and adopted within 1 year?	10820 (b)
-	1.5, 4.2	AWC 1999 MOU: Report on EWMP implemented or scheduled for implementation included?	10827
-	1.5, 5	USBR water management/conservation plan:	10828(a)
-	1.5, 5.1	Adopted and submitted to the United States Bureau of Reclamation within the previous four years? AND	10828(a)(1)
-	1.5, 5.1	The United States Bureau of Reclamation has accepted the water management/conservation plan as adequate?	10828(a)(2)
X	1.4	UWMP or participation in area wide, regional, watershed, or basinwide water management planning: does the plan meet requirements of SB X7-7 2.8? (use checklist)	10829
2004 BWMP TM 6 Section 11	3.1 A	Description of previous water management activities	10826(d)
	3.1 B.1	Was each city or county within which supplier provides water supplies notified that the agricultural water supplier will be preparing or amending a plan?	10821(a)
	3.2 B.2	Was the proposed plan available for public inspection prior to plan adoption?	10841

RWMP* Location	Guidebook Location	Description	SB X7-7 Section (or other, as identified)
	3.1 B.2	Publically-owned supplier: Prior to the hearing, was the notice of the time and place of hearing published within the jurisdiction of the publicly owned agricultural water supplier in accordance with Government Code 6066?	10841
	3.1 B.2	14 days notification for public hearing?	GC 6066
	3.1 B.2	Two publications in newspaper within those 14 days?	GC 6066
	3.1 B.2	At least 5 days between publications (not including publication date)	GC 6066
	3.1 B.2	Privately-owned supplier: was equivalent notice within its service area and reasonably equivalent opportunity that would otherwise be afforded through a public hearing process provided?	10841
	3.1 C.1	After hearing/equivalent notice, was the plan adopted as prepared or as modified during or after the hearing?	10841
X	3.1 C.2	Was a copy of the AWMP, amendments, or changes, submitted to the entities below, no later than 30 days after the adoption?	10843(a)
	3.1 C.2	The department.	10843(b)(1)
	3.1 C.2	Any city, county, or city and county within which the agricultural water supplier provides water supplies.	10843(b)(2)
	3.1 C.2	Any groundwater management entity within which jurisdiction the agricultural water supplier extracts or provides water supplies.	10843(b)(3)
	3.1 C.2	Any local agency formation commission serving a county within which the agricultural water supplier provides water supplies.	10843(b)(7)
X	3.1 C.3	Adopted AWMP availability	10844
-	3.1 C.3	Was the AWMP available for public review on the agricultural water supplier's Internet Web site within 30 days of adoption?	10844(a)
	3.1 C.3	If no Internet Web site, was an electronic copy of the AWMP submitted to DWR within 30 days of adoption?	10844(b)
	3.1 D.1	Implement the AWMP in accordance with the schedule set forth in its plan, as determined by the governing body of the agricultural water supplier.	10842
	3.2	Description of the agricultural water supplier and service area including:	10826(a)

RWMP* Location	Guidebook Location	Description	SB X7-7 Section (or other, as identified)
X			
2009 RWMP Update pg 2-18 to 2-19	3.2 A.1	Size of the service area.	10826(a)(1)
2010/11 RWMP Update pg 2-18 to 2-19	3.2 A.2	Location of the service area and its water management facilities.	10826(a)(2)
2007 RWMP pg 2-193 to 2-194	3.2 A.3	Terrain and soils.	10826(a)(3)
2007 RWMP pg 1-18 to 1-19	3.2 A.4	Climate.	10826(a)(4)
2007 RWMP pg 2-203 to 2-204	3.2 B.1	Operating rules and regulations.	10826(a)(5)
2010/11 RWMP Update pg 2-23	3.2 B.2	Water delivery measurements or calculations.	10826(a)(6)
2010/11 RWMP Update pg 1-2 and 2-23	3.2 B.3	Water rate schedules and billing.	10826(a)(7)
2007 RWMP pg. 2-161	3.2 B.4	Water shortage allocation policies.	10826(a)(8)
X	3.3	Water uses within the service area, including all of the following:	10826(b)(5)
2010/11 RWMP Update pg 2-20 to 2-22	3.3 A	Agricultural.	10826(b)(5)(A)
2007 RWMP pg 2-201	3.3 B	Environmental.	10826(b)(5)(B)
2007 RWMP pg 2-202	3.3 C	Recreational.	10826(b)(5)(C)
2007 RWMP pg 2-201	3.3 D	Municipal and industrial.	10826(b)(5)(D)
	3.3 E	Groundwater recharge.	10826(b)(5)(E)

