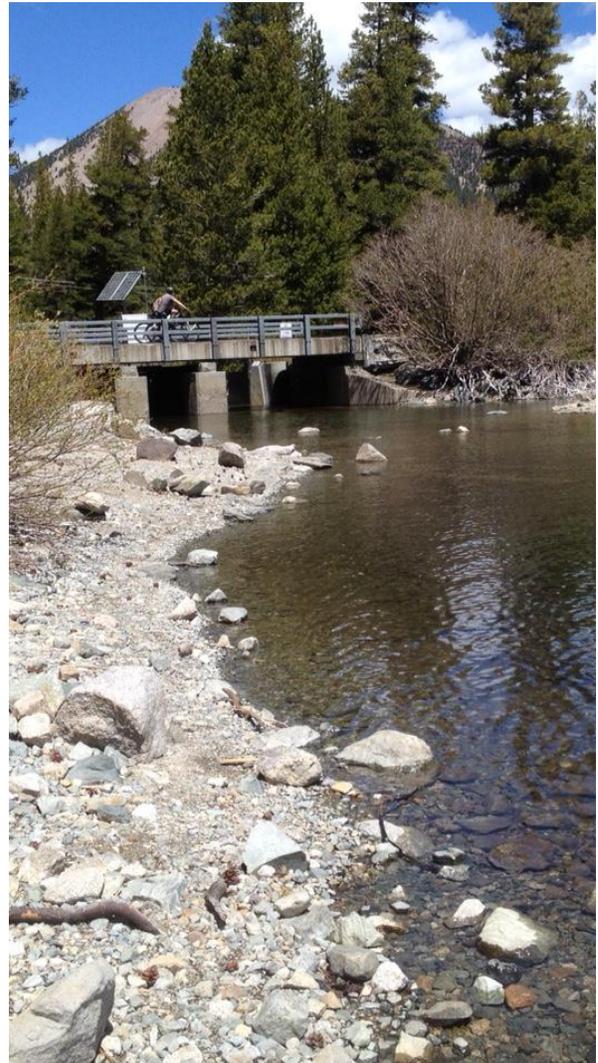


Mammoth Community Water District
Annual Water Conservation Program
Report
July 2015



Mammoth Community Water District
Irene Yamashita
August 12, 2015

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INTRODUCTION

The purpose of this Annual Water Conservation Program Report is to fulfill the requirements of a Settlement Agreement between the Mammoth Community Water District (MCWD), California Trout, and California Department of Fish and Wildlife. The Agreement requires publication of an annual report for 10 consecutive years that:

1. Describes the implementation of the MCWD Water Conservation Program and to the extent applicable and feasible,
2. Applies the California Urban Water Conservation Council's (CUWCC) standards and metrics for measuring implementation and explains variances, and
3. Assesses 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 2015 (April 1, 2014 to March 31, 2015).

2014 MCWD CONSERVATION ACTIVITIES AND EVALUATION

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.

Water conservation priorities for 2014 presented in the Water Conservation Program, in order of priority were:

1. Complete deployment of meter replacements (Meter Replacement Project).
2. Achieve the 10% demand reduction Level 1 target. Reductions based on usage in 2013.
3. Continue outreach to top 100 water users to reduce water demand.
4. Site a California Irrigation Management Information System weather station in the Mammoth Lakes area.

All but the last conservation measure was implemented in 2014. The implementation and evaluation of these measures along with the CUWCC's conservation BMPs are described in the following section.

WATER CONSERVATION PROGRAM

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.

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
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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.

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 2014, the District updated the section of the Code Book related to water waste prohibitions, water shortage restrictions and enforcement of the regulations. The intention of the revision was to strengthen the water conservation and water shortage regulations and provide clear time and penalty based steps for enforcing those regulations. The update reduced the number of days that irrigation is allowed and added other prohibitions to further reduce water waste. In addition to reducing the number of watering days, irrigation account customers will be in violation if irrigation usage exceeds 150% of a Maximum Applied Water Allowance (MAWA). MAWA allocations are based on landscape area size, plant water needs and the allocation varies by month of the year. The Code Book update also created targets for reducing water demand during forecasted shortages conditions. Level 1 -3 restrictions are intended to reduce normal water demand by 10% for each level increase, e.g. Level 1 restrictions reduce demand by 10%, Level 2 restrictions reduce demand by 20% and so forth. Level 4 is intended to reduce customer demand by 50%.

