

Simplified California Urban Water Service Area Population Methodology

Developed for the purpose of implementing the
State Water Resources Control Board Emergency Drought Regulation
(Government Code 11346.1 and 11349.6)

October 2014

Introduction:

This simplified population methodology was prepared by the Department of Water Resources (DWR) at the request of the State Water Resources Control Board (Board) to provide general guidance in estimating water service area population for the Board's Emergency Drought Regulation. This method is not intended to replace DWR's Methodology 2 from the Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (Department of Water Resources, 2010) for the purposes of SBX7-7 calculations and compliance.

The simplified approach prepared for the SWRCB in this document provides two methods for calculating water service area population. Suppliers whose water service area substantially matches a municipal area are directed to use the California Department of Finance population estimates for that municipality. Alternatively, a "persons per residential connection" method is provided to extrapolate population estimates from 2010 census data for suppliers whose water service area does not match a municipal area.

Part I: Determine Service Area Match to the Municipal Area

Using Geographic Information Systems (GIS) or other mapping tool, determine the overlap between the water service area and the municipal area to which water is provided.

- The area used for calculating the water service area population shall be the same area for which water production was reported.
- If there are areas within the water service area that are not served by the supplier (i.e., private wells, other water supplier) the map of the water service area shall exclude that area.

For water agencies that do not have mapping capabilities:

- The California Environmental Health Tracking Program of the California Department of Public Health has a *Drinking Water Systems Geographic Reporting Tool*. Water suppliers using the tool can map water system boundaries on line and then download the mapped file. The tool is available at www.ehib.org
- Other entities, such as water wholesalers, local council of governments, or consultants, may be able to provide assistance with GIS mapping and service area population calculations.

Part II: Determine Population Method

1) Water Service Area Matches Municipal Area

If the water service area substantially matches the municipal area (95% or greater overlap for both the service area and municipal area), the water supplier may use the California Department of Finance (DOF) population estimates, available at the following link:

<http://www.dof.ca.gov/research/demographic/reports/estimates/e-4/2011-20/view.php>

***NOTE:** Suppliers may choose to modify DOF population estimates if there are small areas (less than 5%) within the city (or census designated place) that are not served by the supplier or small areas outside the city (less than 5%) served by the suppliers.*

2) Water Service Area Does Not Match the Municipal Area

If the water service area does not substantially match the municipal area (less than 95% overlap for both the water service area and municipal area), the water supplier should estimate service area population using either:

- Private vendor population software
- “Persons per Residential Connection” (detailed below).

“PERSONS PER RESIDENTIAL CONNECTION” POPULATION METHOD

STEP 1: Determine 2010 Census Year Population

1. Calculate the 2010 service area population using GIS by overlaying the water service area map on the census block map for that area. Water service area population must be calculated using the census block data, the smallest census unit.
2. For census blocks split by the water service area boundary, water suppliers may determine whether or not the blocks’ population should be included based upon either the area or the population distribution within the boundary. This determination should be based on a detailed examination of each individual block.
 - Area: If half or more of the census block area is within the water service area, the water supplier should include it in its population calculations. Otherwise, the block should be excluded from the population calculations.
 - Population Distribution: If half or more of a census block’s population is within the service area, the water supplier should include it in its population calculations. Otherwise, the block should be excluded from the population calculations. .
3. Water suppliers whose service area matches a census designated place may use the census data for its 2010 population.

STEP 2: Calculate “Persons per Residential Connection” in the 2010 Census Year.

1. Using water supplier billing records, determine the number of active residential connections that were served by the supplier in 2010 (multi- and single family combined).
2. Divide the 2010 population by the 2010 number of active residential connections.

3. The result is “Persons -per-residential- connection” for the 2010 census year.

STEP 3: Estimate Population for Non-Census Years

1. Calculate the number of residential connections (multi- and single family combined) for the non-census years, i.e., 2013 and 2014.
2. Multiply the number of residential connections for the non-census year(s) by the “Persons per Residential Connection” for the 2010 census year.
3. The result is the estimated population for the non-census year(s). See example table below.

A	B	C	D
Year	# Residential Connections For Non-Census Years <i>(from agency records)</i>	Persons per Residential Connection Census Year <i>(from Step 2)</i>	Estimated Population for Non-Census Year $(B) \times (C) = (D)$
2013	15250	3.7	56425
2014	15300	3.7	56610

Note:

Water suppliers who serve multiple service areas that are not contiguous should estimate population separately for each service area and then add the populations from each service area to calculate the water suppliers’ total population. Investor owned utilities should use the same organization of service areas as was used for the 2010 urban water management plans. <http://www.water.ca.gov/urbanwatermanagement/2010uwmps/>

For assistance or additional information, please contact:

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