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RWMP* Location	Guidebook Location	Description	SB X7-7 Section (or other, as identified)
2007 RWMP pg 2-201			
2010/11 RWMP Update pg 2-22	3.3 F	Transfers and exchanges.	10826(b)(5)(F)
2010/11 RWMP Update pg 2-20	3.3 G	Other water uses.	10826(b)(5)(G)
X	3.4 A	Description of the quantity of agricultural water supplier's supplies as:	10826(b)
2010/11 RWMP Update pg 2-19 to 2-20	3.4 A.1	Surface water supply.	10826(b)(1)
2009 RWMP Update pg 2-33 to 2-34	3.4 A.2	Groundwater supply.	10826(b)(2)
2007 RWMP pg 2-199	3.4 A.3	Other water supplies.	10826(b)(3)
2010/11 RWMP Update pg 2-22	3.4 A.4	Drainage from the water supplier's service area.	10826(b)(6)
X	3.4 B	Description of the quality of agricultural waters suppliers supplies as:	10826(b)
2007 RWMP pg 1-38 to 1-39	3.4 B.1	Surface water supply.	10826(b)(1)
2007 RWMP pg 1-41 to 1-42	3.4 B.2	Groundwater supply.	10826(b)(2)
2007 RWMP pg 1-41 to 1-42	3.4 B.3	Other water supplies.	10826(b)(3)
2010/11 RWMP Update pg 6-3 to 6-7	3.4 C	Source water quality monitoring practices.	10826(b)(4)
2007 RWMP pg 2-203	3.4 B.4	Drainage from the water supplier's service area.	10826(b)(6)
X	3.5	Description of water accounting, including all of the following:	10826(b)(7)

RWMP* Location	Guidebook Location	Description	SB X7-7 Section (or other, as identified)
2010/11 RWMP Update Appendix C	3.5 A	Quantifying the water supplier's water supplies.	10826(b)(7)(A)
2010/11 RWMP Update Appendix C	3.5 B	Tabulating water uses.	10826(b)(7)(B)
2010/11 RWMP Update Appendix C	3.5 C	Overall water budget.	10826(b)(7)(C)
2007 RWMP pg 1-24 to 1-26	3.5 D	Description of water supply reliability.	10826(b)(8)
---	3.6	Analysis of climate change effect on future water supplies analysis	10826(c)
X	3.7	Water use efficiency information required pursuant to Section 10608.48.	10826(e)
2007 RWMP pg 5-16 to 5-20	3.7 A	Implement efficient water management practices (EWMPs)	10608.48(a)
	3.7 A.1	Implement Critical EWMP: Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).	10608.48(b)
	3.7 A.1	Implement Critical EWMP: Adopt a pricing structure for water customers based at least in part on quantity delivered.	10608.48(b)
	3.7 A.2	Implement additional locally cost-effective and technically feasible EWMPs	10608.48(c)
	3.7 B	If applicable, document (in the report) the determination that EWMPs are not locally cost-effective or technically feasible	10608.48(d)
	3.7 A	Include a report on which EWMPs have been implemented and planned to be implemented	10608.48(d)
-	3.7 A	Include (in the report) an estimate of the water use efficiency improvements that have occurred since the last report, and an estimate of the water use efficiency improvements estimated to occur five and 10 years in the future.	10608.48(d)
-	5	USBR water management/conservation plan may meet requirements for EWMPs	10608.48(f)

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RWMP* Location	Guidebook Location	Description	SB X7-7 Section (or other, as identified)
-	6 A	Lack of legal access certification (if water measuring not at farm gate or delivery point)	CCR §597.3(b)(2)(A)
-	6 A, 6 B	Delivery apportioning methodology (if water measuring not at farm gate or delivery point)	CCR §597.3.b(2)(C),
	6 C	Description of water measurement BPP	CCR §597.4(e)(2)
	6 D	Conversion to measurement to volume	CCR §597.4(e)(3)
	6 E	Existing water measurement device corrective action plan? (if applicable, including schedule, budget and finance plan)	CCR §597.4(e)(4))

Critical Efficient Water Management Practices

Critical Efficient Water Management Practices

Water Code Section 10608.48(b) requires agriculture water suppliers to measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) Section 531.10 and to adopt a pricing structure for water customers based at least in part on quantity delivered. California Code of Regulation (CCR) §597, approved on July 11, 2012, defines how agriculture suppliers comply with Water Code Section 10601.48(b)(1). Sutter Mutual Water Company (SMWC) currently measures its deliveries to all customers and believes that it is in compliance with the provisions of Section 10608.48(b)(1) and the measurement accuracy provisions of CCR §597. Water delivery measurements at SMWC are described in the 2006 Sacramento Valley Regional Water Management Plan (RWMP) and its 2009 and 2010/2011 updates, which have been prepared in accordance with Reclamation's Regional Criteria. SMWC intends to meet the measurement certification requirements of CCR §597 as described below.

Critical EWMP #1 - Measurement

As described in RWMP and 2010/2011 Plan Update, SMWC's diversions from the Sacramento River are currently measured using flow meters and pump flow charts. Flows in laterals are measured at the lateral headgates based on headgate position and differential head pressure. Drain lift pump flows are measured using power consumption records and pump capacity information or pump curves. Drainage leaving the District is measured using a formula

developed by the Department of Water Resources (Department) for the main drainage discharge pump station.

