

Apr 6, 1988

Procedure for Calculating Seasonally Adjusted
Water Service Area Population

The Department of Water Resources municipal conservation program for Active Management Areas combines population data with annual pumpage data to calculate a daily gallon per capita (GPCD) rate for each regulated municipal water provider. This rate is recalculated annually to gauge progress toward a target gpcd rate. The population number that is used is based on the number of housing units with active accounts on July 1 of each year. The number of housing units is then combined with a census derived person per housing unit (PPHU) figure to arrive at the service area population. This population number does not take seasonal population into account. For some water providers this poses a problem, as seasonal residents form a large part of the population and may use substantial amounts of water, raising the GPCD rate. To remedy this problem, the department has developed a seasonal population adjustment procedure which is described below.

The procedure for calculating a seasonally adjusted population involves determining the number of units in the service area that are vacant on a full-time equivalent (FTE) basis. This number is then subtracted from the total number of housing units to get the number of occupied households. When multiplied times the persons per housing unit factor for occupied households from the most recent census, the seasonally adjusted service area population is generated.

The procedure involves two separate sets of calculations, one for single family housing units and one for multifamily housing units. For single family units, the number of vacant months is calculated using water service data and a questionnaire. For multifamily, a market vacancy rate and survey vacancy rate are used to determine the total number of units that were actually vacant. The result of the calculations is the number of units that are actually vacant as opposed to those that are seasonally vacant. The format of any survey or questionnaire used to gather data must receive prior approval by the Department. Permission to deviate from the procedure to allow other data sources will be given on a case-by-case basis.

The population number that is generated by this process will be higher than the census derived population, since it takes seasonal population into account. However, it will be lower than the maximum population for the area, since many units are not occupied year round. Water service data can be used to help determine occupancy rates if zero delivery month data is available. Using this method, units with significant landscaping will be counted as occupied even if the owners are elsewhere.

Use the attached form to calculate the seasonally adjusted population. Instructions are given for calculating an adjusted

population with either one PPHU factor available from the latest census or a separate PPHU factor for single and multifamily housing from the latest census.

The following terms are defined in order to clarify the instructions on the seasonal population calculation form:

Housing Unit⁺: a house, apartment, group of rooms, or single room, occupied as separate living quarters, or vacant, intended for occupancy. Separate living quarters are those in which the occupants live and eat separately from other persons in the building, and have direct access from the outside of the building or through a common hall. The occupants may be a single family, one person living alone, 2 or more families living together, or any other group of related or unrelated persons who share living arrangements. Both occupied and vacant housing units are included in the housing inventory, except that tents, caves, boats, vans, and the like are included only if they are occupied and are the occupant's usual place of residence. Vacant mobile homes are included provided they are intended for occupancy on the site where they stand. Vacant mobile homes on dealer's sales lots, at the factory, or in storage lots are excluded from the inventory.

Permanent Resident: A person who lives in a housing unit considered to be his or her usual place of residence.

Seasonal Resident: A person who stays in a housing unit not considered to be his/her usual place of residence. (This definition would exclude inmates of prisons, and guests of motels, hotels, campgrounds, and RV parks).

Persons Per Occupied Housing Unit: The total population on July 1 of any census year divided by the number of occupied housing units on July 1 of that year.

Market Vacancy Rate: The percent of unoccupied housing as opposed to total housing in an area based on housing market research. For information sources, contact your Active Management Area office.

Multifamily Dwelling Unit: Any housing unit that is connected to other units by a common wall. Examples of multifamily residential structures include duplexes, triplexes, fourplexes, condominiums and apartment complexes. Multifamily units may be individually metered and care should be taken not to double count these units as they may appear in both the single and multifamily categories in your billing records.

⁺ As defined by the U.S. Census

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Single Family Dwelling Unit: Any housing unit that is not connected to other units by a common wall. (In some cases mobile home parks may be classified as multifamily. Contact your Active Management Area office if you have a question as to the proper classification of a housing unit).

Vacant Month: Any month in which a dwelling unit is not occupied.

Zero Delivery Month: Any month in which the waterservice to a single family hookup is 748 gallons (1 ccf) or less. (For example, if a family was out of town for 3 months and they did not have significant landscape water use, this would result in 3 zero delivery months).

SEASONALLY ADJUSTED POPULATION CALCULATION PROCEDURE

Single Family Vacancy Rate Calculation

1. Number of single family units in service area:
(Unit count should be based on July 1 of the year in question). _____
2. Total number of vacant months from survey of single family units:
(Attach sheet indicating sample size and relevant statistical data) _____
3. Total number of zero delivery months from billing records: _____
4. Average annual vacant units (Divide #2 by 12): _____
5. % of single family units vacant (Divide #4 by #1, multiply X 100) _____ %
6. Average annual zero deliveries (Divide #3 by 12): _____
7. % of single family units vacant based on zero deliveries (Divide #6 by #1, multiply X 100): _____ %
8. Find the difference between #5 and #7. _____ %
9. If #8 is 5 or less, average #5 and #7. This is the average single family vacancy rate: _____ %
10. If #8 is greater than 5, use the percentage from #7. Explain the discrepancy between #5 and #7 in writing. _____
11. Multiply the vacancy rate from #7 or #9 (whichever applies) times the number of units from #1: This is the full-time-equivalent (FTE) vacant single family units: _____

Multifamily Vacancy Rate Calculation

12. Multifamily units served by individual meters on each unit: _____
13. Multifamily units served by master meters: _____
14. Total multifamily units (Add #11 & #12): _____

Single Family Dwelling Unit: Any housing unit that is not connected to other units by a common wall. (In some cases mobile home parks may be classified as multifamily. Contact your Active Management Area office if you have a question as to the proper classification of a housing unit).

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15. Market analysis vacancy rate for multifamily in your service area (yearly average):

_____ %

16. Vacancy rate for multifamily based on survey of managers in your service area (yearly average): (Attach sheet indicating sample size and relevant statistical data)

_____ %

17. Find the difference between #15 and #16. If the difference is greater than 5, explain the discrepancy in writing, and use whichever rate you find most credible.

_____ %

18. If #17 is equal to or less than 5, find the average. This is the average multifamily vacancy rate:

_____ %

19. Multiply the vacancy rate generated in #16 or #18 (whichever applies) times the total units from #14. This is the number of vacant multifamily units on a full-time equivalent (FTE) basis:

Final Calculation

20. If separate occupied PPHU information is available for single family and multifamily housing in your service area go to #21. If only one PPHU is available go to #26.

21. For single family, subtract #11 from #1 to get the FTE occupied units:

22. Multiply times the persons per occupied housing unit for single family from the most recent census. This is the adjusted single family population:

23. For multifamily, subtract #19 from #14 to get the FTE occupied units:

24. Multiply #22 times the persons per occupied housing unit for multifamily from the most recent census. This is the adjusted multifamily population:

25. Add the results of #22 and #24. THIS IS THE ADJUSTED SERVICE AREA POPULATION:

26. Add the result of steps #11 and #19 to get the total FTE vacant units in the service area:

27. Add #1 to #14. This is the total number of units in the service area

28. Subtract #26 from #27 to find the FTE occupied households:

29. Multiply the result of #28 times the persons per occupied dwelling unit from the most recent census. THIS IS THE ADJUSTED SERVICE AREA POPULATION:

26. Add the result of steps #11 and #19 to get the total FTE vacant units in the service area:

27. Add #1 to #14. This is the total number of units in the service area

28. Subtract #26 from #27 to find the FTE occupied households:

29. Multiply the result of #28 times the persons per occupied dwelling unit from the most recent census. THIS IS THE ADJUSTED SERVICE AREA POPULATION:
