

Chapter 3

Water Demand

This section describes the urban water system uses. It quantifies the current water system demand by sector and projects these demands through the year 2035.

Estimating future demand as accurately as possible allows water agencies to appropriately plan their infrastructure investments and manage their water supply. For example, including expected conservation savings in demand projections could guide a water supplier to postpone or downsize new and costly infrastructure projects.

Additionally, planning agencies, whether local, regional, or statewide, rely upon reported demand and demand projections from individual agencies to manage water resources on a larger scale.

Factors to Consider when Projecting Demand

Assessments of future growth and related water demand, done in coordination with local planning agencies, provide essential information for developing demand projections. Agencies may refer to Councils of Governments, Master Plans, General Plans, or other planning documents.

Demand projections include realistic estimates of conservation savings. These include savings from active conservation efforts to meet the targeted 20% reduction by 2020 and passive savings that will come from changes in plumbing codes, landscape ordinances, and other codes and standards.

Including climate change impacts to an agency's water demand is optional, but it can provide a more comprehensive look at the potential impacts on projected demand. For example, hotter and drier weather may lead to increased demand for landscape irrigation. Water agencies are encouraged, not required, to consider potential climate change impacts to their water demand.

This may be done by completing the IRWM Climate Change Vulnerability Assessment found in Appendix XX

This chapter is divided into the following subsections:

3.1 Water Uses by Sector

3.2 Distribution System Losses

3.3 Water Savings from Codes, Ordinances, or Transportation and Land Use Plans

3.4 Coordination between Retailers and Their Wholesaler(s)

3.5 Water Use for Lower Income Households

3.6 Climate Change (optional)

3.1 Water Uses by Sector (*Distribution System Losses are covered in Section 3.2, “Distribution System Water Losses”.*)

CWC 10631(e)(1) and (2)

Quantify, to the extent records are available, past and current water use, and projected water use (over the same five-year increments described in subdivision (a)), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses: (A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; (I) Agricultural...

Water agencies are required to complete and submit Tables 3- 1, 3-2, 3-3 (if applicable), 3-4 (if applicable) and 3-5.

3.1.1 CONSISTENCY OF REPORTING

Estimates of demand should be consistent throughout the UWMP and with other agency reports of water use.

- Supply should equal demand for the years 2010 and 2015.
- Estimates of projected future use should account for the assumed reductions, including active and passive savings, to meet the water use targets in 2015 and 2020. (See Section 4 Baselines and Targets.)
- If available and applicable, passive savings should be accounted for in demand projections.
- Distribution system water losses should be consistent between the AWWA worksheets and the UWMP Water Use tables.
- Volumes of water reported in UWMPs should be consistent with the data reported in Public Water Systems annual reports to the State Water Resources Control Board.
- Information reported in the UWMP should be consistent with information that may be reported in other local water planning documents, such as a Water Master Plan, if applicable.

For purposes of the UWMP:

Water demand - means all the water into the distribution system that is used by a water agency and its customers for any purpose, including non-potable water uses, water losses, and other non-revenue water.

Sectors - Types of water use that are clearly distinct from other water uses.

3.1.2 POTABLE AND NON-POTABLE DEMAND

In order to clearly distinguish between the potable (drinking water) uses and non-potable uses, agencies will report these uses in separate tables.

Potable Water – Water intended for human consumption, delivered through a public water system, and regulated by a State or local health agency. Potable water demand will be reported in Tables 3-1 and 3-2.

Non-Potable Water - Water supply other than potable. This includes raw water and recycled/reclaimed water. Non-potable demand will be reported in Tables 3-3 and 3-4. The recycled water system is described in more detail in Chapter 5: System Supplies.

In Chapter 5 non-potable supplies are identified as “recycled” or “other”, but are reported in the same table as potable supplies.

3.1.3 DEMAND SECTORS LISTED IN WATER CODE

Suppliers are encouraged to use as many water demand sectors as are applicable to provide a full accounting of the total demand.

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Agencies are directed to use the water sectors listed in the water code, to the extent that these are applicable. If there is a difference between the sectors used by the agency and the sectors listed in the water code, agencies may report using the “Other” sector in the required tables.

- (a) Single-family residential – Lots with a free-standing building containing one dwelling unit. May include a detached secondary dwelling.
- (b) Multifamily - Multiple dwelling units contained within one building or several buildings within one complex.
- (c) Commercial – A water user that provides or distributes a product or service.
- (d) Industrial – A water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.
- (e) Institutional and governmental - A water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.
- (f) Landscape – Water connections supplying water solely for landscape irrigation.
- (g) Conjunctive use – A management strategy where surplus surface water is stored in an underground aquifer.
- (h) Groundwater recharge – The intentional replenishment of natural groundwater supplies using man-made conveyances such as infiltration basins or injection wells.
- (i) Saline water intrusion barriers – Injection of water into a fresh water aquifer to prevent the intrusion of salt water.
- (j) Agricultural – Water used for commercial agricultural production where \$1000 or more of agricultural products were sold, or normally would have been sold, during the year.

3.1.4 DEMAND SECTORS IN ADDITION TO THOSE LISTED IN WATER CODE

The water demand sectors below, though not specifically listed in, nor required by the water code, can help some agencies account for the entirety of their demand.

- Environmental – Water used for a managed environmental use to improve an environmental condition. (derived from CWP)
- Long Term System Storage- If system storage (groundwater or surface water) is greater at the end of the year than at the beginning, it indicates that water has entered the distribution system but has not been delivered to customers.
- Other Non-Revenue Water – This may include unbilled, authorized consumption, such as water used for firefighting, line flushing, and other uses that do not generate revenue. For purposes of UWMPs, distribution system water loss is not reported in this category, but is reported separately (see section 3.2).
- Other – Any water demand that does not fall into a sector defined above. When using the “Other” category for a water use sector, the agency should include a narrative description of that water use category (i.e., mixed-use).

Table 3-1 Potable Water Use by Sector

Water Use Sector		2010				2015				2020				2025		2030		2035		2040	
		No. of Metered Accounts	Metered Use (AF)	No. of Non-Meters Accounts	Non-Metered Use (AF)	No. of Metered Accounts	Metered Use (AF)	No. of Non-Meters Accounts	Non-Metered Use (AF)	No. of Metered Accounts	Metered Use (AF)	No. of Non-Meters Accounts	Non-Metered Use (AF)	No. of Metered Accounts	Metered Use (AF)	No. of Metered Accounts	Metered Use (AF)	No. of Metered Accounts	Metered Use (AF)		
Single family																					
Multi-family																					
Commercial																					
Industrial																					
Institutional/Governmental																					
Landscape																					
Agriculture																					
Other (Define)																					
Distribution System Losses			Optional				Optional														
Groundwater Recharge																					
Saline Barrier																					
Long Term Storage (opt)																					
Other Non-Revenue Water (opt)																					
Environmental (opt)																					
Subtotal		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Table 3-1 Potable Water Use - Retail

Reporting Year

Recommended

- Include a narrative description of how demand projections are estimated.
- Agencies are not required to use any particular method for estimating projected water uses. Agencies may consider listing any documents used to estimate projected demands.
- Provide a narrative description of water sectors that differ from the water code, i.e., single family and multi-family are combined as “residential”.

3.2 Distribution System Water Losses

CWC 10631(e)(1) and (2)

Quantify, to the extent records are available, past and current water use, and projected water use (over the same five-year increments described in subdivision (a)), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:...(J) Distribution system losses

CWC §10631 (e)(3)(A) *For the 2015 urban water management plan update, the distribution system water loss shall be quantified for the most recent 12-month period available. For all subsequent updates, the distribution system water loss shall be quantified for each of the five years preceding the plan update.*

(B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.

Distribution system water losses (also known as real losses) are the physical water losses from the water system and the utility’s storage tanks, up to the point of customer consumption.

The 12 month period used for reporting distribution system water loss must be the same 12-month period used for system demands.

GUIDANCE PENDING

3.3 Water Savings from Codes, Standards, Ordinances, or Transportation and Land Use Plans

CWC §10631 (e)(4)(A) If available and applicable to an urban water supplier, water use projections may display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area. (B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following: (i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

Include a statement indicating the extent that water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Projections that do not account for these savings shall include a statement to that effect.

Recommended

GUIDANCE PENDING

Water Savings from Codes, Standards, Ordinances, or Transportation and Land Use Plans are also known as passive savings.

Table 3-6 Savings from Codes, Standards

Table 3-6 Passive Savings
<i>PENDING GUIDANCE</i>

Recommended

- Include completed Table 3-6: Passive Savings.

- Indicate the extent that the water use projections in Table 3-1 have incorporated estimated savings from codes, standards, ordinances, or transportation and land use plans.

3.4 Coordination between Retailers and their Wholesalers

CWC 10631(k) Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available.

Retail agencies that receive a water supply from one or more wholesalers are required to provide water use projections to the wholesaler(s) of the retail agency's projected water use, from that source, in five year increments for 20 years, or as far as data is available.

Providing these projections allows both the retail and wholesale agencies to better plan for expected allocations.

3.5 Water Use for Lower Income Households

CWC 10631.1(a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

California Health and Safety Code 50079.5 (a) "Lower income households" means persons and families whose income does not exceed the qualifying limits for lower income families... In the event the federal standards are discontinued, the department shall, by regulation, establish income limits for lower income households for all geographic areas of the state at 80 percent of area median income, adjusted for family size and revised annually.

Water agencies are required to include the projected water use for lower income households in their projected water demands.

Estimate the lower income water use projections for single-family and multi-family housing units identified in the housing elements of the general plans applicable to the water supplier's service area.

Verify that the expected water use for low income housing, as estimated above, has been included in the projected water demands.

A lower income household is defined as a household with an income limit of 80 percent of area median income, adjusted for family size.

3.6 Climate Change (Optional)

Recommended

Include a narrative summary of the section "Water Demand" found in the Climate Change Vulnerability Assessment, Appendix XX.