

Adopted by the CWCB Board  
November 16, 2011



## **COLORADO WATER CONSERVATION BOARD**

### **Guidelines Regarding the Reporting of Water Use and Conservation Data by Covered Entities**

#### **INTRODUCTION**

The purpose of this document is to describe the Colorado Water Conservation Board (CWCB) process to implement the *Act Concerning Additional Information Regarding Covered Entities' Water Efficiency Plans*, as approved under House Bill (HB) 10-1051. The Act calls for the Board to establish Guidelines<sup>1</sup> regarding the reporting of water use and conservation data by covered entities. A "covered entity" is defined as each municipality, agency, utility, including any privately owned utility, or other publicly owned entity with a legal obligation to supply, distribute, or otherwise provide water at retail to domestic, commercial, industrial, or public facility customers, and that has a total demand for such customers of two thousand acre-feet or more, per Section 37-60-126(1)(b) of the Colorado Revised Statutes (C.R.S.).

The CWCB developed these Guidelines through a public participation process that included outreach to stakeholders from water providers with geographic and demographic diversity, nongovernmental organizations, and water conservation professionals, per Section 37-60-126(4.5), C.R.S. A Technical Advisory Group was formed to provide recommendations and advise on the development of the specific data requirements and definitions in the Guidelines, focusing on technical issues, to ensure the usefulness of the data for statewide water supply planning. A Stakeholder Advisory Group expanded the perspective to provide recommendations focused on the practicality of implementing the Guidelines. Following development of the draft Guidelines with input from the advisory groups, the CWCB provided a full public review process with public comments incorporated in the final Guidelines. A briefing to the CWCB Board is provided as Attachment A which will be available in February 2012.

In developing the Guidelines, the CWCB and advisory groups considered examples of categories of customers, uses, and measurements currently reported by covered entities under existing water conservation plans, data that are anticipated to be readily available to the majority of covered entities, and data that would improve statewide water planning. Descriptions of these data for the Guidelines were developed through the advisory groups and supplemented with terminology that is utilized within the water resources industry, as identified through published professional references.<sup>2</sup>

#### **WATER USE AND CONSERVATION DATA REPORTING GOALS AND PURPOSE**

The purpose of the data reporting, per Section 37-60-126(4.5)(a), C.R.S., is to provide water use and conservation data to be used for statewide water supply planning. The data collection process described in these Guidelines, developed as part of HB10-1051, is designed to provide better, more frequent, and more reliable data than currently available. These Guidelines create standardized reporting in that each covered entity is required to report the same type of

information. However, this does not necessarily standardize the data collection process and does not require entities to change their data/billing systems to report in a particular format.

Specific reporting categories were identified to allow the data to be utilized for annual forecasting purposes and to predict how water demands for different customer categories may evolve over time, through considering potential effects of water conservation. This information will be incorporated into existing statewide water supply planning efforts, specifically but not limited to the Statewide Water Supply Initiative (SWSI) process and the CWCB's role in supporting covered entities seeking to develop and update water conservation and drought mitigation and response plans. Additionally, data reporting will help the CWCB in developing more targeted technical outreach efforts aimed at providing better local water conservation planning tools to covered entities throughout Colorado.

Water demand and conservation savings forecasts developed under the statewide water supply planning process strive to employ consistency in data collection and forecast methodology across the state and to maximize available data. The statewide and basinwide planning efforts are not intended to replace water conservation, water resources planning, nor projections prepared by local entities for project-specific purposes. This data alone will not provide useful comparisons nor is it intended to be used to provide comparisons between utilities, but will greatly improve the statewide water supply planning efforts.

The authorizing legislation for the reporting requirements is provided as Appendix A. Specific data collection and reporting needed to meet the goal of the reporting process are provided under the subsequent sections of this document. The following Guidelines have been developed pursuant to Section 37-60-126(4.5), C.R.S. and are adopted by the CWCB.