Deliveries to fields within SMWC are made through three general types of devices, rated gates, over pour checks, and undershot checks. Currently, SMWC measures and records water deliveries to fields at each turnout. For rated gate turnouts, the gate opening and water levels on both the upstream and downstream side of the gate are measured and recorded together with the date and time of the readings. Flow rates are determined from tables developed by the gate manufacturer and are also recorded. Readings at each turnout are typically made twice daily; however, additional readings are made when deliveries are first started and when conditions within the canals are fluctuating or changes in deliveries are made. Similar measurements are made for undershot checks; the opening at the bottom of the check is set or measured, the differential head pressure is determined by measuring the water levels on either side of the check and the flow rates are read from tables developed from suppressed orifice flow equations. Over pour checks are used mainly to maintain water levels in laterals and delivery canals; however, in some cases they are used for turnout deliveries. These devices are limited to locations where there is sufficient fall over the check to allow for accurate measurement. In these locations deliveries are measured using the ITRC Weir Stick which allows the flow rate to be calculated based on the width of the check structure and the reading on the weir stick. As with the other two devices readings are made and recoded twice per day or more often if warranted. For all turnouts the volume delivered is calculated based on the flow rate data recorded for each site and time of delivery.

Table 1 below identifies the number and type of turnout measurement devices along with an estimated level of volumetric accuracy for each device.

Table 1 – Summary of Turnout Structures

Measurement Type	Number	Estimated Accuracy	Reading Frequency	Maintenance Frequency
Rated Gate	?	±6% to ±12%	Bi-Daily or as needed	Annual / as needed
Over Pour Check	?	±6% to ±12%	Bi-Daily or as needed	Annual / as needed
Undershot Check	?	±6% to ±12%	Bi-Daily or as needed	Annual / as needed
Total	?			

Certification Plan

SMWC intends to certify that the existing measurement devices meet the accuracy requirements for existing measurement devices using field inspections and analysis as described in CCR §597.4(b)(3). The initial certification process will include development of protocols to confirm each of the existing devices are installed and maintained to the manufacturer’s recommendations, design specifications, or industry recognized standards. All field inspections will be conducted by individuals trained in the use of the field inspection techniques and will be documented in a report approved by an engineer. In addition to the field inspections, current operation and maintenance practices will be reviewed to assure they meet best professional practices. A summary of the operation and maintenance practices, together with any recommendations for changes, will be included in the report approved by the engineer. The initial estimate of the cost to develop and implement the certification program and to prepare the report required pursuant to CCR §597 is \$190,000. The cost estimate may be revised as the certification program developed and refined. SMWC intends to conduct the certification program over a three year period. Table 2 below provides the anticipated schedule for implementation.

Table 2 – Schedule of Certification Tasks

Task	2013	2014	2015
Development of Inspection Protocols, Review of O&M Practices and Procedures,	X		
Field Inspections, Testing, and Quality Control	X	X	X
Document Results and Preparation of Report by Engineer			X
Initial Estimate of Annual Costs	\$90,000	\$40,000	\$60,000

Finance Plan

As identified above, the costs to certify the accuracy of SMWC’s existing turnout measurements and to comply with the requirements of SBx7-7 are estimated to be approximately \$190,000 to be expended over a three year period. In order to offset the impact of these added costs on the Company and its customers SMWC intends to seek funding through any grants that may be available from either the California Department of Water Resources or the U.S. Bureau of Reclamation.

Corrective Action Plan

As identified above, SMWC believes its existing measurement devices meet the accuracy requirements of CCR §597. A plan for corrective action will be developed following completion of the certification program if it is determined that the existing measurement devices or practices do not meet the accuracy requirements of the regulation.

Critical EWMP #2 – Pricing in Part by Volume Measured

Prior to 2003, SMWC charged customers for the volume of water delivered using the existing devices and methods described above. Beginning in 2003, the SMWC Board changed

the pricing policy to charge users based on acreage and duties for various crop types. The duties are based on generally recognized quantities of water required for each crop type, e.g. the duty for crops with higher water demands are greater than those with lower demands.. Although the pricing policy changed the Company has continued to measure and record deliveries at each turnout.

Once the certification plan described under Critical EWMP #1 has been completed, SMWC's Board will consider and develop an appropriate pricing policy based in part on the measured volume delivered to customers in accordance with Water Code Section 10601.48(b)(2).

Conditional Efficient Water Management Practices

Conditional Efficient Water Management Practices

SMWC has evaluated many of the Conditional EWMPs as part of the 2007 Sacramento Valley Regional Water Management Plan and its updates through addressing the targeted benefits (TBs) and quantifiable objective (QOs). SMWC may further address conditional EWMPs at a future date.

Additional Documentation

Additional documentation as required in SBx7-7 for 2012 is presented as follows: