

TO: COMMITTEE MEMBERS

FROM: DON SPAGNOLO
GENERAL MANAGER 

DATE: NOVEMBER 3, 2010

AGENDA ITEM 2

NOV 8, 2010

EMERGENCY WATER SHORTAGE REGULATION DETERMINATION

ITEM

Consider Emergency Water Shortage Regulation Determination [RECEIVE REPORT AND PROVIDE DIRECTION TO STAFF]

BACKGROUND

The Board recently received a technical report from Brad Newton of SAIC regarding the Spring 2010 Groundwater Index. The report examined the groundwater surface elevations in many monitoring wells across the mesa to compute the groundwater index. The results indicate the spring 2010 groundwater index is 80,000 acre-feet (AF).

A technical memorandum was previously presented to the Board titled the Emergency Water Shortage Regulations and Future Groundwater in Storage prepared by SAIC in January 2008. The memorandum identified groundwater in storage (GWS) amounts that designate Water Shortage Conservation Stages I-IV. The conservation stages were developed on the basis of historical groundwater in storage estimates, the change in the groundwater in storage annually and the magnitude of uncertainty in the estimates of groundwater in storage. The GWS was classified as the groundwater index (GWI) in later reports. The following are the ranges of the designated stages for water storage in the previous draft ordinance:

Attached are two documents:

- *Voluntary Conservation Measures*, which has been adopted by the Board.
- *Emergency Water Shortage Regulations*, which has been previously brought before the NCSD Board but not acted upon.

IMPACT

Implementation of the restricted use of water or water conservation goals may reduce overall revenue, depending on the length of time the measures are sustained. An Emergency Water Shortage amendment to Chapter 3.24 of the District Code will only impact NCSD customers, and is not currently part of any Nipomo Mesa Management Area Technical Group proceedings.

RECOMMENDATION

Staff recommends that the Board receive the report and provide direction to staff, if any.

ATTACHMENT

- *Voluntary Conservation Measures*.
- *Emergency Water Shortage Regulations (Draft)*.

VOLUNTARY CONSERVATION MEASURESAmendments to Chapter 3.24 of the District Code

3.24.010 Definitions.

- A. "Applicant" means person who requests water from the district.
- B. "Customer" means person receiving water from the district distribution system.
- C. "District" means Nipomo Community Services District.
- D. "HFC" means hundred cubic feet.

3.24.020 Voluntary Restrictions on Non-Essential and/or Wasteful Use of Water.

- A. District water customers are requested to comply with the prohibitions on water use as follows:
 - (1) Use through any meter when the utility has notified the customer in writing to repair a broken or defective lateral, sprinkler, watering or irrigation system and the customer has failed to effect such repairs within five business days;
 - (2) Individual private washing of cars, trucks, trailers, and commercial vehicles with a hose except with the use of a positive action shut-off nozzle;
 - (3) Use of potable water to irrigate turf, lawns, gardens, or ornamental landscaping between the hours of 7 a.m. and 7 p.m. without quick acting positive action shut-off nozzle;
 - (4) Use of potable water for washing streets with trucks, except to protect the health and safety of the public;
 - (5) Operation of commercial car washes without recycling at least 50% of the potable water used per cycle;
 - (6) Use of potable water for decorative fountains or the filling or topping off of decorative lakes or ponds. Exceptions are made for those decorative fountains, lakes, or ponds which utilize recirculated water;
 - (7) Service of water by any restaurant except upon request of a patron; and
 - (8) Use of potable water to flush hydrants, except where required for public health or safety.
- B. The General Manager shall institute a public campaign including notices to each District water customer within fourteen (days) of the District's approval of these Voluntary Conservation Measures.

8/7/2009

Nipomo Community Services District Draft Ordinance
Chapter 3.24
Emergency Water Shortage Regulations

3.24.010 Purpose

It is the purpose and intent of this Chapter to provide rules, regulations and procedures by which the Nipomo Community Services District ("District") Board of Directors can restrict water use upon a determination that there exists, or there is a threat of, a water shortage that affects the District's ability to supply its customers with potable water. The rules, regulations and procedures of this Chapter are in addition to water conservation measures that are adopted by the Board of Directors to avoid water shortage conditions and or conservation measures adopted by the County of San Luis Obispo in response to certification of Severity Level III for the Nipomo Mesa Water Conservation Area.

3.24.020 Findings

- A. The District has been pumping from the underlying groundwater basin since 1965. In 2006 the District's wells extracted approximately 3,000 plus acre feet and supplied approximately 4,000 connections. The District's boundaries are largely within the Nipomo Mesa Water Conservation Area (NMWCA) as referenced in San Luis Obispo County Ordinance 3090.
- B. The District's current water supply is groundwater extracted primarily from the NMWCA. A small proportion of District's water is pumped from groundwater in the Nipomo Valley.
- C. The primary source of recharge of the NMWCA is deep percolation of rainwater, with contributions from agricultural and urban return flows, and sub-surface inflows within the Santa Maria Basin. The dependence on deep percolation as the major source of recharge makes the groundwater supply within the NMWCA vulnerable during prolonged periods of low rainfall.
- D. Since July 1997 the Santa Maria Groundwater Basin has been the subject of ongoing litigation between nearly eight hundred parties (800), including the District, with competitive claims to pump groundwater. (Superior Court of the State of California, County of Santa Clara, Case No. 770214).

- E. As part of the Groundwater Adjudication referenced in Finding D, above, a majority of parties, including the District, ConocoPhillips, the Woodlands Mutual Water Company, Golden State Water Company and Rural Water Company have entered into a Stipulation, imposing a physical solution to establish a legal and practical means of assuring the Nipomo Mesa Management Area's (NMMA) long-term sustainability (herein "Stipulation"). The NMMA's boundaries are substantially similar to the boundaries referred to herein as the NMWCA. The Stipulation contemplates the formation of a NMMA Technical Group to develop a monitoring program for the NMMA. Additionally, the NMMA Technical Group will develop, for Court approval, criteria for declaring Potentially Severe Water Shortage Conditions and Severe Water Shortage Conditions.
- F. In November 2004, the County Board of Supervisors received a Resource Capacity Study ("RCS") prepared by the San Luis Obispo County Planning Department for the NMWCA. The RCS reached the same conclusions as other groundwater reports that pumping from the NMWCA exceeds safe yield and recommended a Severity Level III be adopted pursuant to the County's Resource Management System. The RCS concluded that in 2003 the Nipomo Mesa water demand exceeded safe yield by 2,602 AFY and further concluded that the deficit would increase to 4,020 AFY by the year 2010.
- G. On August 22, 2007, Science Applications International Corporation ("SAIC") issued Technical Memorandum regarding Groundwater in Storage Above Sea Level for the Nipomo Mesa Management Area as of Spring, 2007. That Memorandum summarizes the decline in groundwater storage in the NMWCA from Spring of 2000 through Spring of 2007. The Technical Memorandum concluded that between Spring of 2000 and Spring of 2007, the groundwater in storage declined by 15,000 AF, with 14,000 AF decline between Spring of 2006, and Spring of 2007.
- H. On June 26, 2007, the County, at the recommendation of the Planning Commission, certified a Severity Level III for water resources of the NMWCA pursuant to the County's Resource Management System. Under the County system, Level III indicates an "Unavoidable Resource Deficiency," defined as follows: "This is the most critical level of concern. Level III occurs when the capacity (maximum safe yield) of a resource has been met or exceeded. At Level III there is a deficiency of sufficient magnitude that drastic actions may be needed to protect public health and safety".
- I. The San Luis Obispo County Public Works Department measures groundwater surface elevations in monitoring wells located within the NMWCA in the Spring and Fall of each year ("DPW Reports").

- J. Science Applications International Corporation (SAIC), using the DPW Reports and other data, has developed a method of calculating groundwater in storage above mean sea level within the NMWCA.
- K. SAIC Reports have been presented to the District Board of Directors, with the most recent report dated January 6, 2008. The January 6, 2008, SAIC Report provides a historical analysis of the water demand and groundwater in storage of the NMMA. The January 6, 2008,, SAIC Report recommends the use of groundwater in storage to establish trigger points to implement water shortage regulations.
- L. Using groundwater in storage above mean sea level within the NMMA provides a logical method of establishing the threat or existence of water shortages and the adoption of regulations to conserve the water resource.
- M. This Chapter is adopted to conserve a public water supply for the protection of the health, welfare and safety of the residents of the Nipomo Community Services District.

3.24.025 Authority

The District's authority includes, but is not limited, to Government Code §61100 (A) and §§ 71640 et seq. of the Water Code.

3.24.030 Definitions

AF means acre feet of water.

Base Year means the calendar year immediately prior to the District Board of Directors declaring an initial Water Conservation Stage.

CCF means 100 cubic feet of water or one unit.

Customer means the owner of property that receives District water service.

GWS means groundwater in storage above mean sea level, as reported to the District.

Irrigation Use means and includes all uses other than residential use and commercial use and includes water supplied to parks, recreational facilities such as golf courses, landscaping, and water supplied to schools to irrigate turf.

K means one thousand (1,000)

Mixed Use SM means and includes buildings designed and used for both residential and commercial use that are served by a single water meter.

Multi-family Residential means (A): a building(s) or portion thereof designed and used as residence for two or more families living independently of each other under a common roof. Such uses shall include but are not limited to: duplexes, triplexes, apartments, planned unit developments, condominiums and townhouses, and (B) mobile homes used as residential units within mobile home parks. Multi-family Residential does not include secondary units.

Non-Residential Use means all uses other than residential uses, including commercial use, agricultural use, institutional use (eg. . schools, churches, libraries, etc.) Mixed Use SM and irrigation use, that receive District water.

Owner means one who has title to the property being served, or is legally authorized to represent the title owner.

Person includes a natural person, joint venture, joint stock company, partnership, association, club, company corporation, business, trust organizer, or the manager, lessee, agent, servant officer, or employee of any of them.

SF means square feet.

Single Family Residence or SFR means a stand-alone building not connected to another dwelling, and designed for residential occupancy by one family regardless of zoning of the property. A single family residence may, or may not, have a secondary unit.

3.24.035 Santa Maria Groundwater Adjudication

With reference to the adjudication of the Santa Maria Groundwater Basin and the formation of the NMMA Technical Group, the following are incorporated into the most appropriate stage referenced in Section 3.24.040 by reference:

- A. The Court- approved criteria for declaring a Potentially Severe Water Shortage Condition and Severe Water Shortage Condition.
- B. The conservation measures recommended by the NMMA Technical Group to address Potentially Severe Water Shortage Conditions.
- C. Water conservation programs approved by the Court for Severe Water Shortage Conditions.

3.24.040 Trigger Points

Water Shortage Conservation Stages I – IV shall be triggered by the following conditions when the GWS is at or below the relevant Trigger Condition:

Stage I Conservation – Water Watch

Trigger Condition: The GWS is less than 100,000 AF but greater than the Stage II Trigger Point.

Stage II Conservation – Water Warning

Trigger Condition: The GWS is less than 90,000 AF but greater than the Stage III Trigger Point.

Stage III Conservation – Water Emergency

Trigger Condition: The GWS is less than 80,000 AF but greater than the Stage IV Trigger Point.

Stage IV Conservation – Extreme Water Emergency

Trigger Condition: The GWS is less than 70,000 AF.

3.24.050 Stage Implementation

The General Manager shall monitor the groundwater in storage above mean sea level and the demand for water and shall report in writing to the Board, on or before June 1 of each year, the appropriate water conservation stage, if any, referenced in Sections 3.24.040, above. The Board shall, no later than four weeks after receipt of such report, consider the General Manager's report at a public hearing. Notice of the time and place of the public hearing shall be published one time at least seven days prior to the date of the hearing in a newspaper of general circulation within the District. If the Board concurs that any such events have occurred, it shall immediately adopt a resolution implementing a water conservation stage referenced in Section 3.24.060.

3.24.060 Water Shortage Conservation Stages.

A. Stage I Conservation – Water Watch.

1. Upon a determination by the Board of Directors that a Stage I condition exists, the following recommendations shall take effect:
 - (a) All outdoor irrigation of vegetation should occur only after 8 p.m. and before 9 a.m.
 - (b) The use of potable water to wash sidewalks, walkways, driveways, parking lots, open ground and other hard-surface areas by direct application is discouraged.
 - (c) The use of non-drinking water fountains, except for those using recirculated water, is discouraged.
 - (d) Use of potable water which results in run-off in gutters or streets is discouraged.

2. In addition to those measures stated above, the Board of Directors by resolution and/or ordinance may adopt additional water conservation measures.
3. The General Manager shall provide notice to all District customers, regarding the Board of Directors declaration of Water Watch condition and activation of Stage I Water Conservation Program. Such notice shall be mailed within fourteen (14) days of the Board's action.

B. Stage II Conservation – Water Warning.

1. Upon a determination by the Board of Directors that the a Stage II condition exists, the following measures and prohibitions shall take effect, with the goal of achieving a **ten percent (10%)** reduction in water consumption:
 - (a) The water conservation recommendations referenced in Stage 1 shall be mandatory and constitute prohibitions.
 - (b) Water deliveries for residential uses shall be limited as follows:
 1. 24 ccf of water bi-monthly or 295 gallons per day per multi-family residential unit.
 2. 27 ccf of water bi-monthly or 329 gallons per day per single family residential unit on lots <4500 sf.
 3. 36 ccf of water bi-monthly or 442 gallons per day per single family residential unit on lots 4.5k – 10k sf.
 4. 64 ccf of water bi-monthly or 787 gallons per day on single family residential lots >10k sf.
 - (c) Non-Residential Uses shall be limited to ninety percent (90%) of their water consumption for the same billing cycle during the Base Year.
 - (d) A surcharge of **two hundred percent (200%)** will be levied on all water use in excess of the maximum water use allotment referenced in subparagraphs (b) and (c) above and shall be assessed to the account of the Customer .
 - (e) Use of water from fire hydrants shall be limited to fire suppression and/or other activities immediately necessary to maintain health, safety and welfare of residents within the boundaries of the Nipomo Community Services District.

- (f) The use of District potable water, including fire hydrant water, for dust control and compaction for construction projects shall be prohibited.
 - (g) The washing of automobiles, golf carts, pickup trucks, horse trailers, boats and other types of mobile equipment not occurring upon the immediate premises of a commercial car wash and/or commercial service station that use recirculated water shall be prohibited. Emergency service vehicles are subject to Section 3.24.100.
 - (h) Restaurants shall not serve water to their customers except upon specific request.
 - (i) Applications for Intent-to-Serve Letters shall be received and placed on a waiting list, but further processing shall be suspended.
 - (j) Water main flushing shall only occur in emergency situations as declared by the District General Manager.
 - (k) All swimming pools and spas shall be covered when not in use.
 - (l) Water transfers, through emergency interties, to adjoining water purveyors will only be allowed upon written proof, to the satisfaction of the General Manager, of the existence of a water delivery emergency.
2. The General Manager is authorized and directed to pursue a vigorous public information program about water supply conditions and the need to reduce water consumption by such means deemed appropriate by the General Manager.
 3. The District will meet with other water purveyors, public school districts, park agencies, and golf courses, that use water sources other than District supplied water, to seek voluntary reduction in irrigation of decorative landscape and reduce irrigation of turf and play areas.
 4. In addition to those measures stated above, the Board of Directors, by resolution and/or ordinance, may adopt additional water conservation measures on an urgency basis.

C. Stage III Conservation – Water Emergency.

1. Upon a determination of the Board of Directors, that Stage III conditions exist, the following measures and prohibitions shall take effect, with a goal of achieving a **thirty-five percent (35%)** reduction in water consumption:
 - (a) The water conservation measures and prohibitions referenced in Stage 2 , above.
 - (b) Water deliveries for residential uses shall be limited as follows:
 1. 17 ccf of water bi-monthly or 214 gallons per day per multi-family residential unit.
 2. 19 ccf of water bi-monthly or 238 gallons per day per single family residential units <4500 sf.
 3. 26 ccf of water bi-monthly or 319 gallons per day per single family residential units 4.5k – 10k sf.
 4. 46 ccf of water bi-monthly or 569 gallons per day per single family residential units >10k sf.
 - (c) Non-Residential Uses shall be limited to **sixty-five percent (65%)** of their water consumption for the same billing cycle during the Base Year.
 - (d) A surcharge of **four hundred percent (400%)** will be levied on all water use in excess of the maximum water use allotment reflected in subparagraphs (a) and (b) above, and shall be assessed to the account of the Customer.
 - (e) Will-Serve Letters shall be suspended and the setting of new water meters shall be prohibited.
2. In addition to those measures stated above, the Board of Directors, by resolution and/or ordinance, may adopt additional water conservation measures on an urgency basis.

D. Stage IV Conservation – Extreme Water Emergency

1. Upon a determination of the Board of Directors that Stage IV conditions exist, the following measures and prohibition measures shall be take effect, with the goal of achieving a **fifty percent (50%)** reduction in water consumption:

- (a) Water conservation measures and prohibitions referenced in Stages 2 and 3, above.
 - (b) Water deliveries for residential uses shall be limited as follows:
 1. 14 ccf per of water bi-monthly or 170 gallons per day per multi-family residential unit.
 2. 15 ccf of water bi-monthly or 183 gallons per day per single family residential unit <4500 sf lot.
 3. 20 ccf of water bi-monthly or 246 gallons per day per single family residential unit 4.5k -10k sf lot.
 4. 36 ccf of water bi-monthly or 437 gallons per day per single family residential unit >10k sf lot.
 - (c) Non-Residential Uses shall be limited to **fifty per cent (50%)** of the water consumption for the same billing cycle during the Base Year.
 - (d) A surcharge of **five hundred percent (500%)** will be levied on all water use in excess of the maximum water use allotment reflected in subparagraph a and b above and shall be assessed to the account of the Customer.
 - (e) The use of potable water to irrigate grass, lawns, ground cover, shrubbery, crops, vegetation, and ornamental trees, etc. shall be prohibited; and all irrigation meters within the District shall be locked.
2. In addition to those measures stated above, the Board of Directors, by resolution and/or ordinance, may adopt additional water conservation measures on an urgency basis.

3.24.070 Termination of Stages

The Board of Directors may terminate water conservation stages based upon a finding that the groundwater storage above mean sea level within the NMWCA is at or above 100,000 AF or the Board of Directors may reduce a water conservation stage to a lower level by Resolution based on a finding that the GWS is capable of providing sufficient water at a reduced water conservation stage to meet the demands and requirements of the District's water customers.

3.24.080 Calculations

A. When Multi-Family units are served by a single water meter, the total volume of metered water shall be divided by the number of units to determine compliance with conservation stages.

B. Limitations of water use referenced in 3.24.060 B(1)(b), C (1)(b) and D (1)(b) shall be based on the gross square footage of the relevant parcels.

C. The surcharge calculations for exceeding water allotments referenced in 3.24.060 B(1)(b), C(1)(b) and D(1)(b) shall be based on the standard charge for water use over the limitation times the surcharge. For example, if a multifamily residential unit used 27 ccf of water during a bi-monthly period instead of the 17 ccf maximum water allotment referenced in 3.24.060 C(1)(b)(1), then the excess use over the allotment would be 10 ccf and if the standard cost per ccf was \$1, the surcharge for the multi-family unit in addition to the normal bill would be \$40 (10 ccf times \$1 times 4).

3.24.090 Enforcement

A. In addition to the water surcharges referenced in Section 3.24.060, the following applies to customers violating the water allotment provisions of this Chapter commencing with Stage II:

1. First Violation. A Notice of Violation shall be both mailed to the customer by first class mail, return receipt requested, and posted by door hanger on the affected property.
2. Second Violation. A Notice of Violation shall be sent to the customer by certified mail, return receipt requested, and by door hanger, with an explanation of the gravity of the situation and the penalties for future violations. A delinquent bill, including the appropriate surcharge, shall be increased by a penalty of ten percent (10%).
3. Third Violation. Water service will be discontinued and the water meter will be locked, or if necessary, removed from the premises of the violator. The District will send notice via certified mail at least seventy-two (72) hours prior to discontinuance of service and will attempt to contact an adult person at the premises by telephone or personal contact at least twenty-four (24) hours prior to discontinuance of service.

The meter will be reinstalled on conditions set by the District and after the payment of District reconnection charges and the payment of all other charges, surcharges and penalties owing.

B. Violation of Conservation Measures Other Than Water Allotment.

1. First Violation. A Notice of Violation shall be both mailed to the customer or person other than the customer, (i.e. tenant), by first class mail, return receipt requested, and posted by door hanger on the affected property.
2. Successive Violations. The second violation and each and every violation thereafter shall be subject to the provisions of Section 3.24.080 C, below.

C. Violations Unlawful.

1. It is unlawful for any person to violate any provision or fail to comply with any of the requirements of this Chapter. A violation of any of the provisions or failure to comply with any of the requirements shall constitute a misdemeanor punishable by a fine not exceeding six hundred dollars (\$600) or by imprisonment in the County Jail for a period not exceeding thirty (30) days or by both such fine and imprisonment.
2. Notwithstanding subparagraph 1, above, any misdemeanor violation or failure to comply may, in the discretion of District Legal Counsel, be initially charged and subsequently prosecuted as an infraction. Each and every infraction or violation is punishable by a fine not exceeding fifty dollars (\$50) for the first violation; a fine not exceeding one hundred dollars (\$100) for the second violation of this Chapter within one year; and a fine not exceeding two hundred fifty dollars (\$250) for the third violation of this Chapter within one year.
3. Each person shall be guilty of a separate offense for each and every day during any portion of which any violation of this Chapter is committed, continued, or permitted by such person and shall be punishable accordingly.

D. Injunctive Relief

The District may petition the Superior Court for the issuance of a permanent or temporary injunction, or both, as may be appropriate, in restraining any person or customer from the continued violation of this Chapter.

landscape conservation, etc.) and the appropriate water conservation stage that should be applied to the applicant.

B. Lot Size Appeals

The General Manager will consider appeals based on the District's determination of lot size for the purposes of imposing water delivery limitations. Said appeals shall be in writing and shall include proof of gross lot size based on square footage.

C. Change in Commercial Use

When commercial use is changed, (eg. when an office building is converted to restaurant use), the General Manager may consider appeals to adjust the Base Year for the purposes of compliance with the water use limitations. Requests shall be in writing and shall contain an engineer's or architect's water use calculation of the new use. The General Manager shall consider other similar existing uses in considering whether or not an adjustment is warranted.

D. Applicable to All Appeals

1. The terms of any exception or determination shall be set forth in writing and may contain conditions. The General Manager's determination shall be kept on file with the District and a copy will be furnished to the applicant. All exceptions granted shall be reported to the Board of Directors at a regularly scheduled meeting.
2. An applicant may appeal the General Manager's decision to the Board of Directors. A request for appeal must be submitted to the District in writing not more than ten (10) days after the General Manager's decision. The Board of Directors shall consider the appeal within thirty (30) days of receipt of the request for appeal.

3.24.100 Exceptions

A. Public safety departments, such as fire departments and police departments, are exempt from the requirements of this Chapter, provided that said departments first lodge with the General Manager a water conservation plan.

B. Commercial car washes that provide proof of the use of recycled water, to the satisfaction of the General Manager, are exempt from the requirements of this Chapter.

TO: COMMITTEE MEMBERS

FROM: DON SPAGNOLO
GENERAL MANAGER



AGENDA ITEM

3

DATE: 11/3/2010

NOV 8, 2010

CALIFORNIA URBAN WATER CONSERVATION COUNCIL'S BEST MANAGEMENT PRACTICES

ITEM

CALIFORNIA URBAN WATER CONSERVATION COUNCIL BEST MANAGEMENT PRACTICES
[RECEIVE AND PROVIDE DIRECTION TO STAFF].

BACKGROUND

A California Urban Water Conservation Council ("CUWCC") *best management practice* ("BMP") is defined by the CUWCC as a policy, program, practice, rule, regulation or ordinance or the use of devices, equipment or facilities which meets of the following criteria:

- An established and generally accepted practice among water suppliers that results in more efficient use or conservation of water;
- A practice for which sufficient data are available from existing water conservation projects to indicate that :
 - Significant conservation or conservation-related benefits can be achieved;
 - The practice is technically and economically reasonable and not environmentally or socially unacceptable;
 - The practice is not otherwise unreasonable for most water suppliers to carry out.

The BMPs are part of the *Memo of Understanding* each water provider signs when joining the CUWCC. NCS D joined CUWCC in January 2008.

The BMPs are both guidelines to achieve water conservation, and part of the reporting process water suppliers performs to document the suppliers' water-conservation efforts and results. With the passage of Senate Bill 7-7, by which the 20x2020 edict from Governor Schwarzenegger, a supplier's ability to receive state grants and loans are tied to their water-conservation efforts and achievements.

Although the term *best management practice* has been used in various statutes and regulations, the definitions and interpretations of that term in those contexts does not apply to the CUWCC's BMPs. The CUWCC term has an independent and specific meaning.

Attached please find CUWCC's *Memo of Understanding, Exhibit 1, BMP Definitions, Schedules and Requirements*.

FISCAL IMPACT

All California water suppliers must meet the 20% conservation goals set by the 20x2020 edict. All California suppliers must file their 20x2020 forms on the CUWCC BMP-reporting software.

As a member of the CUWCC, NCS D has access to tools, workshops and information to assist with addressing the BMPs.

California water suppliers who do not meet their 20x2020 conservation goals will not be considered for State funding, including grants and loans.

California water suppliers who do not meet their 20x2020 conservation goals will not be considered for State funding, including grants and loans.

If we achieve our water conservation goals, the BMP reporting is very minimal. If we diligently work on the BMPs and are a little behind in not meeting our goals, the fact that we are working on the BMPs buys us time.

As a customer with ConserveTrack software, the BMP reporting will be easier (the same company providing us ConserveTrack software is also providing software programming for the CUWCC's BMP reporting system, and ConserveTrack is designed with completing the BMPs in mind).

RECOMMENDATIONS

Receive information and provide direction to Staff.

ATTACHMENTS

CUWCC Memo of Understanding, Exhibit 1, BMP Definitions, Schedules and Requirements.

EXHIBIT 1. BMP DEFINITIONS, SCHEDULES AND REQUIREMENTS

As Amended December 10, 2008; As Formatted March 9, 2005; As Amended re: Base Year on September 21, 2000

This Exhibit contains Best Management Practices (BMPs) that signatory water suppliers commit to implementing. Suppliers' water needs estimates will be adjusted to reflect estimates of reliable savings from these BMPs. For some BMPs, no estimate of savings is made.

It is recognized by all parties that a single implementation method for a BMP would not be appropriate for all water suppliers. In fact, it is likely that in the future, water suppliers will find new implementation methods even more effective than those described. Any implementation method used should be at least as effective as the methods described below.

- The Council's 14 BMPs are now organized into five categories. Two categories, Utility Operations and Education, are "Foundational BMPs", because they are considered to be essential water conservation activities by any utility and are adopted for implementation by all signatories to the MOU as ongoing practices with no time limits. The remaining BMPs are "Programmatic BMPs" and are organized into Residential, Commercial, Industrial, and Institutional (CII), and Landscape categories. The minimal activities required of each signatory are encompassed within each list, except for activities from which a utility is exempt from completing under section 4.5 of the MOU and for which the utility has filed an exemption with the Council.

BMP Naming Changes

Old BMP Number & Name	New BMP category
1. Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers	Programmatic: Residential
2. Residential Plumbing Retrofit	Programmatic: Residential
3. System Water Audits, Leak Detection and Repair	Foundational: Utility Operations – Water Loss Control
4. Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections	Foundational: Utility Operations – Metering
5. Large Landscape Conservation Programs and Incentives	Programmatic: Landscape
6. High-Efficiency Clothes Washing Machine Financial Incentive Programs	Programmatic: Residential

EXHIBIT 1

As Amended September 16, 2009

7. Public Information Programs	Foundational: Education – Public Information Programs
8. School Education Programs	Foundational: Education – School Education Programs
9. Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts	Programmatic: Commercial, Industrial, and Institutional
10. Wholesale Agency Assistance Programs	Foundational: Utility Operations – Operations
11. Retail Conservation Pricing	Foundational: Utility Operations – Pricing
12. Conservation Coordinator	Foundational: Utility Operations – Operations
13. Water Waste Prohibition	Foundational: Utility Operations – Operations
14. Residential ULFT Replacement Programs	Programmatic: Residential

Compliance with the BMP water savings goals can be accomplished in one of three ways including: accomplishing the specific measures as listed in Section A of each BMP; accomplishing a set of measures which achieves equal or greater water savings, referred to in this document as the Flex Track Menu; and accomplishing set water savings goals as measured in gallons per capita per day consumption.

A signatory may elect to adopt additional or alternative measures, in part or in any combination, as described in the Flex Track Menus, provided that the demonstrated water savings in the Flex Track Menu activities are equal to or greater than the water savings that would be achieved by the BMP measures.

“Demonstrated water savings” represent unit water savings for individual BMP or Flex Track Menu conservation technologies and activities as established by either: (a) a water utility; (b) independent research studies; or (c) CUWCC- adopted savings as reviewed by the Research and Evaluation Committee and approved by the Board of Directors.

Another alternative method to satisfying the BMP requirements is “GPCD (gallons per capita per day) Compliance”. Agencies which choose a GPCD Compliance approach will be counting overall water savings of the quantifiable measures from the BMP list or Flex Track Menu plus additional savings achieved through implementation of the Foundational BMPs. [The actual targets and methodology associated with the GPCD Compliance approach will be adopted by the Council Plenary in accord with the MOU; and is intended for adoption by the spring Plenary of 2009 but will be no later than the summer 2009

EXHIBIT 1

As Amended September 16, 2009

Plenary.] Savings goals and methodology will be updated in the MOU Compliance Policies from time to time based upon data and studies.

The BMP definitions below are divided into the following sections:

Section A: Implementation

“Implementation” means achieving and maintaining the staffing, funding and, in general, the priority levels necessary to achieve the level of water savings or activity called for in the implementation section of each definition, and to satisfy the commitment by the signatories to use good faith efforts to optimize savings from implementing BMPs as described in Section 4.4 of the MOU.

Section B: Implementation Schedule

Signatory water suppliers will implement the Best Management Practices according to the schedules in each definition. These schedules state the latest dates by which implementation of BMPs must be underway. It is recognized that some signatories are already implementing some BMPs and that these schedules do not prohibit signatories from implementing BMPs sooner than required.

Section C: Coverage Requirements

This section specifies the minimum level of coverage required by the BMPs.

Section D: Requirements for Documenting BMP Implementation

Section D of each definition contains the minimum record keeping and reporting requirements for agencies to document BMP and Flex Track Menu implementation levels and efforts, and will be used to guide Council development of the BMP implementation report forms and database.

Section E: Water Savings Assumptions

Section E of each definition contains the assumptions of reliable water savings to be used in accordance with Sections 5.1 and 5.2 of the MOU. These will be updated from time by the Research and Evaluation Committee and published in the MOU Compliance Policy and BMP Guidebook.

Section F: Flex Track Option

This section is included in the Programmatic BMP definitions. The approach is defined in this Exhibit, and the Menu is contained in the MOU Compliance Policy and BMP Guidebook, where it can be updated from time to time with approval of the Research and Evaluation Committee.

In this Exhibit, a measure is intended to be an individual activity and a practice is a set of measures.

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As Amended September 16, 2009

FOUNDATIONAL BMPs

1. UTILITY OPERATIONS PROGRAMS

Water utilities throughout California are implementing water conservation programs and providing services to the customers they serve. There are four subcategories that comprise signatory utility operation program responsibilities.

1.1 OPERATIONS PRACTICES

This practice will outline several key actions that utilities shall take to better enable conservation program implementation, to supplement conservation incentives with regulations where appropriate, and to assist one another through the wholesaler-retailer relationship.

A. Implementation

Implementation shall consist of at least the following actions:

1) Conservation Coordinator (*formerly BMP 12*)

Designate a person as the agency's responsible conservation coordinator for program management, tracking, planning, and reporting on BMP implementation.

2) Water waste prevention (*formerly BMP 13*)

a) New development

Enact, enforce, or support legislation, regulations, ordinances, or terms of service that (1) prohibit water waste such as, but not limited to: single-pass cooling systems; conveyer and in-bay vehicle wash and commercial laundry systems which do not reuse water; non-recirculating decorative water fountains and (2) address irrigation, landscape, and industrial, commercial, and other design inefficiencies.

b) Existing users

Enact, enforce, or support legislation, regulations, ordinances, or terms of service that prohibit water waste such as, but not limited to: landscape and irrigation inefficiencies, commercial or industrial inefficiencies, and other misuses of water.

c) Water shortage measures

Enact, enforce, or support legislation, regulations, ordinances, or terms of service that facilitate implementation of water shortage response measures.

3) Wholesale agency assistance programs (*formerly BMP 10*)

This section addresses assistance relationships between regional wholesale agencies and intermediate wholesale agencies as well as between wholesale agencies and retail agencies.

a) Financial investments and building partnerships

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When mutually agreeable and beneficial to a wholesaler and its retail agencies, a wholesaler will provide financial assistance and help build partnerships to accomplish conservation. Wholesale water suppliers will consider avoided capital costs when making financial investments and build regional partnerships to advance water conservation efforts and effectiveness. Where applicable, intermediate wholesale water suppliers that receive conservation-related financial incentives from regional wholesalers will pass through eligible financial incentives to retail agencies operating programs at the retail level.

b) Technical support

When requested, wholesale water agencies will provide conservation-related technical support and information to retail agencies they serve. Support and information will include, but will not be limited to: workshops and support advice addressing conservation program planning, design, implementation, and evaluation.

c) Program management

When mutually advantageous, wholesale and retail water agencies will join together to plan, design, implement, manage, and evaluate regional conservation programs.

When mutually agreeable and beneficial, the wholesale agency or another lead regional agency will operate all or part of the conservation program; if the wholesale agency or other lead regional agency operates all or part of a program, then it may, by mutual consent with the retail agency, assume responsibility for CUWCC reporting for funded BMPs; under this arrangement, a wholesale agency or other lead regional agency may aggregate all or portions of the reporting and coverage requirements of all retail agencies joining into the mutual consent.

d) Water shortage allocations

Wholesale agencies shall pursue water shortage allocation policies or plans which minimize disincentives to long-term water conservation, and encourage and reward investments in long-term conservation shown to advance regional water supply reliability and sufficiency.

e) Non-signatory reporting

To the extent possible, wholesale water agencies will provide reports on BMP implementation within their service area by retail water agencies that are not signatories to the MOU.

f) Encourage CUWCC membership

Wholesale agencies will encourage all of their retail agencies to become MOU signatories, provide information to assist the CUWCC in recruitment targeting, and may assist in paying CUWCC dues for their retail agencies.

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B. Implementation Schedule

Implementation shall commence no later than July 1 of the first year following the latter of either: 1) the year the agency signed or became subject to the MOU, or 2) the year this Exhibit is amended.

C. Coverage Requirements

Coverage shall consist of:

1) Conservation Coordinator

Staff and maintain the position of trained conservation coordinator, or equivalent consulting support, and provide that function with the necessary resources to implement BMPs.

2) Water waste prevention

Water Agency shall do one or more of the following:

- a. Enact and enforce an ordinance or establish terms of service that prohibit water waste
- b. Enact and enforce an ordinance or establish terms of service for water efficient design in new development
- c. Support legislation or regulations that prohibit water waste
- d. Enact an ordinance or establish terms of service to facilitate implementation of water shortage response measures
- e. Support local ordinances that prohibit water waste
- f. Support local ordinances that establish permits requirements for water efficient design in new development.

3) Wholesale agency programs

a) Financial investments and building partnerships

When mutually agreeable and beneficial to a wholesaler and its retail agencies cost-effectiveness assessments, including avoided cost per acre-foot, will be completed for each BMP the wholesale agency is potentially obligated to support. The methodology used will conform to the Council standards and procedures, and the information reported will be sufficient to permit independent verification of the calculations and of any exemptions claimed on the cost-effectiveness grounds.

b) Technical support

When requested provide technical support, incentives, staff or consultant support, and equivalent resources to retail members to assist, or to otherwise support, the implementation of BMPs.

c) Program management

When mutually agreeable and beneficial to a wholesaler and its retail agencies offer program management and BMP reporting assistance to its retailers and the results of the offer will be documented. It is recognized that wholesale agencies have limited control over retail

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agencies that they serve and must act in cooperation with those retail agencies on implementation of BMPs. Thus, wholesale agencies cannot be held responsible for levels of implementation by individual retailers in their wholesale service areas.

d) Water shortage allocation

Water shortage allocations plans or policies will encourage and reward investments in long-term conservation.

e) Non-signatory reporting

Wholesale water agencies will report on non-signatory BMP implementation, when possible.

4) Encourage CUWCC membership

Wholesale agencies will encourage CUWCC membership and offer recruitment assistance.

D. Requirements for Documenting BMP Implementation

1) Conservation coordinator

Provide the contact information for the conservation coordinator, or consultant assigned, and verification that the position is responsible for implementing the tasks identified in Section A.1).

2) Water waste prevention

Provide the following:

a) A description of, or electronic link to, any ordinances or terms of service adopted by water agency to meet the requirements of this BMP.

b) A description of, or electronic link to, any ordinances or requirements adopted by local jurisdictions or regulatory agencies with the water agency's service area.

c) A description of any water agency efforts to cooperate with other entities in the adoption or enforcement of local requirement consistent with this BMP.

d) A description of agency support positions with respect to adoption of legislation or regulations consistent with this BMP.

3) Wholesale agency assistance programs

a) Financial investments and building partnerships

List the total monetary amount of financial incentives and equivalent resources provided to retail members to assist with, or to otherwise support, implementation of BMPs, subtotaled by BMP. List regional partnerships developed to encourage resource conservation and maximize economies of scale benefits.

b) Technical support

Supply a summary of types of technical support provided to retail agencies.

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c) Program management

If the wholesale agency has assumed reporting responsibility, list the programs managed on behalf of its retail agencies.

d) Water shortage allocation

If a water shortage allocation plan or policy has been developed, provide the date of adoption and electronic link to the document or hardcopy.

e) Non-signatory reporting

Receipt of reports

4) Encourage CUWCC membership

List of efforts to recruit retailers and amount of dues paid on behalf of retail agencies.

E. Water Savings Assumptions

Not quantified. However, water savings may be realized in the following ways:

1) Wholesalers may use the Council's Cost and Savings document to assess the total amount of water savings achieved by each wholesaler-supported BMP. Other statistically validated sources may be also used to demonstrate water savings.

2) Water savings from enforcement of legislation and regulations will be projections developed based on anticipated savings from device(s) applied to the population subject to the regulation(s).

3) Water savings from implementation of water waste prevention measures.

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1.2 Water Loss Control (formerly BMP 3) as amended September 16, 2009

The goals of modern water loss control methods include both an increase in water use efficiency in the utility operations and proper economic valuation of water losses to support water loss control activities. In May 2009 the American Water Works Association (AWWA) published the 3rd Edition M36 Manual *Water Audits and Loss Control Programs*. BMP 1.2 will incorporate these new water loss management procedures and apply them in California. Agencies are expected to use the AWWA Free Water Audit Software ("AWWA Software") to complete their standard water audit and water balance.

A. Implementation

Implementation shall consist of at least the following actions:

- 1) **Standard Water Audit and Water Balance.** All agencies shall quantify their current volume of apparent and real water loss. Agencies shall complete the standard water audit and balance using the AWWA Water Loss software to determine their current volume of apparent and real water loss and the cost impact of these losses on utility operations at no less than annual intervals.
- 2) **Validation.** Agencies may use up to four years to develop a validated data set for all entries of their water audit and balance. Data validation shall follow the methods suggested by the AWWA Software to improve the accuracy of the quantities for real and apparent losses.
- 3) **Economic Values.** For purposes of this BMP, the economic value of real loss recovery is based upon the agency's avoided cost of water as calculated by the Council's adopted Avoided Cost Model or other agency model consistent with the Council's Avoided Cost Model.
- 4) **Component Analysis.** A component analysis is required at least once every four years and is defined as a means to analyze apparent and real losses and their causes by quantity and type. The goal is to identify volumes of water loss, the cause of the water loss and the value of the water loss for each component. The component analysis model then provides information needed to support the economic analysis and selection of intervention tools. An example is the Breaks and Background Estimates Model (BABE) which segregates leakage into three components: background losses, reported leaks and unreported leaks.
- 5) **Interventions.** Agencies shall reduce real losses to the extent cost-effective. Agencies are encouraged to refer to the AWWA's 3rd Edition M36 Publication, *Water Audits and Loss Control Programs* (2009) for specific methods to reduce system losses.
- 6) **Customer Leaks.** Agencies shall advise customers whenever it appears possible that leaks exist on the customer's side of the meter.

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B. Implementation Schedule

- 1) For agencies signing the MOU prior to December 31, 2008, implementation shall commence no later than July 1, 2009.
 - a) July 1, 2009 through June 30, 2010 will be the first year of implementation;
 - b) Agencies shall provide its first full BMP 1.2 report by December 1, 2010 for years 2008-2009 and 2009-2010;
- 2) Agencies signing the MOU after December 31, 2008, implementation shall commence no later than July 1 of the year following the year the agency signed the MOU.
 - a) Agencies shall provide a full BMP 1.2 report for the first reporting period after implementation and for each reporting year thereafter.
- 3) A benchmark for the performance indicator in terms of water loss standards will be determined after the first 4 years data collected based upon the data reported by agencies. The performance indicator and benchmark; will be voted upon by the Council by year 6 of this revision. Ongoing data collection and data reporting requirements will be established as part of this process.

C. Coverage Requirements

- 1) Agencies to compile the standard water audit and balance annually using the AWWA Software. Beginning in the 2nd year of implementation agencies to test source, import, and production meters annually.
- 2) Agencies shall improve the data accuracy and data completeness of the standard water balance during the first four years of implementation. Agencies shall achieve a Water Audit Data Validity score of 66 or higher using the AWWA software no later than the end of the first four year period; and shall achieve data validity Level IV no later than the end of the 5th year of implementation. Estimations for data that are not directly measured should be improved using the methods outlined by the AWWA.
- 3) Agencies shall seek training in the AWWA water audit method and component analysis process (offered by CUWCC or AWWA) during the first four years of BMP implementation. They shall complete a component analysis of real losses by the end of the fourth year, and update this analysis no less frequently than every four years.
- 4) Beginning in the fifth year of implementation, through the tenth year of implementation, agencies shall demonstrate progress in water loss control performance as measured by the AWWA software real loss performance indicator "gallons per service connection per day;" "gallons per mile of mains per day;" or other appropriate indicator by one of the following:

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- a) Achieving a performance indicator score less than the agency's score the previous year;
 - b) Achieving a performance indicator score less than the average of the agency's scores for the previous three years; or
 - c) Achieving a performance indicator score in the top quintile (20%) of all signatory agencies reporting such performance indicator with a Data Validity Level IV; or ;
 - d) In year 6 and beyond reducing real losses to or below the benchmark value determined in the Council's process referenced in section B3.
- 5) Agencies shall repair all reported leaks and breaks to the extent cost effective. By the end of the second year, agencies shall establish and maintain a record-keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair. By the end of the fourth year, agencies shall include estimated leakage volume from report to repair, and cost of repair (including pavement restoration costs and paid-out damage claims, if any).
- 6) Agencies shall locate and repair unreported leaks to the extent cost effective.

D. Requirements for Documenting BMP Implementation

- 1) Agency shall submit the completed AWWA Standard Water Audit and Water Balance worksheets in the BMP 1.2 report form every reporting period.
- 2) For each reporting period, agency shall keep and make available validation for any data reported.
- 3) Agency shall maintain in-house records of audit results, methodologies, and worksheets for each completed audit period.
- 4) Agency keeps records of each component analysis performed, and incorporates results into future annual standard water balances.
- 5) Agency, for the purpose of setting the Benchmark:
 - a) keeps records of intervention(s) performed, including standardized reports on leak repairs, the economic value assigned to apparent losses and to real losses, miles of system surveyed for leaks, pressure reduction undertaken for loss reduction, infrastructure rehabilitation and renewal, volumes of water saved, and costs of intervention(s); and
 - b) prepares a yearly summary of this information for submission to the Council, during years two through five of implementation, unless extended by the Council.

E. Water Savings Assumptions

To Be Determined

EXHIBIT 1

As Amended September 16, 2009

1.3 METERING WITH COMMODITY RATES FOR ALL NEW CONNECTIONS AND RETROFIT OF EXISTING CONNECTIONS

(formerly BMP 4) As Amended March 14, 2007

A. Implementation

For consistency with California Water Code (Section 525b), this BMP refers to potable water systems. A water meter is defined as a device that measures the actual volume of water delivered to an account in conformance with the guidelines of the American Water Works Association. Implementation shall consist of at least the following actions:

- 1) Require meters for all new service connections.
- 2) Establish a program for retrofitting existing unmetered service connections.
- 3) Read meters and bill customers by volume of use.
 - a) Establish and maintain billing intervals that are no greater than bi-monthly (every two months) for all customers.
 - b) For each metered connection, perform at least five actual meter readings (including remotely sensed) per twelve month period.
- 4) Prepare a written plan, policy or program that includes:
 - a) A census of all meters, by size, type, year installed, customer class served and manufacturer's warranty accuracy when new;
 - b) A currently approved schedule of meter testing and repair, by size, type and customer class;
 - c) A currently approved schedule of meter replacement, by size, type, and customer class; and
- 5) Identifying intra- and inter-agency disincentives or barriers to retrofitting mixed use commercial accounts with dedicated landscape meters, and conducting a feasibility study(s) to assess the merits of a program to provide incentives to switch mixed use accounts to dedicated landscape meters.

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As Amended September 16, 2009

B. Implementation Schedule

- 1) Agencies signing the MOU prior to December 31, 1997, shall:
 - a) Initiate volumetric billing for all metered customers no later than July 1, 2008; and
 - b) Complete meter installation for all connections no later than July 1, 2009.
- 2) Agencies signing the MOU after December 31, 1997, shall:
 - a) Initiate volumetric billing for all metered customers no later than July 1, 2008 or within one year of signing the MOU if later than July 1, 2008; and
 - b) Complete meter installation for all service connections no later than July 1, 2012 or within six years of signing MOU, but in no case later than one year prior to the requirements of state law.
- 3) For unmetered service areas newly acquired or newly operated by otherwise metered agencies, meter installation shall be completed in these service areas within six years of the acquisition or operational agreement.
- 4) A feasibility study examining incentive programs to move landscape water uses on mixed-use meters to dedicated landscape meters to be completed by the end of Year Four following the date implementation was to commence.
- 5) A written plan, policy or program to test, repair and replace meters [see Section A(4) above] shall be completed and submitted electronically by July 1, 2008 or within one year of signing the MOU if later than July 1, 2008, whichever is later.

C. Coverage Requirements

100% of existing unmetered accounts to be metered and billed by volume of use within above specified time periods. Service lines dedicated to fire suppression systems are exempt from this requirement.

D. Requirements for Documenting BMP Implementation

- 1) Confirmation that all new service connections are metered and are being billed by volume of use and provide:
 - a) Number of metered accounts;
 - b) Number of metered accounts read;
 - c) Number of metered accounts billed by volume of use;

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- d) Frequency of billing (i.e. six or twelve times per year) by type of metered customer (e.g. single family residential, multiple family residential, commercial, industrial, and landscape irrigation); and
 - e) Number of estimated bills per year by type of metered customer (e.g. single family residential, multiple family residential, commercial, industrial, and landscape irrigation) vs. actual meter readings.
- 2) Number of unmetered accounts in the service area. For the purposes of evaluation, this shall be defined as the baseline meter retrofit target, and shall be used to calculate the agency's minimum annual retrofit requirement.
 - 3) Number of unmetered service connections retrofitted during the reporting period.
 - 4) Estimated number of CII accounts with mixed-use meters.
 - 5) Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period.

E. Criteria to Determine BMP Implementation Status

- 1) Agency with existing unmetered service connections has completed a meter retrofit plan by the end of Year Two following the date implementation was to commence.
- 2) Agency has completed a feasibility study examining incentive programs to move landscape water uses on mixed-use meters to dedicated landscape meters by the end of Year Two following the date implementation was to commence.
- 3) Agency with existing unmetered service connections is on track to meter these connections during the schedule shown in Section B. An agency will be considered on track if the percent of unmetered accounts retrofitted with meters equals or exceeds the following:

Target Dates for "On Track" Compliance with BMP 4	
Percent of unmetered accounts retrofitted	Agency signed the MOU prior to December 31, 1997
10 percent	December 31, 2000
24 percent	December 31, 2002
42 percent	December 31, 2004
64 percent	December 31, 2006
90 percent	December 31, 2008

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100 percent	July 1, 2009
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Target Dates for "On Track" Compliance with BMP 4	
Percent of unmetered accounts retrofitted	All agencies signing the MOU after 1997
20 percent	December 31, 2004
40 percent	December 31, 2006
60 percent	December 31, 2008
80 percent	December 31, 2010
100 percent	July 1, 2012

- 4) Agency bills metered customers at least as often as bimonthly within four years.
- 5) Agency reads meters and bills metered customers using volumetric rates.
- 6) Agency has completed a written plan, policy or program to test, repair and replace meters.

F. Water Savings Assumptions

Assume meter retrofits and volumetric rates combined will result in a 20% reduction in demand for retrofitted accounts.

G. Commitment to Further Review

Within three years from the date this BMP revision is adopted, the CUWCC will complete an evaluation of the potential water use efficiency impacts and cost-effectiveness of the following for consideration as future BMP revision(s):

- 1) Criteria for meter testing, repair, replacement and accuracy;
- 2) Transition to installing automated meter reading (AMR) technologies; and
- 3) Transition to monthly billing schedules for all accounts.

EXHIBIT 1

As Amended September 16, 2009

1.4 Retail Conservation Pricing (formerly BMP 11)

As Amended June 13, 2007

Part I - Retail Water Service Rates

A. Implementation

BMP 11 promotes water conserving retail water rate structures. BMP 11 recognizes that each agency or water enterprise fund has a unique rate setting system and history. When creating a rate case, professional judgments are made to determine whether costs are accounted to a variable or fixed cost center by the staff of the agency. The final water rate case is an accumulation of all the decisions and judgments made by staff and supplemented by the financial projections leading an agency to establish its final water rate recommendation. BMP 11 is not intended to supplant this process, but rather to reinforce the need for Water Agencies to establish a strong nexus between volume-related system costs and volumetric commodity rates.

In *Bighorn-Desert View Water Agency v. Virjil* the California Supreme Court applied Proposition 218's* provisions embodied in Articles XIII C and D of the California Constitution to ongoing water service. In addition, Article XIII D, Section 6 imposes procedural and substantive requirements on new or increased fees or charges for on-going water service. The Council considers the conservation principles of BMP 11 to be compatible with the cost of service requirements of Proposition 218. However, should a case arise in which a Water Agency's good faith efforts were unable to meet BMP 11's requirements due to legal constraints (e.g. Proposition 218), this would be grounds for exemption, as specified in MOU Section 4.5.

Definition: Conservation pricing provides economic incentives (a price signal) to customers to use water efficiently. Because conservation pricing requires a volumetric rate, metered water service is a necessary condition of conservation pricing. Unmetered water service is inconsistent with the definition of conservation pricing.

Conservation pricing requires volumetric rate(s). While this BMP defines a minimum percentage of water sales revenue from volumetric rates, the goal of this BMP is to recover the maximum amount of water sales revenue from volumetric rates that is consistent with utility costs (which may include utility long-run marginal costs), financial stability, revenue sufficiency, and customer equity. In addition to volumetric rate(s), conservation pricing may also include one or more of the following other charges:

- 1) Service connection charges designed to recover the separable costs of adding new customers to the water distribution system.

* Proposition 218 was approved by California voters in November 1996.

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As Amended September 16, 2009

- 2) Monthly or bimonthly meter/service charges to recover costs unrelated to the volume of water delivered or new service connections and to ensure system revenue sufficiency.
- 3) Special rates and charges for temporary service, fire protection service, and other irregular services provided by the utility.

The following volumetric rate designs are potentially consistent with the above definition:

- 1) **Uniform rate** in which the volumetric rate is constant regardless of the quantity consumed.
- 2) **Seasonal rates** in which the volumetric rate reflects seasonal variation in water delivery costs.
- 3) **Tiered rates** in which the volumetric rate increases as the quantity used increases.
- 4) **Allocation-based rates** in which the consumption tiers and respective volumetric rates are based on water use norms and water delivery costs established by the utility.

Adequacy of Volumetric Rate(s): A retail agency's volumetric rate(s) shall be deemed sufficiently consistent with the definition of conservation pricing when it satisfies at least one of the following two options.

Option 1: Let V stand for the total annual revenue from the volumetric rate(s) and M stand for total annual revenue from customer meter/service (fixed) charges, then:

$$\frac{V}{V + M} \geq 70\%$$

This calculation shall only include utility revenues from volumetric rates and monthly or bimonthly meter/service charges. It shall not include utility revenues from new service connection charges; revenue from special rates and charges for temporary service, fire protection, or other irregular services; revenue from grants or contributions from external sources in aid of construction or program implementation; or revenue from property or other utility taxes.

Option 2: Use the rate design model included with the Municipal Water and Wastewater Rate Manual published by the Canadian Water & Wastewater Association with the signatory's water system and cost information to calculate V' , the uniform volume rate based on the signatory's long-run incremental cost of service, and M' , the associated meter charge. [Let HCF be annual water delivery (in hundred cubic feet).] A signatory's volumetric rate(s) shall be deemed sufficiently consistent with the definition of conservation pricing if:

$$\frac{V}{V + M} \geq \frac{V'}{V' + M'}$$

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The rate design model can be downloaded at
<http://www.cuwcc.org/resource-center/technical-resources/bmp-tools.aspx>.

This calculation shall only include utility revenues from volumetric rates and monthly or bimonthly meter/service charges. It shall not include utility revenues from new service connection charges; revenue from special rates and charges for temporary service, fire protection, or other irregular services; revenue from grants or contributions from external sources in aid of construction or program implementation; or revenue from property or other utility taxes.

Exemptions and At Least As Effective As

The exemption provisions in MOU Section 4.5 apply to BMP 11 in the same way they apply to other BMPs. Water supplier signatories meeting at least one of the three exemption conditions in MOU Section 4.5 may submit an exemption to the Council per the requirements of the MOU.

Water supplier signatories may pursue an "At Least As Effective As" implementation of BMP 11 per the Preamble to Exhibit 1 of the MOU. Water supplier signatories adopting an "At Least As Effective As" implementation of BMP 11 may adopt rates that do not meet the requirements of either Option 1 or Option 2 described in Section A provided the resulting water savings are at least as effective as those options.

BMP Refinement

Within five years of the adoption of this BMP revision, the Council shall reconvene the BMP 11 Revision PAC to 1) assess rate of compliance with the revised BMP, 2) identify barriers to implementation, 3) assess its compatibility with Proposition 218 requirements, 4) initiate a water savings assessment appropriate to the data and project resources available to the Council, and 5) develop further refinements as needed to improve the BMP's effectiveness.

B. Implementation Schedule

Agencies with fully metered service areas

- 1) Agencies signing the MOU prior to June 13, 2007, implementation shall commence no later than July 1, 2007.
- 2) Agencies signing the MOU after June 13, 2007, implementation shall commence no later than July 1 of the year following the year the Agency signed the MOU.

Agencies with partially metered service areas¹

¹ Agencies following this schedule must be on the Council's list of Agencies with partially metered service areas.

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- 1) Agencies signing the MOU prior to December 31, 1997, implementation shall commence no later than July 1, 2010. [One year after Agency is to complete meter installation per BMP 4.]
- 2) Agencies signing the MOU after December 31, 1997, implementation shall commence no later than July 1, 2013, or within seven years of signing the MOU, but in no case later than the metering deadline specified by state law. [One year after Agency is to complete meter installation per BMP 4.]

C. Coverage Requirements

Agency shall maintain a rate structure that satisfies at least one of the options specified in Section A. Conformance to Option 1 or Option 2 will first be assessed using the revenue from the most recent year. If the most recent year does not satisfy the option, the average revenue from the three (3) most recent years will be used.

D. Requirements for Documenting BMP Implementation

- 1) Report the rate structure in effect for each customer class for the reporting period.
- 2) Report the annual revenue derived from volume charges for each retail customer class, as defined in Section A.²
- 3) Report the annual revenue derived from monthly or bimonthly meter/service charges for each retail customer class, as defined in Section A.
- 4) If agency does not comply with Option 1 in Section A, report v' and m' as determined by the Canadian Water & Wastewater Association rate design model described in Section A.
- 5) If agency does not comply with Option 1 in Section A, submit to the Council the completed Canadian Water & Wastewater Association rate design model described in Section A.

E. Criteria to Determine BMP Implementation Status

An agency shall be in compliance with BMP 11 provided the following is true for the Agency's total revenue from all retail customer classes within four years after [date of revision]:

For Option 1: $V \geq 70\% \times 1.00$

For Option 2: $V \geq V' \times 1.00$

² Note: Compliance with BMP 11 will be determined based on the Agency's total revenue from all retail customer classes.

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The following schedule is intended to guide agencies in implementing this revision in phases:

YEARS AFTER START YEAR	FOR OPTION 1	FOR OPTION 2
1	$V \geq 70\% \times 0.70$	$V \geq V' \times 0.70$
2	$V \geq 70\% \times 0.80$	$V \geq V' \times 0.80$
3	$V \geq 70\% \times 0.90$	$V \geq V' \times 0.90$
4	$V \geq 70\% \times 1.00$	$V \geq V' \times 1.00$

An agency shall not be required to increase the volumetric component of the rate structure by more than 10% in any single year until the full implementation is achieved.

F. Water Savings Assumptions

Not quantified.

Part II – Retail Wastewater Rates

A. Implementation

This section applies to Water Agencies that provide retail sewer service. Water Agencies that do not provide retail sewer service shall make good faith efforts to work with sewer agencies so that those sewer agencies adopt conservation pricing for sewer service.

Conservation pricing of sewer service provides incentives to reduce average or peak use, or both. Such pricing includes: rates designed to recover the cost of providing service, and billing for sewer service based on metered water use. Conservation pricing of sewer service is also characterized by one or more of the following components: rates in which the unit rate is the same across all units of service (uniform rates); rates in which the unit rate increases as the quantity of units purchased increases (increasing block rates); rates in which the unit rate is based upon the long-run marginal cost or the cost of adding the next unit of capacity to the sewer system. Rates that charge customers a fixed amount per billing cycle for sewer service regardless of the units of service consumed do not satisfy the definition of conservation pricing of sewer service. Rates in which the typical bill is determined by high fixed charges and low commodity charges also do not satisfy the definition of conservation pricing of sewer service.

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B. Implementation Schedule

- 1) Agencies signing the MOU prior to December 31, 1997, implementation shall commence no later than July 1, 1998.
- 2) Agencies signing the MOU or becoming subject to the MOU after December 31, 1997, implementation shall commence no later than July 1 of the first year following the year the agency signed or became subject to the MOU.

C. Coverage Requirements

Agency shall maintain rate structure for sewer service consistent with definition of conservation pricing for sewer service in Part II, Section in A.

D. Requirements for Documenting BMP Implementation

- 1) Report annual revenue requirement for sewer service by customer class for the reporting period.
- 2) Report annual revenue for sewer service from commodity charges by customer class for the reporting period.
- 3) Report rate structure by customer class for sewer service.

E. Criteria to Determine BMP Implementation Status

Agency rate design for sewer service shall be consistent with definition of conservation pricing for sewer service in Section A.

F. Water Savings Assumptions

Not quantified.

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2. EDUCATION PROGRAMS

California water agencies have played a major role in stressing the need for their customers to conserve water through both public information and school education programs. The specifics of how these programs are to be implemented are detailed below.

2.1 PUBLIC INFORMATION PROGRAMS (formerly BMP 7)

This section addresses opportunities to use public information programs as an effective tool to inform customers about the need for water conservation and ways they can conserve, and to influence customer behavior to conserve.

A. Implementation

Implement a public information program to promote water conservation and water conservation-related benefits. Implementation shall consist of at least the following actions:

- 1) The program should include, when possible, but is not limited to, providing speakers to employees, community groups and the media; using paid and public service advertising; using bill inserts; providing information on customers' bills showing use for the last billing period compared to the same period the year before; providing public information to promote water conservation measures; and coordinating with other government agencies, industry groups, public interest groups, and the media.
- 2) The program should include, when possible, social marketing elements which are designed to change attitudes to influence behavior. This includes seeking input from the public to shape the water conservation message; training stakeholders outside the utility staff in water conservation priorities and techniques; and developing partnerships with stakeholders who carry the conservation message to their target markets.
- 3) When mutually agreeable and beneficial, the wholesale agency or another lead regional agency may operate all or part of the public information program. If the wholesale agency operates the entire program, then it may, by mutual consent with the retail agency, assume responsibility for CUWCC reporting for this BMP. Under this arrangement, a wholesale agency may aggregate all or portions of the reporting and coverage requirements of the retail agencies joining into the mutual consent.

B. Implementation Schedule

Implementation shall commence no later than July 1 of the first year following the latter of either: 1) the year the agency signed or became subject to the MOU, or 2) the year this Exhibit is amended.

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C. Coverage Requirements

Agencies shall maintain an active public information program to promote and educate customers about water conservation.

At minimum a public information program shall consist of the following components:

- 1) Contacts with the public (minimum = 4 times per year, i.e., at least quarterly).
- 2) Water supplier contacts with media (minimum = 4 times per year, i.e., at least quarterly).
- 3) An actively maintained website that is updated regularly (minimum = 4 times per year, i.e., at least quarterly).
- 4) Description of materials used to meet minimum requirement.
- 5) Annual budget for public outreach program.
- 6) Description of all other outreach programs (List follows in Section D).

D. Requirements for Documenting BMP Implementation

Agencies may report on all of the following activities, although agencies are only expected to meet the minimum requirements in section C. Coverage Requirements.

Public Information Programs List

- 1) Newsletter articles on conservation
- 2) Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets
- 3) Landscape water conservation media campaigns
- 4) General water conservation information
- 5) Website
- 6) Email messages
- 7) Website - provide link to or list of qualified landscape professionals (WaterSense, California Landscape Contractors Association, Irrigation Association, etc.) and other helpful sites
- 8) Direct mail - seasonal postcards noting irrigation requirement changes
- 9) Direct mail or other notification to customer if water use is significantly higher than neighbors with similarly-sized lots
- 10) Customer notification when neighbor reports runoff or runoff is noticed by employees or meter reads show rise in use of 20% or more from same time previous year
- 11) Dedicated phone line or "on hold" messages with recorded conservation information
- 12) Booths at local fairs/events
- 13) Monthly water use reports provided with comparison of water use to water budget
- 14) Presentations
- 15) Point of purchase pieces, including internet point of purchase by type: high efficiency clothes washers, weather based irrigation controller, high

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- efficiency toilets, plant palette information, other.
- 16) Media outreach: news releases, editorial board visits, written editorials, newspaper contacts, television contacts, radio contacts, articles or stories resulting from outreach. Provide names of local media markets: newspaper, TV stations, radio stations reached via media outreach program during the reporting period
 - 17) Adult Education/Training Programs: Topic(s) _____: number of presentations, number of attendees
 - 18) Water Conservation Gardens: involvement in a garden that promotes and educates the public about water-efficient landscaping and conservation techniques. May include "Corporate" or "business" sponsorship or membership.
 - 19) Sponsor or co-sponsor landscape workshops/training for homeowners and/or homeowners associations: number of presentations; number in attendance
 - 20) Landscape watering calculator and watering index to assist with weekly irrigation scheduling
 - 21) Additional program(s) supported by agency but not mentioned above
 - 22) Total reporting period budget expenditure for public outreach/training/adult education programs (include all agency costs)

Social Marketing Programs List

Developing the Conservation Message:

- 1) Does your agency have a water conservation "brand," "theme" or mascot: If so briefly describe: _____
- 2) Have you sponsored or participated in market research to refine your message? If so topic: _____ Message of above brand? Mission Statement?
- 3) Do you have a community conservation committee?
If yes, its focus is on:
 - a. Conservation in general;
 - b. Landscape;
 - c. Education;
 - d. Commercial/industrial/institutional;
 - e. Other: _____
- 4) Training for stakeholders who help support programs or educate others about conservation:
 - a. Professional landscapers: number of sessions/classes; number of attendees: on irrigation equipment; other
 - b. Plumbers: number of sessions/classes; number of attendees
 - c. Homeowners: number of sessions/classes; number of attendees: on irrigation equipment; other
- 5) Additional program(s) supported by agency but not mentioned above.
- 6) Total reporting period budget expenditure for social marketing programs (include all agency costs)

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Partnering programs:

- 1) Master Gardeners; Type of program: _____
- 2) CLCA; Type of program: _____
- 3) Cooperative Extension; Type of program: _____
- 4) Retail and wholesale outlets
Name(s): _____
Type of program: _____
- 5) Local Colleges; Type of program: _____
- 6) Green Building Programs; Type of program: _____
- 7) Other _____
- 8) Newsletter articles published in other entities' newsletters:
 - a. HOAs: number per year to number of customers
 - b. City materials: number per year to number of customers
 - c. Non-profits: number per year to number of customers
 - d. Other: number per year to number of customers
- 9) Other utilities, including electric utilities
- 10) Water conservation gardens at utility or other high traffic areas or new homes
- 11) Water wise landscape contest or awards program

E. Water Savings Assumptions

Not quantified.

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2.2 SCHOOL EDUCATION PROGRAMS (formerly BMP 8)

School education programs have been implemented to reach the youngest water users at an early age and enforce the need to engage in water conservation as a life-long behavior. This section provides specifics on how school education programs are to be implemented.

A. Implementation

Implementation shall consist of at least the following actions:

- 1) Implement a school education program to promote water conservation and water conservation-related benefits.
- 2) Programs shall include working with school districts and private schools in the water suppliers' service area to provide instructional assistance, educational materials, and classroom presentations that identify urban, agricultural, and environmental issues and conditions in the local watershed. Educational materials shall meet the state education framework requirements and grade-appropriate materials shall be distributed.
- 3) When mutually agreeable and beneficial, the wholesale agency or another lead regional agency will operate all or part of the education program; if the wholesale agency operates all or part of the retail agency's school education program, then it may, by mutual consent with the retail agency, assume responsibility for CUWCC reporting of this BMP; under this arrangement, a wholesale agency may aggregate all or portions of the reporting and coverage requirements of the retail agencies joining into the mutual consent

B. Implementation Schedule

Implementation shall commence no later than July 1 of the first year following the latter of either: 1) the year the agency signed or became subject to the MOU, or 2) the year this Exhibit is amended.

C. Coverage Requirements

Agencies shall maintain an active school education program to educate students in the agency's service area about water conservation and efficient water use. An agency may participate in a mutual arrangement as described in Section A.

At minimum a school information program shall consist of the following:

- 1) Curriculum materials developed and/or provided by agency (including confirmation that materials meet state education framework requirements and are grade-level appropriate).
- 2) Materials distributed to K-6 students. When possible, school education programs will reach grades 7-12 as well.

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- 3) Description of materials used to meet minimum requirement.
- 4) Annual budget for school education program.
- 5) Description of all other water supplier education programs (Lists follow in Section D).

D. Requirements for Documenting BMP Implementation

Agencies may report on all of the following activities, although they are only expected to meet the minimum requirements in section C. Coverage Requirements.

School Education Programs List

- 1) Classroom presentations: number of presentations, number of attendees, topics covered: conservation, recycled water, water sources, pollution prevention, etc.
- 2) Large group assemblies: number of presentations, number of attendees
- 3) Children's water festivals or other events: number of presentations, number of attendees
- 4) Cooperative efforts with existing science/water education programs (various workshops, science fair awards or judging) and follow-up: number of presentations, number of attendees.
- 5) Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits) Description _____; number distributed
- 6) Staffing children's booths at events & festivals: number of booths, number of attendees
- 7) Water conservation contests such as poster and photo Description _____; number of participants.
- 8) Offer monetary awards/funding or scholarships to students: number offered; total funding
- 9) Teacher training workshops: number of presentations, number of attendees
- 10) Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.: number of tours or field trips, number of participants.
- 11) College internships in water conservation offered: number of internships; total funding
- 12) Career fairs/workshops: number of presentations, number of attendees
- 13) Additional program(s) supported by agency but not mentioned above. Description: _____; number of events (if applicable); number of participants.
- 14) Total reporting period budget expenditures for school education programs (include all agency costs)

E. Water Savings Assumptions

Not quantified.

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PROGRAMMATIC BMPs

Signatories have the option of implementing each BMP as described below, or implementing measures identified in the Flex Track Menu alternative included in each Programmatic BMP.

3. RESIDENTIAL

Residential water users throughout California depend on a reliable and safe supply of water for their homes. This BMP will define the best and most proven water conservation methods and measures those residents, working in conjunction with water agencies, can implement. By implementing these methods and measures homeowners, multi-family property owners, and tenants will increase water use efficiency and reliability. Credit for prior activities, as reported through the BMP database, will be given for documented water savings achieved through 2008.

A. Implementation

Retail water agencies shall implement a water use efficiency program that consists of either the coverage goals listed below or achieving the water savings goals by implementing measures on the Flex Track Menu in Section F below.

1) Residential assistance program (*formerly BMPs 1 & 2*)

Provide site-specific leak detection assistance that may include, but is not limited to, the following: a water conservation survey, water efficiency suggestions, and/or inspection. Provide showerheads and faucet-aerators that meet the current water efficiency standard as stipulated in the WaterSense Specifications (WSS) as needed.

2) Landscape water survey (*formerly BMP 1*)

Perform site-specific landscape water surveys that shall include, but are not limited to, the following: check irrigation system and timers for maintenance and repairs needed; estimate or measure landscaped area; develop customer irrigation schedule based on precipitation rate, local climate, irrigation system performance, and landscape conditions; review the scheduling with customer; provide information packet to customer; and provide customer with evaluation results and water savings recommendations.

3) High-efficiency clothes washers (HECWs) (*formerly BMP 6*)

Provide incentives or institute ordinances requiring the purchase of high-efficiency clothes washing machines (HECWs) that meet an average water factor value of 5.0. If the WaterSense Specification is less than 5.0, then the average water factor value will decrease to that amount.

4) WaterSense Specification (WSS) toilets (*formerly BMP 14*)

Provide incentives or ordinances requiring the replacement of existing toilets using 3.5 or more gpf (gallons per flush) with a toilet meeting WSS.

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5) WaterSense Specifications for residential development

Provide incentives such as, but not limited to, rebates, recognition programs, or reduced connection fees, or ordinances requiring residential construction meeting WSS for single-family and multi-family housing until a local, state or federal regulation is passed requiring water efficient fixtures.

B. Implementation Schedule

Implementation shall commence no later than July 1 of the first year following the latter of either: 1) the year the agency signed or became subject to the MOU, or 2) the year this exhibit is amended.

C. Coverage Requirements

Coverage shall consist of:

1) Residential Assistance

Provide leak detection assistance to an average of 1.5 percent per year of current single-family accounts and 1.5 percent per year of current multi-family units during the first ten years after signing the MOU. After completing the ten-year 15 percent target, agencies will maintain a program at the level of high-bill complaints or not less than 0.75 percent per year of current single-family accounts and 0.75 percent per year of current multi-family units. Showerhead distribution will be considered complete when 75 percent market saturation is achieved.

2) Landscape water survey

Provide landscape water surveys to an average of 1.5 percent per year of current single-family accounts during the first ten years after signing the MOU. After completing the ten-year 15 percent target, agencies will maintain a program at the level of high-bill complaints or no less than 0.75 percent per year of current single-family accounts.

3) High efficiency clothes washers

Provide financial incentives for the purchase of HECWs that meet an average water factor value of 5.0. If the WaterSense Specification is less than 5.0, then the water factor value will decrease to that amount. Incentives shall be provided to 0.9 percent of current single-family accounts during the first reporting period following BMP implementation, rising to 1.0 percent per year of current single-family accounts for the remainder of ten year period following signing of the MOU. An alternative method is to demonstrate 1.4 percent per year of the market penetration during the first ten years after signing the MOU.

4) WaterSense Specification (WSS) toilets

A financial incentive shall continue to be offered for toilets meeting the current WSS and updated standard whenever a more efficient toilet is identified by WSS. Compliance will entail demonstrating a number of toilet replacements of 3.5 gpf or greater toilets at or above the level achieved through a retrofit on resale

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ordinance until 2014, or a market saturation of 75% is demonstrated, whichever is sooner.

5) WSS for new residential development

An incentive shall continue to be offered until a water agency, or local, state or federal regulation is in effect meeting at a minimum, WSS for water efficient single-family homes. Multi-family housing shall also meet the WSS in all applicable criteria regardless of the total number of stories in the building.

D. Requirements for Documenting BMP Implementation

1) Residential assistance

Provide reports, disaggregated by single-family and multi-family units, identifying: the number of residential assistance/leak detection survey visits completed; number of WSS showerheads distributed; and number of WSS faucet aerators distributed during the reporting period.

2) Landscape water survey

Provide the number of single-family and multi-family account landscape water surveys completed during the reporting period.

3) High efficiency clothes washers

The number of installations credited to the agency's replacement program for HECWs with an average water factor value of 5.0. If the WaterSense Specification is less than 5.0, then the water factor value will decrease to that amount.

4) WaterSense Specification (WSS) toilets

A description of the program along with the number of WSS toilet installations credited to the agency's replacement program disaggregated by single-family or multi-family units.

5) WSS for new residential development

Provide a copy of the new development ordinance currently adopted by the reporting unit or provide the following incentive program details: number of new single-family and multi-family units built in service area during the reporting period; description of incentives offered; list of incentive amounts; number of WSS fixtures installed; and number of participating single-family home and multi-family units.

E. Water Savings Assumptions

Water savings assumptions will be based on the type and number of actions implemented.

F. Flex Track Menu

In addition to the measures above, the Flex Track Menu may be implemented in part or any combination to meet the savings goal for this BMP. Agencies

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choosing the Flex Track Menu are responsible for achieving water savings greater than or equal to that which they would have achieved using only the BMP list items. Water savings estimates for the Flex Track Menu will be maintained and regularly updated in the MOU Compliance Policies and BMP Guidebook.

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4. COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL (formerly BMP 9)

Commercial, industrial, and institutional (CII) water demands make up a large percentage of total demand for California. CII water use varies dramatically between business sectors as well as within a given water agency's territory. The goal of this BMP is to implement comprehensive yet flexible best management practices, allowing each water agency to tailor the implementation of each practice to fit local needs and opportunities. The end result is a practice that is successful and will produce the greatest amount of cost-effective water savings.

A. Implementation

Implement measures to achieve the water savings goal for CII accounts of 10% of the baseline water use over a 10-year period. Baseline water use is defined as the water consumed by CII accounts in the agency's service area in 2008. Credit for prior activities, as reported through the BMP database, will be given for up to 50% of the goal; in this case, coverage will consist of reducing annual water use by CII accounts by an amount equal to the adjusted percentage goal within 10 years. Implementation shall consist of item 1) or 2) or both in order to reach the agency's water savings goals.

1) Implement measures on the CII list with well-documented savings that have been demonstrated for the purpose of documentation and reporting. The full list and their associated savings are included in the "Demonstrated Savings Measure List" in Section E below.

2) Implement unique conservation measures to achieve the agency's water savings goals. Sample measures include, but are not limited to: industrial process water use reduction, industrial laundry retrofits, car wash recycling systems, water-efficient commercial dishwashers, and wet cleaning. Water use reduction shall be calculated on a case-by-case basis. Agencies will be required to document how savings were realized and the method and calculations for estimating savings. See the CII Flex Track Menu list in the attachment to Exhibit 1, as updated in the MOU Compliance Policy and BMP Guidebook.

B. Implementation Schedule

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Implementation shall commence not later than July 1 of the first year following the latter of either: 1) the year the agency signed or became subject to the MOU, or 2) the year this Exhibit is amended.

C. Coverage Requirements

Coverage shall consist of meeting the annual water savings goal in Section A. Although it is not one of the criteria in meeting implementation, agencies will be considered on track if estimated savings as a percent of baseline water use equals or exceeds the following:

0.5% by the end of first reporting period (year two), 2.4% by the end of year four, 4.3% by the end of year six, 6.4% by the end of year eight, and 9% by the end of year ten. Percentages will be adjusted proportionally for up to 50% past credit referred to in the Implementation section.

D. Requirements for Documenting BMP Implementation

Each reporting period agencies are required to report the estimated reduction in annual water use for all CII accounts.

1) CII List

For measures on the CII list with demonstrated savings, agencies shall report the measure type and quantity installed, as well as savings attributed to water shortage measures, intervention and actions.

2) Flex Track Menu

For measures on the Flex Track Menu, agencies shall use one of three methods of measurement listed below to track savings. Agencies shall report the type of measure implemented, the industry in which the measure was implemented, and estimated savings as well as the measure life. Agencies shall keep detailed usage data on file and report the annual and lifetime savings.

a) Point of Retrofit Metering

Usage data collected from meters installed at the point of retrofit.

b) Customer Bill Analysis

Pre- and post-program usage from utility bills from the appropriate meters related to the measures implemented. For mixed-use meters, a minimum of 12 months pre-retrofit and 12 months post-retrofit usage data shall be used to calculate savings. The data shall be normalized for weather. For dedicated meters, a minimum of 6 months pre-retrofit and 6 months post-retrofit data shall be used to calculate savings.

c) Agency-Provided Calculation

If an agency is unable to provide point of retrofit metering or customer bill analysis, the agency must document how savings were realized and the method and calculations for estimated savings. The calculation and assumptions are subject to approval by the Council on a case-by-case basis.

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E. Water Savings Assumptions

The Demonstrated Savings Measure List is found below. For assistance in calculating savings from unique measures used in the Flex Track Menu approach, see the BMP Guidebook.

Measure	Annual Savings (acre-feet)	Measure Life (years)
1. Hi-Efficiency Toilets	.041748	25
2. Hi-Efficiency Urinals	.069086	25
3. Ultra Low Volume Urinals	.080603	25
4. Zero Consumption Urinals	.0921146	25
5. Commercial High-Efficiency Single Load Clothes Washers	0.116618	10
6. Cooling Tower Conductivity Controllers	1.032250	5
7. Cooling Tower ph Controllers	3.981543	5
8. Connectionless Food Steamers	Per Steamer Compartment .25	10
9. Medical Equipment Steam Sterilizers	1.538	20
10. Water-Efficient Ice Machines	0.834507	10
11. Pressurized Water Brooms	0.1534	5
12. Dry Vacuum Pumps	0.64	7

F. Flex Track Menu

In addition to the measures above, the Flex Track Menu options may be implemented in part or any combination for CII customers to meet the water savings goal of this BMP. Agencies may choose to implement any alternative with measurable water savings. Agencies choosing the Flex Track Menu option

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are responsible for achieving water savings greater than or equal to that which they would have achieved using only the BMP list items. Water savings estimates for the Flex Track Menu items will be maintained and regularly updated in the MOU Compliance Policies and BMP Guidebook.

Custom measures shall be calculated on a case-by-case basis. Agencies will be required to provide documentation on how savings were realized and the method and calculations for estimating savings.

EXHIBIT 1

As Amended on December 10, 2008

5. LANDSCAPE (formerly BMP 5)

Irrigation accounts for a large portion of urban water use in California. Irrigation water use varies dramatically depending on water pricing and availability, plant choice, geographic locations, seasonal conditions, and the level of commitment to sound water efficiency practices. The goal of this BMP is that irrigators, with assistance from signatories, will achieve a higher level of water use efficiency consistent with the actual irrigation needs of the plant materials. Reaching this goal would reduce overall demands for water, reduce demands during the peak summer months, and still result in a healthy and vibrant landscape for California.

A. Implementation

Agencies shall provide non-residential customers with support and incentives to improve their landscape water use efficiency. Credit for prior activities, as reported through the BMP database, will be given for documented water savings achieved through 2008. This support shall include, but not be limited to, the following:

1) Accounts with Dedicated Irrigation Meters

- a) Identify accounts with dedicated irrigation meters and assign ETo-based water use budgets equal to no more than an average of 70% of ETo (reference evapotranspiration) of annual average local ETo per square foot of landscape area in accordance with the schedule below.

Recreational areas (portions of parks, playgrounds, sports fields, golf courses, or school yards in public and private projects where turf provides a playing surface or serves other high-use recreational purposes) and areas permanently and solely dedicated to edible plants, such as orchards and vegetable gardens, may require water in addition to the water use budget. (These areas will be referred to as "recreational" below.) The water agency must provide a statement designating those portions of the landscape to be used for such purposes and specifying any additional water needed above the water use budget, which may not exceed 100% of ETo on an annual basis.

If the California Model Water Efficient Landscape Ordinance is revised to reduce the water allowance, this BMP will be revised automatically to reflect that change.

- b) Provide notices each billing cycle to accounts with water use budgets showing the relationship between the budget and actual consumption.
 - c) Offer site-specific technical assistance to reduce water use to those accounts that are 20% over budget in accordance with the schedule given in Section B; agencies may choose not to notify customers whose use is less than their water use budget.
- #### 2) Commercial/Industrial/Institutional (CII) Accounts without Meters or with Mixed-Use Meters
- a) Develop and implement a strategy targeting and marketing large landscape water use surveys to commercial/industrial/institutional (CII) accounts with mixed-use meters.

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As Amended on December 10, 2008

b) In un-metered service areas, actively market landscape surveys to existing accounts with large landscapes, or accounts with landscapes which have been determined by the purveyor not to be water efficient.

3) Offer financial incentives to support 1) and 2) above.

B. Implementation Schedule

1) Implementation shall commence not later than July 1 of the first year following the latter of either: 1) the year the agency signed or became subject to the MOU, or 2) the year this Exhibit is amended.

2) Per year at least 9% of accounts with dedicated meters and 1.5% of all mixed-use or non-metered accounts will receive the assistance detailed in Section A. 1) and 2) above. At least 90% of all dedicated meters and 15% of all mixed-use and non-metered accounts will receive the assistance over a ten year period.

C. Coverage Requirements

Coverage shall consist of:

1) ETo-based water use budgets developed for 90% of CII accounts with dedicated irrigation meters at an average rate of 9% per year over 10 years.

2) Offer site-specific technical assistance annually to all accounts that are 20% over budget within six years of the date implementation was to commence.

3) Complete irrigation water use surveys for not less than 15% of CII accounts with mixed-use meters and un-metered accounts within 10 years of the date implementation is to commence. (Note: CII surveys that include both indoor and outdoor components can be credited against coverage requirements for both the Landscape and CII BMPs.)

An agency will be considered on track if the percent of CII accounts with mixed-use meters receiving a landscape water use survey equals or exceeds the following: 1.5% by the end of the first reporting period (year two) following the date implementation is to commence; 3.6% by the end of year four; 6.3% by the end of year six; 9.6% by the end of year eight; and 13.5% by the end of year ten.

Agency may credit 100% of the number of landscape water use surveys for CII accounts with mixed-use meters completed prior to July 1, 2007 that have received a follow-up inspection against the coverage requirement; agency may credit 50% of surveys that have not received follow-up inspections. Agency may credit 100% of the number of landscape water use surveys completed for CII accounts with mixed-use meters after July 1, 2007 against the coverage requirement.

4) Agency will implement and maintain a customer incentive program(s) for irrigation equipment retrofits.

EXHIBIT 1

As Amended on December 10, 2008

D. Requirements for Documenting BMP Implementation

1) Dedicated Landscape Irrigation Accounts

Agencies shall preserve water use records and budgets for customers with dedicated landscape irrigation accounts for at least four years. This information may be used by the Council to verify the agency's reporting on this BMP.

- a) Number of dedicated irrigation meter accounts.
- b) Number of dedicated irrigation meter accounts with water budgets.
- c) Aggregate water use for dedicated non-recreational landscape accounts with budgets.
- d) Aggregate acreage assigned water budgets and average ET for dedicated non-recreational landscape accounts with budgets.
- e) Number of Accounts 20% over-budget.
- f) Number of accounts 20% over-budget offered technical assistance.
- g) Number of accounts 20% over-budget accepting technical assistance
- h) Aggregate acreage of recreational areas assigned water budgets and average ET for dedicated recreational landscape accounts with budgets.

2) CII Accounts without Meters or with Mixed-Use Meters

- a) Number of mixed use and un-metered accounts.
- b) Number, type, and dollar value of incentives, rebates, and no- or low-interest loans offered to, and received by, customers.
- c) Number of surveys offered.
- d) Number of surveys accepted.
- e) Estimated annual water savings by customers receiving surveys and implementing recommendations.

E. Water Savings Assumptions

Assume landscape BMP will result in a 15%-20% reduction in demand for landscape irrigation by affected accounts, as defined in Section C: Coverage Requirements.

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As Amended on December 10, 2008

F. **Flex Track Menu**

In addition to the measures above, the Flex Track Menu options may be implemented in part or any combination to meet the savings goal for this BMP. Agencies choosing the Flex Track Menu option are responsible for achieving water savings greater than or equal to that which they would have achieved using only the BMP list items. Water savings estimates for the Flex Track Menu items will be maintained and regularly updated in the MOU Compliance Policies and BMP Guidebook.

GPCD Compliance Option

Gallons per capita daily (GPCD) is the third compliance approach for the MOU. The combined water savings from implementation of the Foundational and Programmatic BMPs should produce greater water savings than the Programmatic BMPs themselves. Since most Foundational BMPs are not quantified, the GPCD approach evaluates compliance by evaluating the overall reduction in per capita water demand over time. One measure of efficiency, GPCD, indicates the increase in efficiency in water demand over time, by dividing demand by population, which gives average water consumption value per person served. The GPCD Approach includes the following sections: Potable Water GPCD Equation; Baseline GPCD; GPCD Target; Biennial GPCD Targets; Compliance; Appeals and GPCD Calculation Refinement.

Potable Water GPCD Equation

Potable Water GPCD = $(PWI - PWS) / Pop / 365$; where

1. PWI = Potable Water Into the retail water agency's service area distribution system.
2. PWS = Potable Water taken out of the retail water agency's service area distribution system and:
 - placed into storage and/or
 - delivered to an agricultural customer through a dedicated agricultural meter, at discretion of the retail water agency.
3. Pop = residential population of the retail water agency's service area.

Baseline GPCD

The Baseline GPCD shall equal the average annual Potable Water GPCD for the years 1997 through 2006. Signatory Water Suppliers who signed the MOU prior to 1997 and can demonstrate significant investment in water conservation may propose a different Baseline period as outlined in the MOU Compliance Policy.

GPCD Target

For purposes of compliance, the 2018 GPCD Target for all signatories as of July 1, 2009 shall equal Baseline GPCD multiplied by 0.82 (an 18% reduction).

Biennial GPCD Targets

Using the Compliance Table below, for each "Year" in the table, a retail water agency's Biennial GPCD Target shall equal its Baseline GPCD multiplied by that year's Target (% Baseline). A retail water agency may choose a starting point as either its Baseline GPCD or its 2006 Potable Water GPCD.

EXHIBIT 1

As Amended on December 10, 2008

Compliance

For retail water agencies choosing the GPCD Option for compliance with the Programmatic BMPs, the retail water agency shall submit the following calculations along with supporting data as part of their first normal biennial report for that period:

- (1) Potable Water GPCD for each year in the baseline period;
- (2) 2018 GPCD Target and five Biennial GPCD Targets; and

A retail water agency shall be considered to be in compliance with the BMPs in any reporting period when it submits the following:

- (1) Complete "Water Supply & Reuse" and "Accounts & Water Use"
- (2) Supporting data necessary to calculate that reporting period's Potable Water GPCD; and
- (3) Calculations showing the reporting period's Potable Water GPCD is less than or equal to that period's Biennial GPCD Target, or Highest Acceptable Bound when the period's Potable Water GPCD has been weather-adjusted.

Compliance will be evaluated in relation to the Compliance Table below and relative progress toward the goal will be acknowledged in Council Compliance Reports. For signatory agencies signing the MOU after July 1, 2009, the compliance table will be read as five increments with reporting goals relative to their 1st through 5th Compliance reports.

Compliance Table

Year	Compliance Report	Target (% Baseline)	Highest Acceptable Bound (%Baseline)
2010	1	96.4	100
2012	2	92.8	96.4
2014	3	89.2	92.8
2016	4	85.6	89.2
2018	5	82	82

EXHIBIT 1

As Amended on December 10, 2008

Appeals

An appeals/ adjustment process will be available, as outlined in the MOU Compliance Policy, for substantiated exceptional impacts to GPCD such as exceptional use of potable water for wildfire suppression and significant changes to a signatory's economic or customer demographics.

Signatories that signed the MOU prior to 1997 (the beginning of the Baseline Period), and that can substantiate significant investments in conservation leading to declines in water consumption as measured by GPCD, may file an appeal to adjust the baseline period to reflect per capita water demands in the period prior to their signing the MOU.

GPCD Calculation Refinement

CUWCC GPCD subcommittee shall provide, no later than December 31, 2009, acceptable methods retail water agencies may use when weather-normalizing data for compliance with this BMP. Additional methods or revisions to these methods may be approved by the Steering Committee from time-to-time.

EXHIBIT 2. CALIFORNIA URBAN WATER CONSERVATION COUNCIL

As Amended on December 10, 2008

1. The California Urban Water Conservation Council (the "Council") will be comprised of a representative of each of the signatories to the MOU.
2. The Council's responsibilities and authorities include:
 - a. Recommending study methodologies for Best Management Practices ("BMPs"), including procedures for assessing the effectiveness and reliability of urban water conservation measures.
 - b. Developing guidelines including discount rate to be used by all signatories in computing BMP benefits and costs pursuant to Exhibit 3.
 - c. Reviewing and modifying the economic principles set forth in Exhibit 3.
 - d. Collecting and summarizing information on implementation of BMPs and Potential Best Management Practices ("PBMPs").
 - e. Adopting or modifying BMPs and PBMPs lists.
 - f. Adopting or modifying reliable water conservation savings data for BMPs.
 - g. Adopting or modifying the schedules of implementation for existing and new BMPs.
 - h. Adopting or modifying the schedules for research and demonstration projects for BMPs and PBMPs.
 - i. Coordinating and/or making recommendations regarding BMPs study and demonstration projects.
 - j. Accepting or denying requests for additional parties to join the MOU and assigning additional parties to one of the three signatory groups as described in Section 1.3 of the MOU.
 - k. Reviewing and modifying report formats.
 - l. Making annual reports to the State Water Resources Control Board and the Council Members on the above items based on the format described in Exhibit 5.
 - m. Within two years of the initial signing of this MOU, developing and implementing procedures and a funding mechanism for independent evaluation of the MOU process at the Council and signatory levels.
 - n. Undertaking such additional responsibilities as the Members may agree upon.

TO: COMMITTEE MEMBERS

FROM: DON SPAGNOLO
GENERAL MANAGER



DATE: 11/3/2010

AGENDA ITEM

4

NOV 8, 2010

NCSD WATER PRODUCTION v. CONSUMPTION, 2005 – 2009.

ITEM

NCSD water production v. Consumption, 2005 – 2009 [RECEIVE INFORMATION]

BACKGROUND

NCSD reports water production and consumption to the California State Department of Water Resources on an annual basis.

NCSD Production and Consumption, 2005 - 2009								
Year	Production	CONSUMPTION - URBAN		CONSUMPTION - AG		Cons.Total (AcreFt)	Difference (Prod-Cons)	%Loss
		Total Urban (AcreFt)	% Urban of TotalCons.	Total Ag (AcreFt)	% Ag of Total Cons.			
2005	2794.04	2624.98	99.49%	13.53	0.51%	2638.51	155.53	5.57%
2006	2726.77	2591.56	99.37%	16.44	0.63%	2608.00	118.77	4.36%
2007	2856.15	2833.59	99.45%	15.81	0.55%	2849.40	6.75	0.24%
2008	2755.24	2716.65	99.43%	15.57	0.57%	2732.22	23.02	0.84%
2009	2698.18	2481.90	99.41%	14.71	0.59%	2496.61	201.57	7.47%

Consumption is broken down into two major categories: urban water and agricultural water. Urban water is broken down into five categories: single-family residential, multifamily residential, commercial/institutional, industrial, landscape irrigation, and other.

There is a wide difference between the numbers of customer accounts for the two major categories. For instance, in 2008, there were 4090 accounts for urban water customers, and 2 accounts for agricultural water customers.

There is also a large difference between the numbers of accounts in the subcategories of urban water consumption. In 2009, there were 3520 single-family residential accounts, 427 multifamily residential accounts, 98 commercial/institutional accounts, 0 industrial accounts, 91 landscape irrigation accounts and 0 other accounts.

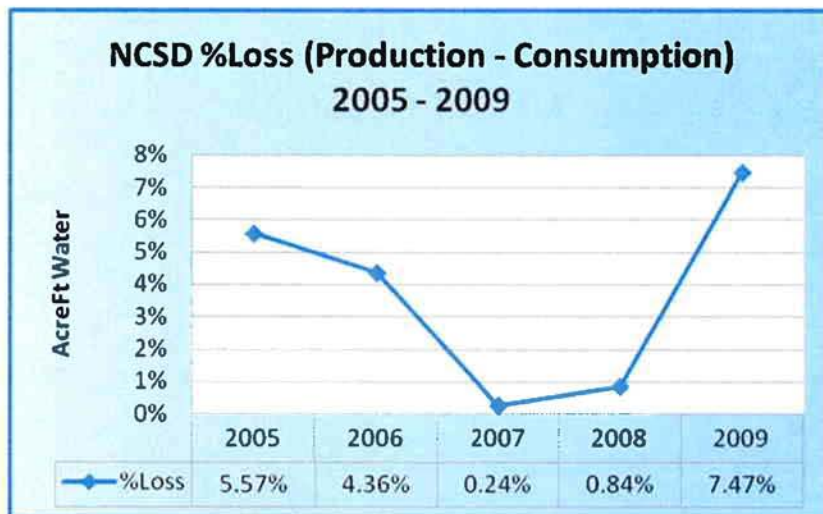
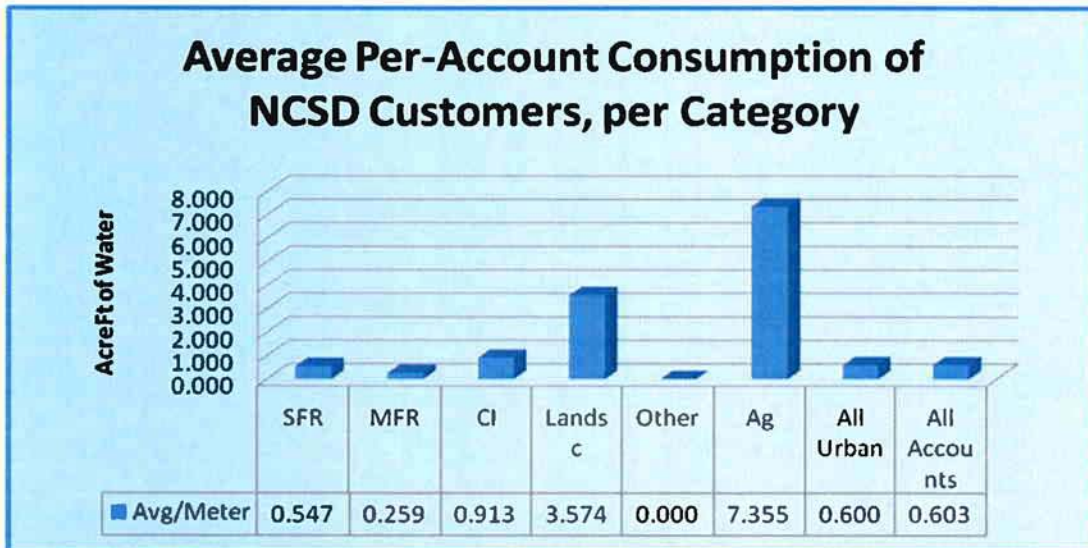
Finally, there is a large difference between the average water use per account for each category. As an example, chart titled *Average Per-Account Consumption by NCSD Customers, by Category*, demonstrates the average water consumption for each of the 2 Ag accounts is 7.355 AcFt/yr. The average water account for each of the 4090 single-family residences (SFR) is 0.547 AcFt/yr. While, on average, each SFR account uses much less water per year than does each Ag account. However, there are a great many more SFR accounts than there are Ag accounts.

FISCAL IMPACT

None.

ATTACHMENT

None.



3TO: COMMITTEE MEMBERS

FROM: DON SPAGNOLO
GENERAL MANAGER



DATE: 11/8/2010

AGENDA ITEM 5

NOV 8, 2010

SET SUBSEQUENT MEETING

ITEM

Set next committee meeting [SET DATE/TIME].

BACKGROUND

The Committee usually meets on the Monday preceding the second Board meeting of the month, as necessary.

RECOMMENDATION

Staff recommends the Committee tentatively set a meeting at 12/13/2010.

If staff does not have policy issues to bring to the committee at that time, the meeting can be deferred to the following month with the Committee member concurrence.

ATTACHMENT

None.