**NOTE:**

*All water use and conservation data reporting under these Guidelines will become public record and will be available to the public through the CWCB website. The reporting under Section 37-60-126(4.5), C.R.S. does not take the place of local conservation planning or plans that must be submitted per Section 37-60-126(2), C.R.S. These data will be used for general statewide water supply planning per section Section 37-60-126(4.5(a), C.R.S. These Guidelines shall be reviewed and updated as necessary.*

**REPORTING REQUIREMENTS**

HB10-1051 directs the Board to establish Guidelines that include clear descriptions of categories of customers, uses, and measurements. Recognizing that each covered entity is unique in its particular water supply portfolio, distribution system, and customer base, the CWCB utilized a public outreach process to establish reporting requirements that will enhance the consistency of the data that are collected, to increase the utility of data for statewide planning purposes, and to facilitate the reporting process. In developing these Guidelines, the CWCB and advisory groups recognized that it is not possible to create data reporting categories and descriptions that are universally applicable to all covered entities. The public participation process was utilized to develop reporting guidelines that relate to a broad group of covered entities. A reporting tool, as

further described under the Reporting Process section below, will support the data reporting process.

To address the unique framework of each covered entity's water distribution system and customer characterization, certain water use and water conservation data will be reported by water distribution system type and customer class. Based on advisory committee input and review of the water conservation plans on file with the CWCB, the following water distribution system categories and customer classes are anticipated to represent the majority of systems:

Water Distribution Systems:

- Potable Water,
- Non-Potable Raw Water, and
- Non-Potable Reuse (or Reclaimed) Water.

Customer Categories:

- Residential (Single Family and Multi-Family),
- Utility/Municipal Facility
- Commercial, Industrial, and Institutional (CII), and
- Irrigation Only.

A list of the water use and water conservation data categories for reporting is provided below. These data are identified specifically to improve statewide water planning. Additionally, the advisory groups encouraged covered entities to collect all of the data for the value it will add to the covered entities' individual water supply planning efforts. Recognizing that all of the data may not be immediately available from all covered entities, the majority of the data are anticipated to be readily available to the majority of covered entities, based on the advisory group input. Additional descriptions and definitions are provided in Appendix B and a draft reporting tool template is provided as Appendix C. For those covered entities that have multiple water distribution systems, as described in Appendix B, certain data will be reported for each system.

Data Categories:

- 1) Contact and Submittal Information
  - a) Contact information
  - b) Reporting date
  - c) Applicable customer categories
- 2) Water Use Data by Customer Category for each Applicable Water Distribution System
  - a) Distributed water (water produced and put into distribution system)
  - b) Wholesale water provided to another entity
  - c) Frequency of billing
  - d) Metered water use

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- e) Normalizing data
    - i) Population served during reporting period
    - ii) Number of active service connections
    - iii) Number of service connections with zero use
  - f) Annual system water audit report
    - i) Billed unmetered water use
    - ii) Unbilled authorized water use
    - iii) Apparent losses
    - iv) Real losses
  - g) Supplemental information
    - i) Irrigated acreage by customer category
    - ii) Average annual gross evapotranspiration rate for service area
    - iii) Average annual total precipitation for service area
    - iv) Typical irrigation application rate for service area
    - v) Number of housing units for each residential water use category
    - vi) Return flow information
- 3) Foundational Water Conservation Program Information
- a) Percentage of meters under each type of meter reading method, by customer category for each applicable water distribution system
    - i) Unmetered
    - ii) Manual Read
    - iii) Estimated Read
    - iv) AMR
    - v) AMI
  - b) Frequency of meter readings by customer category for each applicable water distribution system
    - i) Monthly
    - ii) Bi-monthly
    - iii) Other (specify)
  - c) Type of billing rate structure by customer category for each applicable water distribution system
    - i) Declining tiered rates
    - ii) Fixed (flat) fee

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- iii) Uniform rates
- iv) Inclining tiered rates
- v) Water budget-based rates
- vi) Seasonal rates
- vii) No charge
- viii) Other
- d) Details of billing rate structures by customer category for each applicable water distribution system
  - i) Tiers (number or name)
  - ii) Price per billing unit within each identified tier
  - iii) Consumption range within each rate tier
  - iv) Service charge/base rate/fixed charges
- e) Tap fees/development charges/connection charges or equivalent (if applicable)
- f) Water loss characterization
  - i) Meter testing program characteristics
  - ii) Large meter testing frequency
  - iii) Average replacement age for small meters
  - iv) Nature of leak detection program
  - v) Percent of system inspected annually for leaks
  - vi) Percent of pipe replaced annually throughout system
- g) Water conservation program staffing levels
- 4) Targeted Technical Assistance and Incentives
  - a) Management of utility/municipal facility demands
  - b) Management of largest water customer demands
  - c) Management of remaining customer demands
- 5) Ordinances and Enforcement Activities
  - a) Water provider's land use authority
  - b) Water waste ordinance information
  - c) New construction regulations information
  - d) Existing building stock/retrofit construction regulations information
- 6) Education
  - a) One-way educational programs information
  - b) One-way with feedback educational programs information

- c) Two-way educational programs information
- 7) Costs (staff time and other)
  - a) Total annual cost of water conservation program incurred by the utility/district
  - b) Annual cost breakdown by SWSI Conservation Levels categories for water conservation programs incurred by the utility/district (optional)
  - c) Total annual customer costs (optional)

## **REPORTING PROCESS**

HB10-1051 directs the Board to establish Guidelines and describe how the Guidelines will be implemented and how data will be reported to the Board. A reporting tool will be developed to support the reporting process and allow covered entities to describe any cases where certain definitions in these Guidelines are not directly applicable to data available from the particular entity. It will also provide a location for metadata to be entered to describe how the data were prepared. Through outreach and communication, the CWCB may obtain additional information that can be used to improve interpretation of the reported data and the statewide water supply planning process. The draft reporting tool template provided as Appendix C is for illustrative purposes only. While the draft reporting tool is comprehensive and captures the full breadth of the potential reporting, the final reporting tool will be refined to customize and condense the required data reporting fields based on actual reporting information. For example, if the entity reports that it serves solely residential customers, the tool will not prompt questions related to water use or water conservation programs applicable to other customer categories.

Section 37-60-126(4), C.R.S. establishes certain processes and obligations for covered entities as well as the CWCB, as further described in this section.

### **A. Covered Entities**

- i. For each annual report, covered entities shall utilize the current version of the data reporting tool to report the data identified in these Guidelines. Covered entities shall download the most recent version of the data reporting tool from the CWCB website (<http://cweb.state.co.us>) each January 1 for use in the previous calendar year reporting. Any updates or modifications to the data reporting tool will be completed and made available to the public by December 31 of each calendar year.
- ii. Covered entities shall submit information following the Reporting Requirements section described above for the previous calendar year to the CWCB annually by June 30, starting no later than June 30, 2014 and continuing through June 30, 2020, per Section 37-60-126(4.5)(a), C.R.S. This requirement pertains to entities meeting the covered entity definition under during Section 37-60-126(4.5)(b), C.R.S. Entities will be allowed a one year grace period once becoming a covered entity. As an example, an entity that first delivers over two thousand acre-feet in 2015 (i.e. is not a covered entity for the entire calendar year of 2015) is not required to report until June 30, 2017, for the 2016 calendar year water use and water conservation data.

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- iii. A covered entity responsible for administering a water conservation master plan approved by the Colorado Water Conservation Board's Office of Water Conservation and Drought Planning in compliance with Section 37-60-126, C.R.S (Integrated System Water Conservation Plan) shall be responsible for reporting information for all covered entity members of the Integrated System as specified under Reporting Process of these Guidelines. The covered entity responsible for creating the Integrated System water conservation plan as described in the "Guidelines for the Office to Review and Evaluate Water Conservation Plans" will be responsible for reporting all required information under House Bill 10-1051.
- iv. The statute repeals the reporting requirement as of July 1, 2020, per Section 37-60-126(4.5)(c)(II), C.R.S.

**B. Colorado Water Conservation Board**

- i. No later than February 1, 2012, the Board shall adopt Guidelines regarding the reporting of water use and conservation data by covered entities, per Section 37-60-126(4.5)(b), C.R.S. The Guidelines shall be adopted pursuant to the Board's public participation process and shall include outreach to stakeholders from water providers with geographic and demographic diversity, nongovernmental organizations, and water conservation professionals. The Guidelines shall include clear descriptions of categories of customers, uses, and measurements, how the Guidelines will be implemented, and how the data will be reported to the Board.
- ii. No later than February 1, 2012, the Board shall provide a report to the Senate Agriculture and Natural Resources Committee and the House of Representatives Agriculture, Livestock, and Natural Resources Committee, or their successor committees, regarding the guidelines, per Section 37-60-126(4.5)(b), C.R.S.
- iii. The data reporting tool will be accessible through the CWCB website (<http://cwcb.state.co.us>) no later than December 31, 2013. Any updates or modifications to the data reporting tool will be completed and made available to the public by December 31 of each calendar year.
- iv. Beginning June 30, 2014, the annual deadline for covered entities to report water use and conservation data will be June 30, through the year 2020. CWCB shall utilize the data in statewide water supply planning efforts, per Section 37-60-126(4.5)(a), C.R.S. Data reported under these Guidelines will support statewide water supply planning efforts by improving the quantity and quality of data available and improving consistency in the data reporting. Additionally, data reporting will help the CWCB in developing more targeted technical outreach efforts aimed at providing better local water conservation planning tools to covered entities throughout Colorado.
- v. No later than February 1, 2019, the Board shall brief the Senate Agriculture and Natural Resources Committee and the House of Representatives Agriculture, Livestock, and Natural Resources Committee, or their successor committees, on the guidelines and data collected by the Board under the guidelines, per Section 37-60-126(4.5)(c)(I), C.R.S.

***All water use and conservation data reporting under these Guidelines will become public record and will be available to the public through the CWCB website. The reporting under Section 37-60-126(4.5), C.R.S. does not take the place of local conservation planning or plans that must be submitted per Section 37-60-126(2), C.R.S. These data will be used for general statewide water supply planning per section Section 37-60-126(4.5(a), C.R.S. These Guidelines shall be reviewed and updated as necessary.***

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<sup>1</sup> Per Section 37-60-126(4.5)(b), C.R.S., the board shall adopt guidelines regarding the reporting of water use and conservation data by covered entities and shall provide a report to the senate agriculture and natural resources committee and the house of representatives agriculture, livestock, and natural resources committee, or their successor committees, regarding the guidelines. These guidelines shall:

- (I) Be adopted pursuant to the board's public participation process and shall include outreach to stakeholders from water providers with geographic and demographic diversity, nongovernmental organizations, and water conservation professionals; and
- (II) Include clear descriptions of: Categories of customers, uses, and measurements; how guidelines will be implemented; and how data will be reported to the board.

<sup>2</sup> *Citizen's Guide to Colorado Water Law, 3rd Edition.* Colorado Foundation for Water Education, 2009.

*Forecasting Urban Water Demand, 2<sup>nd</sup> Edition.* American Water Works Association, 2008, R. Bruce Billings and Clive V. Jones.

*Guidebook of Best Practices for Municipal Water conservation in Colorado.* Colorado WaterWise, 2010. Prepared by Aquacraft, Inc. with support from Colorado Water Conservation Board.

*SWSI Conservation Levels Analysis.* Colorado Water Conservation Board, 2010. Prepared by Great Western Institute.

*DRAFT SWSI Conservation Levels Analysis: Phase II Draft.* Colorado Water Conservation Board, 2011. Prepared by Great Western Institute.

*USEPA WaterSense Partnership Program.* [www.epa.gov/WaterSense/](http://www.epa.gov/WaterSense/)

*Utility Water Loss, A Review of Current Practices in Colorado, Requirements of Other States, and New Procedures and Tools.* Colorado Water Conservation Board, 2009. Prepared by Aquacraft, Inc.

*Water Audits and Loss Control Programs, American Water Works Association Manual M36, Third Edition.* 2009.

*Water Conservation Measurement Metrics Guidance Report.* American Water Works Association, Water Conservation Division Subcommittee Report, 2009. Benedykt Dziegielewski and Jack C. Kiefer.

*Water Conservation Programs – A Planning Manual, American Water Works Association Manual M52, First Edition,* 2006.



**NOTE: This bill has been prepared for the signature of the appropriate legislative officers and the Governor. To determine whether the Governor has signed the bill or taken other action on it, please consult the legislative status sheet, the legislative history, or the Session Laws.**



HOUSE BILL 10-1051

BY REPRESENTATIVE(S) Pommer, Fischer, Frangas, Hullinghorst,  
Labuda, Looper, Pace;  
also SENATOR(S) Whitehead, Carroll M., Foster, Tochtrop.

CONCERNING ADDITIONAL INFORMATION REGARDING COVERED ENTITIES'  
WATER EFFICIENCY PLANS.

*Be it enacted by the General Assembly of the State of Colorado:*

**SECTION 1.** 37-60-126 (4) (a) (I) and (9) (a), Colorado Revised Statutes, are amended, and the said 37-60-126 is further amended BY THE ADDITION OF A NEW SUBSECTION, to read:

**37-60-126. Water conservation and drought mitigation planning - programs - relationship to state assistance for water facilities - guidelines - water efficiency grant program - repeal.** (4) A plan developed by a covered entity pursuant to subsection (2) of this section shall, at a minimum, include a full evaluation of the following plan elements:

(a) The water-saving measures and programs to be used by the covered entity for water conservation. In developing these measures and programs, each covered entity shall, at a minimum, consider the following:

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*Capital letters indicate new material added to existing statutes; dashes through words indicate deletions from existing statutes and such material not part of act.*

(I) Water-efficient fixtures and appliances, including toilets, urinals, CLOTHES WASHERS, showerheads, and ~~faucets~~ FAUCET AERATORS;

(4.5) (a) ON AN ANNUAL BASIS STARTING NO LATER THAN JUNE 30, 2014, COVERED ENTITIES SHALL REPORT WATER USE AND CONSERVATION DATA, TO BE USED FOR STATEWIDE WATER SUPPLY PLANNING, FOLLOWING BOARD GUIDELINES PURSUANT TO PARAGRAPH (b) OF THIS SUBSECTION (4.5), TO THE BOARD BY THE END OF THE SECOND QUARTER OF EACH YEAR FOR THE PREVIOUS CALENDAR YEAR.

(b) NO LATER THAN FEBRUARY 1, 2012, THE BOARD SHALL ADOPT GUIDELINES REGARDING THE REPORTING OF WATER USE AND CONSERVATION DATA BY COVERED ENTITIES, AND SHALL PROVIDE A REPORT TO THE SENATE AGRICULTURE AND NATURAL RESOURCES COMMITTEE AND THE HOUSE OF REPRESENTATIVES AGRICULTURE, LIVESTOCK, AND NATURAL RESOURCES COMMITTEE, OR THEIR SUCCESSOR COMMITTEES, REGARDING THE GUIDELINES. THESE GUIDELINES SHALL:

(I) BE ADOPTED PURSUANT TO THE BOARD'S PUBLIC PARTICIPATION PROCESS AND SHALL INCLUDE OUTREACH TO STAKEHOLDERS FROM WATER PROVIDERS WITH GEOGRAPHIC AND DEMOGRAPHIC DIVERSITY, NONGOVERNMENTAL ORGANIZATIONS, AND WATER CONSERVATION PROFESSIONALS; AND

(II) INCLUDE CLEAR DESCRIPTIONS OF: CATEGORIES OF CUSTOMERS, USES, AND MEASUREMENTS; HOW GUIDELINES WILL BE IMPLEMENTED; AND HOW DATA WILL BE REPORTED TO THE BOARD.

(c) (I) NO LATER THAN FEBRUARY 1, 2019, THE BOARD SHALL REPORT TO THE SENATE AGRICULTURE AND NATURAL RESOURCES COMMITTEE AND THE HOUSE OF REPRESENTATIVES AGRICULTURE, LIVESTOCK, AND NATURAL RESOURCES COMMITTEE, OR THEIR SUCCESSOR COMMITTEES, ON THE GUIDELINES AND DATA COLLECTED BY THE BOARD UNDER THE GUIDELINES.

(II) THIS PARAGRAPH (c) IS REPEALED, EFFECTIVE JULY 1, 2020.

(9) (a) Neither the board nor the Colorado water resources and power development authority shall release grant or loan proceeds to a

covered entity unless ~~such~~ THE covered entity provides a copy of the water conservation plan adopted pursuant to this section; except that the board or the authority may release ~~such~~ THE grant or loan proceeds NOTWITHSTANDING A COVERED ENTITY'S FAILURE TO COMPLY WITH THE REPORTING REQUIREMENTS OF SUBSECTION (4.5) OF THIS SECTION OR if the board or the authority, as applicable, determines that an unforeseen emergency exists in relation to the covered entity's loan application, in which case the board or the authority, as applicable, may impose a grant or loan surcharge upon the covered entity that may be rebated or reduced if the covered entity submits and adopts a plan in compliance with this section in a timely manner as determined by the board or the authority, as applicable.

**SECTION 2. Applicability.** This act shall apply to conduct occurring on or after the effective date of this act.

**SECTION 3. Safety clause.** The general assembly hereby finds,

determines, and declares that this act is necessary for the immediate preservation of the public peace, health, and safety.

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Terrance D. Carroll  
SPEAKER OF THE HOUSE  
OF REPRESENTATIVES

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Brandon C. Shaffer  
PRESIDENT OF  
THE SENATE

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Marilyn Eddins  
CHIEF CLERK OF THE HOUSE  
OF REPRESENTATIVES

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Karen Goldman  
SECRETARY OF  
THE SENATE

APPROVED \_\_\_\_\_

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Bill Ritter, Jr.  
GOVERNOR OF THE STATE OF COLORADO

**Guidelines Regarding the Reporting of Water Use and  
Conservation Data by Covered Entities**

**Appendix B  
Reporting Data Definitions**

Descriptions of the data for the Guidelines were developed through the advisory groups and supplemented with terminology that is utilized within the water resources industry, as identified through published professional references.<sup>1</sup> The following definitions clarify specific terminology that could have multiple interpretations throughout the water industry but is not intended to be comprehensive to the extent of defining every term in the data reporting list. The definitions are intended to help provide clarity, and are not intended to promote one type of system or program over another. The metadata category of the reporting tool provides an opportunity to describe situations that are unique or need further clarification.

- 1) **Distributed Water.** The purpose of the distributed water information is to determine the total amount of water provided to end users (customers) through distribution system(s), based on water production records. This may also be referred to as “water production” data (i.e. amounts of water pumped into the distribution system). This may entail multiple types of distribution systems such as potable water delivered through a treated water system and/or non-potable water delivered as raw water or reuse. For example, surface water may be diverted from a stream, treated, and distributed as a potable water supply; ground water may be pumped from a well and distributed as a non-potable raw water supply, etc. May include stand-alone systems that are under the responsibility of the reporting entity.
  - a) **Potable Water Into a Distribution System:** Volume of treated water entering the distribution system. May include both surface and ground water supplies.
  - b) **Non-Potable Raw Water Into a Distribution System:** Volume of raw water entering the distribution system. May include both surface and ground water supplies.
  - c) **Non-Potable Reuse (or Reclaimed) Water Into a Distribution System:** Volume of reuse or reclaimed water entering the distribution system.
  
- 2) **Customer Categories.** Report water use data for each distribution system. The following customer categories apply to Potable Water uses and some categories may also apply to Non-Potable Raw Water and Non-Potable Reuse (or Reclaimed) water uses. The reporting tool allows reporting for each customer category within each distribution system. Based on existing water conservation plans and input from the advisory committees, the following customer categories are relevant for the majority of reporting entities. These definitions are not suggesting entities modify customer categories, rather that any exceptions be reported by describing as metadata using the reporting tool.
  - a) **Residential:** Residential water use will be differentiated by single family and multi-family uses if the covered entity tracks these customer uses separately; otherwise total residential water use may be reported.
    - (i) **Single Family:** Includes all billed and metered water use by single-family residential customers for indoor and outdoor uses served by a distribution system. Single-family

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- uses may include, but are not limited to, residential single family, large residential lots, small residential lots, owners, renters, individual mobile homes and standard Single Family Equivalent taps, 5/8 inch taps, and/or 3/4 inch taps that serve single family dwellings.
- (ii) **Multi-Family:** Includes all billed and metered water use by multi-family residential customers for indoor and outdoor uses in locations both inside and outside of the city/town limits. Multi-family uses may include, but are not limited to, attached residential units (e.g. duplexes, triplexes), master-metered mobile homes, apartments, condominiums, and town homes. Note that some entities may include multi-family irrigation under “irrigation only” accounts.
- b) **Commercial, Industrial, and Institutional (CII):** Includes all billed and metered water use by CII customers for indoor and combined indoor and outdoor uses (report CII taps for outdoor-only uses under the “irrigation only” category) in locations both inside and outside the city/town limits. CII uses may include, but are not limited to, commercial businesses, industry, dairies, greenhouses, hotels, motels, restaurants, offices, breweries, military, hospitals, schools, assisted living and extended care facilities, churches, airports, fairgrounds, car washes, etc. City/Municipal/District uses may be reported separately or otherwise noted.
- c) **Municipal/Utility Facility:** Includes all billed and metered water use by the water utility, municipality, and/or the district that operates the water utility for indoor and combined indoor and outdoor uses (report Municipal/Utility facility taps for outdoor-only uses under the “irrigation only” category). Municipal/Utility Facility uses may include, but are not limited to, recreation centers, town hall, administrative buildings, hydrants, other government uses, etc. These uses may be aggregated under the CII category.
- d) **Irrigation Only:** Includes all billed and metered water use by customers for outdoor watering exclusively (report Residential taps for outdoor-only uses under the appropriate Residential category). The Irrigation Only category may include, but is not limited to, city and town parks, HOAs, open space, swim clubs, landscape uses, golf courses, etc.
- e) **Other:** Includes any other water use not captured in the above defined categories with the exception of non-revenue (a.k.a. unaccounted for) water (reported separately). Other uses may include large short-term seasonal uses (e.g., snow making), one time construction water, bulk water, etc. Explicitly report any single “other” use that is greater than 3% of the total metered water use for a particular distribution system, separate from the general “Other” category.
- f) **Wholesale:** Includes water sold by the reporting entity to another entity, for resale to the end customer.
- 3) **Metered Water Use.** The purpose of the metered water use information is to determine the demand or total amount of water used by end users (customers) indoors and outdoors. Metered water use data are typically available through billing records, with entities using a variety of billing cycle periods. Individual billing records often include information regarding the type of account (i.e. customer category), meter size, meter readings, and dates of readings. The reporting tool will allow metered water use data to be entered for each

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distribution system category of Potable Water, Non-Potable Raw Water, and Non-Potable Reuse (or Reclaimed) Water, such that outdoor and indoor uses can be determined.

- a) **Metered Water Use:** Metered water use for each customer category provided monthly, or if monthly data are not available, an estimate of monthly use from bi-monthly, quarterly, or other specified metered water use/billings.
  - b) **Average Monthly Indoor Use:** Average monthly indoor metered water use estimated for each distribution system and customer category. Average monthly indoor water use in Colorado is often projected using metered water use data for a subset of winter months, e.g. (January + February metered use) / 2. This methodology may not apply to all communities and billing cycles may affect the specific months used to estimate indoor uses. The reporting tool will allow reporting the average monthly indoor use or specification of the months in which metered water use data are most representative of indoor uses, from which CWCB may estimate the average monthly indoor use.
- 4) **Normalizing Data (or Scaling Variables).** The purpose of the normalizing data is to allow water use to be evaluated on a common unit basis and to add perspective to water use trends.
- a) **Population Served During Reporting Period:** Permanent (total year-round) residential population served reported along with the source of information (e.g. census and state demographer data). Recognizing that entities are affected differently by transient populations associated with students, tourism, jobs, military, etc., indicate whether the population is affected by these and provide an estimate if available, along with the source of information.
  - b) **Number of Active Service Connections:** Monthly number of active/billed customer accounts (service connections) by customer category.
  - c) **Number of Service Connections with Zero Use:** Monthly number of customer accounts (service connections) with zero consumption, by customer category. This may include accounts that are temporarily inactive but anticipated to come back on-line at a future date, accounts with zero use during portions of the year, etc.
- 5) **Annual Audit Report:** The purpose of the annual audit reporting data is to obtain information on water audit and loss control through real and apparent loss data. The American Water Works Association (AWWA) has developed a standard methodology for determining water loss for municipal water providers (2009 AWWA M36 Manual of Practice – *Water Audits and Loss Control Programs (3rd Edition)*). For systems in which the following data cannot be provided, the CWCB will estimate real losses as the total Distributed Water minus total Metered Water Use. The sum of total Metered Water Use, apparent losses (unauthorized consumption), and real losses should equate to the total Distributed Water.
- a) **Billed Unmetered Water Use:** Any unmetered water use such as customers billed at a flat rate. May also be used to account for metered uses with meters known to be highly nonfunctional, highly inaccurate, or readings are unobtainable in which case, estimates of water use are used in place of measured water use.

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- b) **Unbilled Authorized Water Use:** Any kind of authorized water use which is unbilled (metered or unmetered). Typically describes water taken irregularly in a variety of manners from nonaccount connections that typically do not supply permanent structures. May include, but is not limited to, fire fighting, flushing of mains and sewers, street cleaning, construction, water treatment facility backwash water, etc.
  - c) **Apparent Losses:** Nonphysical losses that occur when water is successfully delivered to the customer but, for various reasons, is not measured or recorded accurately. Includes losses in customer water use attributed to inaccuracies associated with customer metering, systematic data handling error, plus unauthorized water use (theft or illegal use of water). May include, but is not limited to, water illegally withdrawn from hydrants, illegal connections, meter equipment tampering, adjustments to metered water use for meter under- or over-registration, and billing adjustments.
  - d) **Real Losses:** Physical water losses from the distribution system, up to the point of the customer's meter. May include, but is not limited to leakage from water mains and customer service connection pipes, joints, and fittings (the largest component by volume for most systems), storage tank overflows, or similar operator error.
- 6) **Supplemental Information:** Recognizing that the following information may not be available for many covered entities, it is requested to the extent that it is readily available or can be estimated within reasonable levels of effort.
- a) **Irrigated Acres:** Best estimate of irrigated acres served by each customer category, including source of information.
  - b) **Average Annual Gross Evapotranspiration Rate for Service Area:** Average local inches of gross evapotranspiration for service area during reporting period, including source of information and method used.
  - c) **Average Annual Total Precipitation for Service Area:** Average local total inches of precipitation for service area during reporting period, including source of information.
  - d) **Irrigation Application Rate:** Application rate of outdoor use in gallons per square foot of irrigated area, including source of information.
  - e) **Number of Housing Units:** Total number of households for each residential customer category. Recognizing that data for the Multi-Family category may require audits and information on occupancy rates, provide and estimate if available along with the source of information.
  - f) **Return Flows:** Water that returns to streams, rivers, and aquifers after it has been applied to beneficial use. It may return as surface flow or as ground water flow.
- 7) **Meter Types:** Specify the percentage of meters under each type of meter reading method, by customer category, for each applicable water distribution system.
- a) **Manual Read:** Manual meter reading with reading personnel physically visiting individual meters to collect readings.
  - b) **Estimated Read:** Estimated meter reading based on historical trends from past meter readings.



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- c) **AMR:** Automatic meter reading where radio signals transmit the current meter reading to a device outside of the building or meter pit in which the meter is located. Mobile AMR systems allow readings to be collected by readers with hand-held devices or via automobiles patrolling scheduled meter reading routes. Fixed network AMR include permanently installed data collector units located throughout the service area.
  - d) **AMI:** Advanced metering infrastructure, also referred to as smart meters, goes beyond AMR to include networking technology (telemetry) for remote leak detection, frequent meter data collection, and two-way communication between customer and utility.
- 8) **Rate Structures:** Provide information by customer category, for each applicable water distribution system. The reporting tool will provide an option to attach the entity's current rate structure for each customer class.
- a) **Declining tiered rates:** Lower rate charges for higher quantities of water use.
  - b) **Fixed (flat) fee:** Fixed fee (charge) regardless of how much water is used.
  - c) **Uniform rates:** Same unit charge for water regardless of how much water is used.
  - d) **Inclining tiered rates:** Higher unit charges are triggered at higher levels of water use.
  - e) **Water budget-based rates:** A variation of increasing tiered rates, where tailored allocations are developed for each customer and rates increase as the allocation is used or exceeded. Tier (or block) size is typically defined by an empirical determination of efficient use for each customer using customer specific characteristics such as irrigable area.
  - f) **Seasonal rates:** Higher prices are charged during periods of scarcity (typically summer and fall) to more efficiently allocate water in times of shortage.
- 9) **Educational Programs:** Provide information on the types of educational programs and estimates of number of customers reached with each program.
- a) **One-Way Education:** One-way educational efforts send out information without tracking or specific follow-up (e.g. bill stuffers).
  - b) **One-Way With Feedback Education:** One-way "with feedback" educational efforts send out information and allow for some level of tracking or feedback (e.g. K-12 classroom presentations and interactive websites).
  - c) **Two-Way Education:** Two-way educational efforts involve two-way communications (e.g. focus groups).
- 10) **Point of Sale Controls:** Ordinance/regulation to provide opportunity to ensure the water efficiency features meet current regulations and/or to incentivize increased efficiency through retrofit of fixtures, appliances, landscape, and irrigation systems. Requirements can be triggered before a residence or building can be sold, transferred from one owner to another, or renovated beyond a predetermined level.

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**11) Costs:** Costs incurred by the utility/municipality/district may be reported as a total over the past reporting period, or as a breakdown by the SWSI Level categories. See the SWSI Conservation Levels Analysis Phase II Report for more information on the categories.

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<sup>1</sup> *Citizen's Guide to Colorado Water Law, 3rd Edition.* Colorado Foundation for Water Education, 2009.

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