To incentivize adherence to the code provisions for reducing water waste, the Code Book update also revised enforcement provisions. Multiple violations can result in financial penalties for failing to correct violations within a set number of days, and can ultimately result in water flow restriction or shut-off. In addition, a new phone line was made available in 2014 to accept anonymous calls reporting irrigation violations (760-924-4511).

In 2014, 100 first violation, 20 second violation and 3 third 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 entire 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.*

In accordance with the California Plumbing Code (CPC), MCWD checks for water efficient fixtures when inspecting new construction projects for water connection permits. The Green Code does not apply to remodel projects. However, the MCWD provides an incentive 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. (The fixture count is based on the amount of water a fixture uses.)

If necessary, the project may also replace sink fixtures to further reduce the building's total fixture count. 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 since 2008 to revise their Water Efficient Landscape Ordinance (WELO) to meet state regulation standards. This effort included numerous meetings and document reviews. MCWD also hosted a meeting in 2014 to explain the revisions to local landscapers and property managers. 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

- 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.*

No other efforts beyond working to update the Town's WELO.

- 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.

Water Loss Control

The MCWD does not implement the AWWA Water Loss software program as required by CUWCC's BMP standards. MCWD uses a simplified version of the AWWA Water Loss program that consists of tracking 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 is appropriate for the size of the MCWD distribution system and has been an effective mechanism for quickly addressing unexpected water losses. In addition to replacing water main lines and laterals, MCWD replaced all water meters smaller than 3 inches. This project will reduce meter-reading inaccuracies that may be contributing to non-revenue water losses. MCWD's infrastructure improvement investments have resulted in loss rates below 6%. This rate is 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 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*

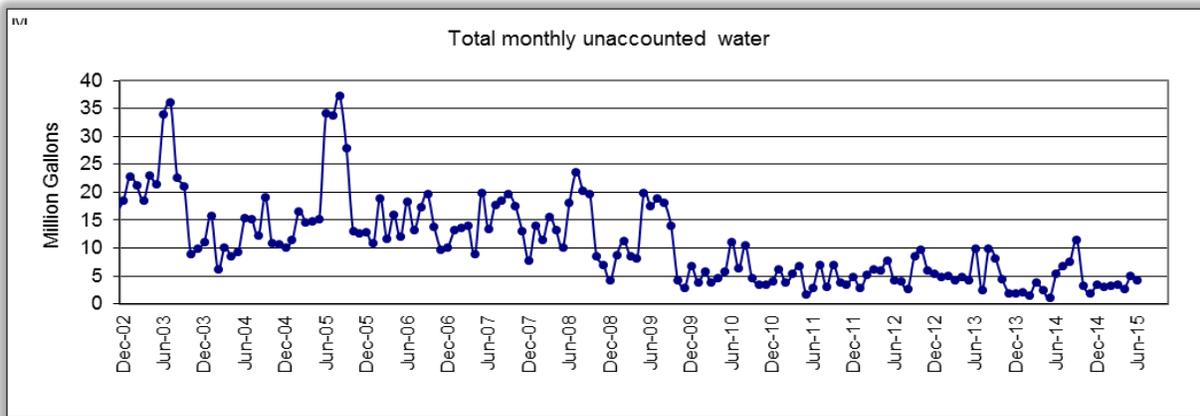
CUWCC Documentation Requirement:

See introductory paragraph for MCWD's alternative to CUWCC's Implementation requirements and graph below showing reductions in non-revenue water.

- 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. A significant factor in reducing losses has been the replacement of water mains and laterals. The reduction of non-revenue water is evident in the graph below.



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 3,469-metered accounts.

b. Number of metered accounts read;

All of the 3,469-metered accounts are read monthly. However, 14 seasonal cabins that are read monthly are only billed once a year in October. 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 read and billed monthly except for 14 seasonal cabins that are only read and 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 year 2015 not separated into customer classes.

2014 - 15	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
# estimated reads	810	26	28	54	96	591	430	328	52	3	5	5

High estimates in April were due to problems with the meter reading equipment and high estimates in the autumn were caused by the installation of the new metering equipment. The new meter equipment is expected to consistently reduce the number of estimated reads. The number of meter readings that have been estimated for three months or more has been zero since January 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.

There are no unmetered accounts in our service area.

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

There are no unmetered accounts in our service area.

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

See response below, #5.

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

The MCWD has 95 Commercial accounts, 13 of these accounts have irrigation meters and the remaining 82 accounts have mixed-use meters. Of the 25 Institutional accounts, 9 have irrigation meters and the remaining 26 accounts are mixed use meters. MCWD does not have any Industrial accounts.

CUWCC Water Savings Assumptions

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

All District customers are already metered per District ordinance and a tiered rate structure has been in effect for at least 5 years.

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 water sales revenue from volumetric rates while maintaining financial stability, revenue sufficiency and customer equity. The BMP calculation used to determine adequacy of the rate structure aims for a result of greater than or equal to 70 percent.

Using CUWCC's calculation on MCWD water revenues results in 54 percent. The MCWD believes CUWCC's standard does not accommodate the largely fixed cost of providing water. Developing a rate structure with built-in high variability does not provide adequate financial stability. The MCWD conducted a rate study in 2010 to determine and justify water and wastewater rates for our customers.

MCWD customers are billed monthly for a base water service charge and a volumetric (commodity) charge based on the amount of water used. To encourage conservation the volumetric rates are tiered so that increased usage results in higher rates per volume of water. This measure uses price signals to encourage conservation.

CUWCC Documentation Requirement:

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

The volumetric tiered rate structure for all customer classes is available at <http://www.mcwd.dst.ca.us/assets/mcwd-rate-schedule.pdf>. An example of the tiered rate follows: for single family homes, the volumetric cost for water increases from \$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 as residential customers are. 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 ½ – ¾-inch meter to \$471.48 for a 6-inch meter for single-family homes. The charges described above represent fiscal year 2016 rates.

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.

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

The total revenue from volume sales for fiscal year 2015 was \$1,619,372.

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

The total meter service charge revenue for fiscal year 2015 was \$1,393,772.

CUWCC Water Savings Assumptions

CUWCC does not have a quantified water savings assumption.

Retail Wastewater Rates

This BMP is designed to create incentives to reduce sewer flows through a conservation pricing structure based on metered water use. The MCWD has not implemented a volume base wastewater charge. Fees are based on customer classes. Commercial account charges are based on estimates of the amount of wastewater contributions or the type of wastewater produced. No water saving assumptions are provided by CUWCC for this BMP.

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).*

The 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, MCWD conducts an annual public tour of the wastewater treatment plant and an annual Mammoth Middle School sixth-grade tour of MCWD water facilities in the Lakes Basin.

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

The 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, public contact continues with a focus on MCWD's fats, oil and grease program and the water efficient fixture replacement rebate program. The advertisements and news releases are published in the Mammoth Lakes and Bishop newspapers and radio stations.

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

Updates to the MCWD website occurs for all news releases. Updates to the front page are made regularly to keep current with the most relevant topics for the district.

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; hands out free water efficiency items for customers; runs a water-efficiency rebate program; hosts classes on water efficiency topics; sponsors local water resource events; and provides landscape water reports to property managers and homeowner associations.

5. *Annual budget for public outreach program.*

The budget for fiscal year 2015 was \$105,100.

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 regulations;
- 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;

- Conducted a leak detection class and certification program for plumbers that was open to property managers and the public;
- Continued a Water Hero program that recognizes property managers that significantly reduced water usage;
- Hosted two public landscape water-efficiency classes, soil amendments and mulches, that provided continuing education credits for landscapers with Qualified Water Efficient Landscaper certification;
- Sent customers conservation messages on the water bills;
- Printed and distributed magnets with irrigation schedules and general conservation messages;
- Worked one-on-one with irrigation customers with high consumption,
- Continued maintenance on demonstration landscape at entrance to Mammoth Lakes, and
- Increased advertisements written in Spanish for the local Spanish language newspaper.

CUWCC Water Savings Assumptions

CUWCC does not have a quantified water savings assumption.

School Education Programs

MCWD supports and participates in a classroom education program to reach our local young water users. This program engages students by teaching them the importance of water and energy conservation and provides means for action through a 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 grades 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, the MCWD takes all the students to tour water facilities in the Lakes Basin and the wastewater treatment plant and solar array on the MCWD campus.

4. *Annual budget for school education program.*

The MCWD provides a partial sponsorship of \$4,000 for the program plus three employees over two days for the field tours.

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.

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.

Staff contacted customers when hourly interval data from the new metering system indicated a leak on their property. A leak is identify by a continuous flow of water though the meter. This leak detection program started in January 2015. For fiscal year 2015, calls were made to 119 customers to notify them of leaks in their homes. As a result, 22 million gallons of water will be saved annually from fixing these leaks. Through this program, it became evident that plumbers and property managers would benefit from a workshop on finding leaks. MCWD held a public leak detection class in March 2015 that targeted property managers and plumbers. Plumbers that attended the class and passed a test are listed on the MCWD website.

MCWD keeps an inventory of dye tablets 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 2015, customers picked up 166 free water-efficient showerheads and an additional 73 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 230 faucet aerators, 80 shut-off hose nozzles, and 50 hose timers. 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.

No single-family landscape surveys were completed. Instead, MCWD focused on the irrigation accounts with the highest use and irrigation accounts that were significantly exceeding their Maximum Applied Water Allowances. As a result, water demand from our irrigation account customers dropped by 33 percent in 2014 compared to 2013. This percentage savings is equal to 24.5 million gallons or 75 acre-feet.

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 a water factor of 4.5, below the 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.

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 requires new developments to install water efficient fixtures that meet WSS. Because the Green Building Code does not apply to remodel projects, MCWD allows project applicants to reduce fixture counts by changing all building fixtures to WSS. 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.

CUWCC Water Savings Assumptions

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

Annual savings from the programs described above were 2.5 million gallons from irrigation customer contacts, 2.3 million gallons from the indoor rebate program (saving from irrigation rebates are not estimated), and 22 million gallons from the leak control program. The school water and energy program, LivingWise, reported a water savings of 221,840 gallons through the installation of water efficiency aerators and showerheads. The total annual savings are 27 million gallons or 82.9 acre-feet.

Commercial, Industrial, and Institutional

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:

The MCWD had determined that targeting other classes of customers results in greater demand reduction than developing a program to target CII customers specifically. Water usage from the Commercial and Institutional customer classes represented 3.1 percent of total water usage in 2014. However, conservation is encouraged by landscape conservation efforts and the leak detection program described above. MCWD does not have any industrial accounts.

CUWCC Water Savings Assumptions

This BMP is not currently implemented by the MCWD.

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.*

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. For the 120 Commercial and Institutional accounts, 21 of these accounts also have an irrigation meter.

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

MCWD offers rebates for landscape efficiency projects regardless of their customer class. Six rebates for new pressure-reducing valves on irrigation systems were given in 2014. 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.

- c. *Number of surveys offered.*

MCWD does not have a specific CII survey program because the number of CII accounts is relatively small. 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.*

The MCWD provided significant assistance to all irrigation customers with excessive use. In combination with the tiered rates based on MAWA and enforcement of regulations, irrigation demand was 33 percent less than the previous year. This reduction totaled 24.5 million gallons or 75 acre-feet in savings.

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

See response in e above for water savings from reducing landscape water demand.

HIGHLIGHTS OF WATER CONSERVATION IN 2014

In 2014, MCWD customers reduced usage by 15 percent in comparison to 2013. This level of reduction exceeded the MCWD's goal of 10 percent, the target reduction under Level 1 Water Shortage Conditions in effect since August 2012. Irrigation customers reduced demand by 33 percent in 2014. This customer group was targeted for demand reduction by MCWD conservation staff using hourly meter data provided by some of the meters. Overall, 124 million gallons of water were saved, enough to serve 850 four-person households for a year.

The new meter replacement project provided strong support to MCWD conservation efforts. MCWD invested approximately \$1.4 million to replace all customer meters less than 3 inches in diameter. The

project was initiated in autumn of 2014 and was completed in January of 2015. All new meters have are capable of reading flows of 1/10th of a gallon every hour. All MCWD meters, regardless of size, received new radios that transmit hourly usage data on a daily basis. This project is providing the data necessary to find customer leaks, track landscape water allowances weekly, and to find water regulation violations.

The MCWD held classes to train property managers and landscapers on water efficient landscape management practices and a leak detection class targeting plumbers and property managers. These classes are held at noon and the MCWD provides lunch for participants. The response from the participants has been extremely positive and the classes provide an opportunity for local contractors to interact with MCWD personnel.

The MCWD has been revisiting the Code Book annually to improve the water restriction regulations and enforcement provisions. Staff recommends changes to the MCWD Board of Directors based on information and experiences gained from the previous year to improve the clarity and provisions of the water conservation standards, regulations and enforcement.

RECOMMENDATIONS FOR FY 2016

The meter replacement project has provided very useful data to the conservation team; however, additional tools that would provide reporting capabilities and development of a customer interface are high priority conservation needs for fiscal year 2016. The customer portal will allow customers to access their daily, weekly, monthly and annual water usage data. 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 would like 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.