

# Mammoth Community Water District



## Annual Water Conservation Program Report September 2016

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## **1.0 INTRODUCTION**

The purpose of this Annual Water Conservation Program Report is to fulfill the requirements of a Settlement Agreement, dated July 15, 2013, between the Mammoth Community Water District (MCWD), California Trout, and California Department of Fish and Wildlife. In 2014, MCWD completed a Conservation Plan pursuant to the Agreement. An annual report on the status of the Water Conservation Plan is required for 10 consecutive years following the publication of the Conservation Program Plan. This report is the second annual report in the 10-year series. As provided in the Agreement, the annual report will:

1. Describe the implementation of the MCWD Water Conservation Program and to the extent applicable and feasible,
2. Apply the California Urban Water Conservation Council's (CUWCC) standards and metrics for measuring implementation and explains variances, and
3. Assess the need for future revisions to the conservation program.

The report is organized to include the implementation and documentation requirements from the CUWCC MOU, Exhibit 1, BMP Definitions, Schedules and Requirements. Text from the CUWCC MOU is shown as gray italic text with responses from MCWD in black non-italicized text. Conservation activities described in this report occurred during fiscal year 2016 (April 1, 2015 to March 31, 2016).

## **2.0 FY 2016 MCWD CONSERVATION ACTIVITIES AND HIGHLIGHTS**

The MCWD is committed to reducing water demand on an ongoing basis by keeping infrastructure losses low, implementing new technologies that improve water efficiencies, and working with customers to incentivize implementation of water conservation practices.

In FY 2016, water demand was less than the same period in 2013 by over 214 million gallons, 656 acre-feet. These savings represent a cooperative relationship between MCWD and its customers under severe drought conditions. In April 2015, the Mammoth Pass snowpack water content was measured as 2% of normal. These measurements led the Board to implement Level 3 Water Shortage Restrictions and to update the water regulations. Water Code regulations changes to reduce Maximum Applied Water Allowances by specific percentages based on the Level of Water Shortage Restriction in effect.

The low water content of the snowpack resulted in MCWD relying almost entirely on groundwater because surface water supplies were unavailable. The heavy pumping caused several pumps to require mechanical repairs and rehabilitation during the period of highest demand driven by irrigation. As a result, in September 2015, the MCWD Board reduced the allowable irrigation hours to three hours per day, reduce allowable irrigation days from three to two and reduced allowable amounts for irrigation only accounts.

MCWD staff have been pleased with the ability to access hourly customer data to reduce water lost to leaks, enforce water regulations and reduce the number of estimated meter readings. Details regarding these improvements are included in the section detailing MCWD's status in regards to CUWCC standards in the next section.

Water conservation priorities for 2016 recommended in last year's Annual Water Conservation Report that are not included in CUWCC BMPs that are described in the next section were:

1. Development of a customer interface to accesses water usage data.

Status: MCWD Conservation staff solicited and interviewed several companies that provide customer interface programs. MCWD contracted with a company in August 2015 and worked diligently with the company to complete the interface product. Unfortunately, the company was unable to fulfill their contract obligations and MCWD entered into a contract with another company in May 2016. It is anticipated a customer portal to view water consumption will be available in early FY 2017.

2. Installation of a Crop Information Management System (CIMIS) station.

The CA Department of Water Resources (DWR) has stepped in to help coordinate siting a CIMIS station in Mammoth Lakes. MCWD staff were unable to find a landowner willing to site a station on their property in location that would meet the weather station criteria of DWR. DWR staff report positive progress but there has been no progress on completing a landowner approval agreement.

### **3.0 UTILITY OPERATIONS PROGRAMS**

The following water conservation program elements are arranged according to the CUWCC Best Management Practices contained in Exhibit 1 of the MOU between CUWCC and their signatories as updated January 2016.

#### **3.1 Conservation Coordinator**

##### CUWCC Implementation

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

##### CUWCC Coverage Requirements

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

##### CUWCC Documentation Requirement:

*Provide the contact information for the conservation coordinator, or consultant assigned, and verification that the position is responsible for implementing the tasks.*

The District has continued to maintain a staff position to promote and implement water conservation programs for at least 15 years. MCWD combines the duties of the position with other environmental and regulatory tasks due to the relatively small size of the customer base. In 2013, the District developed and filled a permanent position to provide part-time, year-round assistance to the water conservation program. The Water Conservation Program receives an annual budget of approximately \$100K, excluding personnel costs, to oversee a wide-range of activities as described in this plan. The majority of these funds support the water-efficient fixture rebate program. An additional \$24,000 from

the general fund is budgeted annually for advertising, community outreach and printing of conservation messages.

Contact information for the Water Conservation Program Coordinator:

Irene Yamashita  
(760) 934-2596 ext. 314  
P.O. Box 597  
Mammoth Lakes, CA 93546  
iyamashita@mcwd.dst.ca.us

A job description for this position is available from the Human Resources Department upon request.

### CUWCC Water Savings Assumptions

CUWCC does not require quantification of water savings for this BMP.

## **3.2 Water Waste Prevention**

### CUWCC Implementation

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.*

### CUWCC Documentation Requirement:

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.*

In April 2015, the District updated the section of the Code Book related to water waste prohibitions, water shortage restrictions and enforcement of the regulations. The update strengthen the water conservation and water shortage regulations and provide clear time and penalty based steps for enforcing those regulations. The update made water usage reductions mandatory by specified amounts depending on the Level of Water Shortage Condition; allowed the Board to determine additional necessary measures to achieve necessary reductions; reduced the allowable irrigation hours; reduced the Maximum Allowance Water Allowance to 80% under Level 3 Water Shortage Conditions; and limited

vehicle washing to only occur at commercial facilities during Level 3 Water Shortage Conditions.

The water conservation portion of the Code Book was revised again in September 2015 in response to the lack of surface water from MCWD's supply for the year. The revision only allowed three hours of irrigation from 11 hours; allowed for additional irrigation days and hours for hand-watering to save perennial plants during the severe reductions of hours; and repealed the restrictions on vehicle washing. The reductions in irrigation hours were adopted in lieu of implementing Level 4 Water Shortage Conditions that would have eliminated all outdoor irrigation.

In 2015, 135 first violation, 41 second violation, 12 third violation, and 1 fourth violation letters were served to customers. Only one customer paid a \$50 a day fine for a short period until the problem was resolved.

The water regulation and enforcement portion of the Code Book may be accessed at <http://www.mcwd.dst.ca.us/assets/ch12water.pdf>. Exemptions from the regulations are identified in the District's Code Book.

*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.*

MCWD checks for water efficient fixtures when inspecting new construction projects for water connection permits in accordance with the California Plumbing Code (CPC). The CPC does not apply to remodel projects, so MCWD offers incentives for remodel projects to install water efficient fixtures throughout the building. A project may change all the showerheads and toilets in the building to CPC standards to reduce the fixture count to a number that eliminates the need to install a larger and more costly water meter and the replacements may be eligible for MCWD water efficiency rebates. (The fixture count is based on the amount of water a fixture uses.) The construction community and homeowners have appreciated this consideration to provide an avenue to potentially avoid the cost of a new meter. In addition to MCWD permit inspections, the Town of Mammoth Lakes is responsible for enforcing the provision of the CPC through their building permit process.

MCWD staff worked with the Town of Mammoth to review the first application received under the recently revised Town Water Efficient Landscape Ordinance (WELO) because the Town's planner was unfamiliar with the requirements and processes described in the ordinance. The Town of Mammoth Lakes' building codes and WELO can be accessed at [https://www.municode.com/library/ca/mammoth\\_lakes\\_/codes/code\\_of\\_ordinances](https://www.municode.com/library/ca/mammoth_lakes_/codes/code_of_ordinances)

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

MCWD has only worked with the Town of Mammoth Lakes on implementing local measures to improve water efficiency as described above.

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

MCWD did not support legislation or regulations pertaining to this BMP.

### CUWCC Water Savings Assumptions

CUWCC does not require quantification of water savings.

### 3.3 Water Loss Control

The AWWA Water Loss software program was used in 2015, as required by CUWCC's BMP and the California Water Code, to track non-revenue water. Previously, MCWD used a simplified version of the AWWA Water Loss program that tracked non-revenue authorized uses, e.g. fire hydrant flushing, water-treatment process water, potable water leaving the treatment plants, and metered water delivered to customers. This monthly auditing system was appropriate for the size of the MCWD distribution system and has been an effective mechanism for quickly addressing high or unexpected water losses. MCWD's investments in infrastructure improvements have resulted in loss rates below CUWCC's 10 percent benchmark for non-revenue water.

#### CUWCC 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 3<sup>rd</sup> 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*

#### CUWCC Documentation Requirement:

The AWWA Standard Water Audit and Water Balance worksheet is available upon request. The documentation requested below is available from MCWD's Operations Department for review.

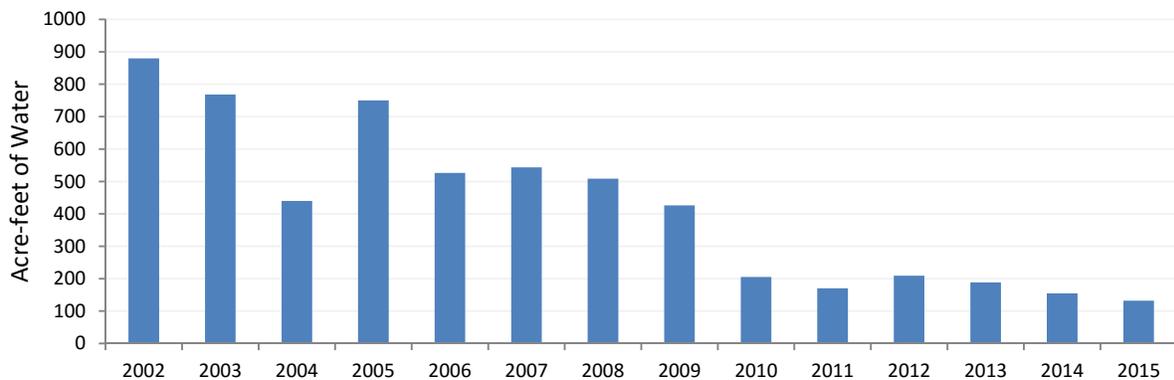
- 1) Agency shall submit the completed AWWA Standard Water Audit and Water Balance worksheets in the BMP 1.2 report form every reporting period.*
- 2) For each reporting period, agency shall keep and make available validation for any data reported.*
- 3) Agency shall maintain in-house records of audit 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

CUWCC Water Savings Assumptions

CUWCC does not have a water savings assumption for this BMP. However, since 2002, MCWD water losses have dropped from about 22 million gallons a month during the winter and 36 million gallons during the summer to 3.5 million during winter and 5 million during the summer. The replacement of water mains and laterals has been significant factor in reducing losses. In addition, the accuracy of water meter readings have improved as a result of the 2015 meter replacement project. MCWD’s success in reducing non-revenue water is evident in the graph below.

**Figure 1 Annual Non-revenue Water**



**3.4 Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections**

CUWCC 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.

**CUWCC Documentation Requirement:**

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

There are approximately 3,510-metered accounts.

- b. Number of metered accounts read;

Since March 2015, meter reads occur hourly and the data is transmitted to MCWD every 24 hours.

- c. Number of metered accounts billed by volume of use;

All accounts are billed by volume of use.

- 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

All metered accounts are billed monthly except for 14 seasonal cabins that are billed once a year.

- 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.

Monthly estimated reads in fiscal years shown below are not separated into customer classes.

# estimated reads	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
2014 – 2015	810	26	28	54	96	591	430	328	52	3	5	5
2015 – 2016	9	24	6	3	4	5	2	6	5	3	4	14

The improvement in obtaining actual meter readings following the meter replacement project is evident in the table above. The meter replacement was completed in spring of 2015.

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.

All accounts are metered for usage.

3. *Number of unmetered service connections retrofitted during the reporting period.*

All accounts are metered for usage.

4. *Estimated number of CII (commercial/industrial/institutional) accounts with mixed-use meters.*

The MCWD has 169 Commercial accounts, 19 of these accounts have irrigation meters and the remaining 150 accounts have mixed-use meters. A mixed-use meter may record consumption from a retail business, a restaurant, an apartment, and irrigation. Of the 31 Institutional accounts, 6 have irrigation meters and the remaining 25 accounts are mixed meters. These account totals vary from last year's report. Conservation staff reviewed account information and reclassified numerous accounts to better reflect water consumption by customer classes. MCWD does not have any Industrial accounts.

5. *Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period*

None.

#### CUWCC Water Savings Assumptions

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

No new retrofits occurred during the reporting period.

### **3.5 Retail Conservation Pricing**

#### CUWCC Implementation and Coverage

The intention of this CUWCC BMP is to promote conservation through increasing volumetric water rate structures. The CUWCC's goal for water agencies is to maximize volumetric water sales revenue to encourage conservation. The BMP calculation used to determine adequacy of the rate structure aims for a result of greater than or equal to 70 percent of water sale revenue from volumetric sales.

MCWD's percentage of volumetric revenue is 47 percent, based on CUWCC's calculations. MCWD believes the CUWCC's standard of 70 percent or greater results in an unsustainable revenue stream that cannot support the delivery of water because operations are largely based on fixed costs. A rate structure meeting CUWCC's standard would result in significant financial instability during periods of high water conservation.

Water agencies in California suffered financial shortfalls resulting from State mandated conservation in 2015 because sales revenue generated by volumetric sales were sharply reduced. The significant revenue loss resulted in easing conservation standards in 2016. The State Water Resources Control Board estimated water sale revenue losses at \$673 million if mandatory conservation were in effect in 2016.

MCWD depends on customer awareness, water conservation regulations, incentive and education programs and enforcement of conservation regulations to achieve conservation goals.

CUWCC Documentation Requirement:

*1. Report the rate structure in effect for each customer class for the reporting period.*

Tiered rates in FY 2016 for single family homes were \$1.49 per 1,000 gallons for the first 8,000 gallons of water used to \$2.48 for the next 1,000 gallons up to 4,000 gallons, after two additional tiers, the highest tier, usage over 20,000 gallons, is charged \$8.13 per 1,000 gallons. Commercial users are not charged on an increasing block rate. Instead, they are charged a flat rate for each 1,000 gallons used, multiplied by the rate factor of \$3.01 per 1,000 gallons of metered use. The monthly base water service is based on the size of the meter. Meter size depends on the number of water fixtures in a building. Monthly base charges vary from \$14.01 for a 5/8 – 3/4-inch meter to \$471.48 for a 6-inch meter for single-family homes.

The District has also implemented tiered pricing for irrigation accounts based on monthly Maximum Applied Water Allowances (MAWA) for each account. MAWA is based on estimates of local monthly evapotranspiration and landscape area, and is unique to each irrigation account. Rates are \$3.43 per 1,000 gallons for usage within the MAWA amount, \$4.38 per 1,000 gallons for usage 101% to 200% above MAWA and \$8.13 per 1,000 gallons for over 200% of MAWA. Implementation of irrigation tiered pricing has been an effective tool to reduce excessive irrigation practices. The District is evaluating whether monthly water demand from mixed-use meter accounts can be parsed into domestic and irrigation usage and billed accordingly. The ability to separate domestic and irrigation use would incentivize mixed-use meter customers to reduce irrigation demand to meet MAWA. Significant financial barriers exist to retrofit separate irrigation meters for existing accounts.

A complete description of MCWD rates for all customer classes is available at <http://www.mcwd.dst.ca.us/assets/mcwd-rate-schedule.pdf>.

*2. Report the annual revenue derived from volume charges for each retail customer class.*

The total revenue from volume sales for fiscal year 2016 was \$1,419,973. The data is not separated by customer class.

*3. Report the annual revenue derived from monthly meter/service charges for each retail customer class.*

The total base meter service charge revenue for fiscal year 2016 was \$1,263,956. The data is not separated by customer class.

CUWCC Water Savings Assumptions

CUWCC does not have a quantified water savings assumption.

### **3.6 Retail Wastewater Rates**

This BMP is designed to create incentives to reduce sewer flows through a conservation pricing structure based on metered water use. MCWD has not implemented a volume based wastewater charge. Fees are based on customer classes. Commercial account charges are based on estimates of

wastewater contributions or the type of wastewater produced. No water saving assumptions are provided by CUWCC for this BMP.

## **4.0 EDUCATION PROGRAMS**

### **4.1 Public Information Programs**

#### CUWCC 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.*

#### CUWCC Documentation Requirement:

*Report on minimum requirements below and other activities contained in CUWCC Program List.*

- 1. Contacts with the public (minimum = 4 times per year, i.e., at least quarterly).*

MCWD provides public speakers when requested and meets the four times a year requirement. Presentations are regularly provided to local service organizations and government agencies. In addition to presentations at local organizations, MCWD participated in an annual Mammoth Middle School sixth-grade tour of MCWD water facilities in the Lakes Basin and wastewater treatment plant, a special presentation was given to the sixth-grade class on the drought and water conservation, and two water-efficiency landscape classes were hosted by MCWD.

- 2. Water supplier contacts with media (minimum = 4 times per year, i.e., at least quarterly).*

MCWD has an ongoing program for news releases and weekly advertisements during the summer months when water demand is highest. The frequency of news releases meets the four times a year requirement. During the non-irrigation season, news releases focus on MCWD's fats, oil and grease

program and the water efficient fixture replacement rebate program. Advertisements and news releases are published in the Mammoth Lakes and Bishop newspapers and radio stations. Ongoing concerns about potential impacts to groundwater supplies from a geothermal expansion project was regularly featured in 2015/2016.

3. *An actively maintained website that is updated regularly (minimum = 4 times per year, i.e., at least quarterly).*

MCWD's website is updated regularly. All news releases are posted and front page information is changed regularly to keep current with the most relevant topics for MCWD's customers.

4. *Description of materials used to meet minimum requirement.*

To reach the public with water conservation messages, the MCWD staff provides public presentations; publishes paid advertising in the local media; send out news releases on all MCWD related issues; posts on social media; provides free water-efficiency items for customers; runs a water-efficiency rebate program; hosts classes on water efficiency topics; and provides landscape water reports to property managers and homeowner associations.

5. *Annual budget for public outreach program.*

The budget for fiscal year 2016 was \$183,100, excluding staff time.

6. *Description of all other outreach programs (Program List contained in CUWCC Exhibit 1, 2.1.,D.).*

Other outreach programs, not included in #4 above, are:

- Increased enforcement of water conservation regulations;
- Implemented a leak detection program utilizing hourly read data from new meter reading equipment;
- Provided assistance to the California Native Plant Society with propagation and plant sales;
- Reviewed and commented on Town zoning and development projects that potentially affect water supply;
- Included customers conservation messages on monthly water bills;
- Printed and distributed magnets with irrigation schedules and general conservation messages;
- Worked one-on-one with irrigation customers with high consumption; and
- Continued maintenance on low-water use demonstration landscape at entrance to Mammoth Lakes.

#### CUWCC Water Savings Assumptions

CUWCC does not have a quantified water savings assumption.

## **4.2 School Education Programs**

MCWD supports and participates in a classroom education program to reach our local youth. This program engages students by teaching them the importance of water and energy conservation and provides tools to achieve results through provision of an energy and water conservation resource kit. This early introduction to conservation should result in life-long lifestyle changes.

### CUWCC 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.

### CUWCC Documentation Requirement:

1. Curriculum materials developed and/or provided by agency (including confirmation that materials meet state education framework requirements and are grade-level appropriate).

The MCWD helps sponsor and participates in providing the LivingWise program to the sixth grade class at Mammoth Middle School. The program is a grade appropriate water and energy conservation curriculum that meets state learning standards. Information on the LivingWise program can be found at <http://www.resourceaction.com/programs/k-12-education/livingwise/>.

2. Materials distributed to K-6 students. When possible, school education programs will reach grades 7-12 as well

The MCWD does not provide education programs to grade levels other than the sixth grade. Mammoth Lakes is a relatively small community and the increased need for staff time and cost of expanding the school education program has not been deemed necessary.

3. Description of materials used to meet minimum requirement.

Students in the LivingWise Program conduct home water and energy audits before and after installing water and energy efficiency items. This process helps the students realize that they can affect the local, regional, and global demand for water and energy. Each student received a high efficiency showerhead, a bag to test flow rates, toilet leak tablets, a compact florescent lamp, digital thermometer, FilterTone alarm, Limelite night lite, and a tape measure. The class also develops a unique program each year to apply their new knowledge. Last year the students created animated videos on water conservation that were posted to YouTube. Each year, MCWD staff takes the students on a tour of MCWD's water facilities in the Lakes Basin, wastewater treatment plant and solar array.

4. Annual budget for school education program.

The MCWD provides a partial sponsorship of \$4,000 for the program and provides staff time for classroom talks and to tour MCWD facilities over two days.

5. Description of all other water supplier education programs

MCWD staff gave a presentation about the current drought and water conservation to the 6th grade class at the Mammoth Middle School.

### CUWCC Water Savings Assumptions

CUWCC does not have a quantified water savings assumption.

## **5.0 RESIDENTIAL**

### **5.1 Residential Assistance Program**

*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.*

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.*

### CUWCC Documentation Requirement:

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.*

MCWD has a new program to assist customers in detecting potential leaks on their property. MCWD reviews hourly usage data from the new metering system and contacts customers when constant flow is detected. This leak detection program started in January 2015. For fiscal year 2016, calls were made to 290 customers to notify them of leaks in their homes. As a result, 72 million gallons of water will be saved annually from fixing these leaks. MCWD does not disaggregate types of dwelling units in the leak detection program.

MCWD also provides free dye tablets for customers and property managers to detect leaking toilets. Over 800 dye tablets were handed out to customers and property managers last year. The leak detection program has created a high demand for these tablets.

In fiscal year 2016, customers picked up 135 free water-efficient showerheads and an additional 138 were installed through the MCWD indoor rebate program. The showerhead rebate is limited to \$50 per showerhead, an amount typically adequate to cover the total cost of the fixture. Other items that were provided free of charge include faucet aerators, shut-off hose nozzles, dish squeegees, shower timers, and magnets with the irrigation schedule. The MCWD also provided rebates for 6 pressure reducing valves for irrigation systems. Irrigation systems in Mammoth Lakes typically run at higher pressure than sprinkler heads are designed to receive resulting in misting and inefficient application of water.

## *2. Landscape Water Surveys*

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

MCWD does not provide landscape water surveys. Instead, MCWD focuses on ensuring irrigation customers are aware of their monthly Maximum Applied Water Allowances and stay within those allowances. As a result, of implementing MAWAs and enforcing compliance with the allocations, implementing Level 3 Water Shortage Restrictions, and initiating personal contact with irrigation customers, the change in water demand from our irrigation only accounts was 43 percent less in 2015 compared to 2013. The comparison between 2015 and 2014 is 29 percent lower, partially to demand reduction in 2014. The demand reduction between 2013 and 2015 saved 79.2 million gallons or 243 acre-feet of water.

## *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.*

The MCWD indoor rebate program requires clothes washers have a water factor of 4.5 or lower to be eligible for a rebate. This water factor is below the current WaterSense Standard of 5.0. In fiscal year 2015, 15 washers were installed through this program. The clothes washer rebate is \$300 or \$400 for a common area machine.

## *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.*

The MCWD indoor rebate program only provides rebates for replacement toilets using 1.28 gpf or less, the same as the WSS. In fiscal year 2015, 430 toilets were installed through this program. This number includes single-family homes, multi-family buildings and commercial establishments. Toilet rebates are \$200 for the first two toilets in a dwelling and \$100 for each additional toilet being replaced. New toilets from new construction, including newly constructed bathrooms from remodeling, are not eligible

#### *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.*

The California Green Building Code addresses the elements of this measure. The Green Building Code requires new developments to install water efficient fixtures that meet WSS. MCWD allows project applicants to reduce fixture counts by changing all building fixtures to WSS because the Green Building Code does not require remodel projects to meet water conservation standards. Reducing fixture counts can allow a project to retain their current meter instead of upgrading to a larger meter at a significant cost to the customer. MCWD does not have Town building data, i.e. number of new dwelling units, requested by this measure.

#### *CUWCC Water Savings Assumptions*

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

MCWD does not have the ability to completely separate water savings achieved from landscape irrigation programs and other MCWD conservation programs although change in water demand from our irrigation only accounts was 43 percent less in 2015 compared to 2013 as described earlier. The leak detection program and rebates reduce indoor and outdoor water demand. The indoor rebate program saves about 2.3 million gallons annually. The leak control program, not disaggregated into customer classes, saved approximately 22 million gallons annually. The school water and energy program, LivingWise, reported a residential water savings of 221,840 gallons through the installation of water efficiency aerators and showerheads.

## **6.0 COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL (CII)**

#### *CUWCC 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.*

#### *CUWCC Documentation Requirement:*

MCWD has evaluated the most likely areas in our customer base to reduce inefficient water usage. Since 2012, MCWD has focused staff time on inefficient irrigation usage. Any Commercial, Institutional and Industrial customer with an irrigation meter has been required to reduce irrigation usage to a set

allowance based on landscape size. In addition, CII customers take advantage of the water conservation rebates and receive calls if leaks are suspected on their property. The CII customer category consists of a large mix of business types and institutional/public customers. As a result, there is no single water conservation measure that specifically targets CII customers. MCWD will be reviewing this class for potential targeted programs to reduce demand.

### CUWCC Water Savings Assumptions

This BMP is not currently implemented by the MCWD.

## **7.0 LANDSCAPE**

### CUWCC 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.*
- 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.*

CUWCC Documentation Requirement:

1. *Dedicated Landscape Irrigation Accounts*

a. *Number of dedicated irrigation meter accounts.*

MCWD has 84 irrigation accounts.

b. *Number of dedicated irrigation meter accounts with water budgets.*

All irrigation accounts identified above have water budgets.

c. *Aggregate water use for dedicated non-recreational landscape accounts with budgets.*

In 2014, total non-recreation irrigation consumption was 258 million gallons. For comparison, in 2015, under Level 3 Water Shortage Restriction, total non-recreation irrigation consumption was 221 million gallons.

d. *Aggregate acreage assigned water budgets and average ET for dedicated non-recreational landscape accounts with budgets.*

There are 91.4 acres in the MCWD service area that have irrigation budgets (MAWAs) and are not recreational landscapes. The request for documenting average ET is not clear; however, usage at 100 percent of MAWA for these accounts would total 80,735,380 gallons. Under Level 3 Water Shortage Restrictions in 2015, irrigation accounts that exceeded 80% of their MAWA were subject to receiving violation notices and penalties.

e. *Number of Accounts 20% over-budget.*

The MCWD conservation staff track percent over MAWA monthly. Only one account was 20% over budget in 2015. Seven accounts were greater than 80% of MAWA.

f. *Number of accounts 20% over-budget offered technical assistance.*

Conservation staff does not have the capacity to provide technical assistance with irrigation account holders. Staff will provide monthly consumption numbers to help customers stay within their irrigation budgets and enforce compliance. Customers are requested to seek assistance from landscape professionals to correct landscape irrigation problems or to redesign landscapes.

g. *Number of accounts 20% over-budget accepting technical assistance*

See response above.

h. *Aggregate acreage of recreational areas assigned water budgets and average ET for dedicated recreational landscape accounts with budgets.*

Six recreational irrigation accounts encompass 139.1 acres. This includes an 18-hole golf course (Sierra Star), a 9-hole golf course (Snowcreek), several town parks and school playing fields. The total MAWA gallons for these accounts is 117,833,898 gallons. Total usage in 2015 was 67,095,450 gallons. Sierra Star utilizes recycled water for irrigation when available.

2. *CII Accounts without Meters or with Mixed-Use Meters*

a. *Number of mixed use and un-metered accounts.*

MCWD does not have any unmetered accounts. There are 141 Commercial accounts and 29 Institutional accounts. CUWCC does not define Mixed-Use Meters. A commercial customer account may service a restaurant, several apartments and a landscaped area. MCWD does not have easily searchable records to tie the existence of landscape to an account. However, MCWD can report that 26 the

Commercial and Institutional accounts also have an irrigation meter. MCWD does not have any Industrial accounts.

*b. Number, type, and dollar value of incentives, rebates, and no- or low-interest loans offered to, and received by, customers.*

This response is for landscape irrigation and commercial rebates. MCWD offers rebates for landscape efficiency projects regardless of their customer class. Five rebates for new pressure-reducing valves on irrigation systems were given in 2015. For larger sprinkler/irrigation system improvement rebates, MCWD requires site layout plans to demonstrate changes to be implemented. In addition, rebates are not paid until water savings are demonstrated the following year. These requirements appear to be a disincentive for requesting irrigation rebates. However, these requirements were developed by MCWD after working with several projects that were not implemented as presented to MCWD or did not result in meaningful demand reductions or a combination of both.

Three businesses received rebates or free water conservation fixtures from MCWD. Of note, many condominium projects are run as businesses and are not represented in this description.

*c. Number of surveys offered.*

MCWD does not have a specific CII survey program. The focus for conservation efforts is based on top users. If a CII customer is a top user and the use is deemed excessive, MCWD will contact the customer to reduce irrigation demand.

*d. Number of surveys accepted.*

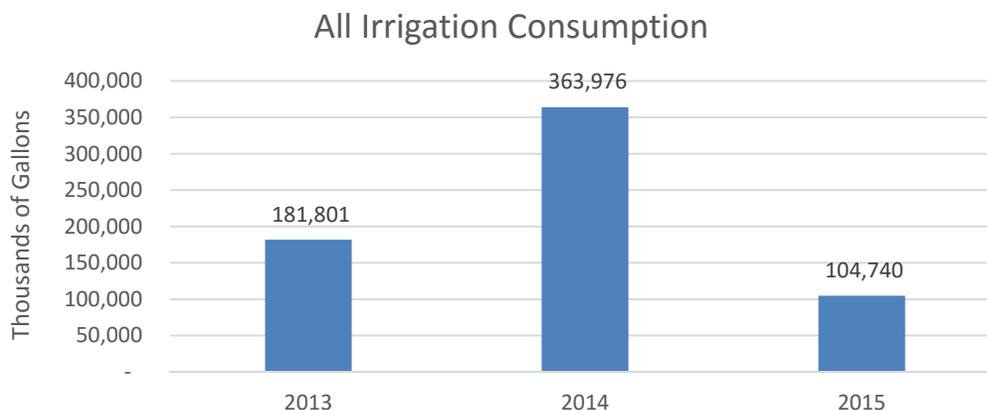
See response above.

*e. Estimated annual water savings by customers receiving surveys and implementing recommendations.*

MCWD did not conduct surveys.

### CUWCC 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*



The graph above displays the significant savings between 2014 and 2015. Meters that were originally been installed as mixed meters but were only serving irrigation systems were moved in the irrigation

class in 2014, which resulted in a significant rise in irrigation demand. The 2015 usage included a new account, the elementary school. The meters at the school were changed to separate out irrigation usage.

## **8.0 RECOMMENDATIONS FOR FY 2017**

Completion of the customer portal project is a high priority project. The project will allow customers to access their daily, weekly, monthly and annual water usage data and allow property managers to receive high usage/leak alerts and track MAWA usage without MCWD assistance. The customer portal will also allow the MCWD to contact customers with notices about conservation programs, violations of regulations and other miscellaneous information. Improvements in usage data reporting will result in user-friendly reports that can be used to prioritize leaks and violations.

The MCWD conservation staff will continue to work with DWR to facilitate construction of a Crop Information Management System (CIMIS) weather station to record daily, local evapotranspiration (ET) values. Once the station is transmitting daily ET data, the data will be used to adjust MAWA for weather extremes and provide data to irrigation controllers designed to collect local ET data. The MCWD has been working with landowners to site a station in Mammoth Lakes but has not been successful. The Department of Water Resources is contacting local landowners to discuss placing a CIMIS station on their property.

The CII customer class will be evaluated for potential programs to reduce indoor water use. The opportunity to continue reducing irrigation demand may be limited following Level 3 Water Shortage Restrictions so staff will review potential indoor conservation programs for CII customers. In addition, the EPA is developing a method to compare multi-family residential developments for water efficiency. The method will consider landscape area and unit densities, bedroom counts, and floor areas. This information will be useful for targeting inefficient developments for conservation improvements.