

Guidance on Per Capita Water Use: Uniform Definitions and Performance Measures

March 3, 2008

Summary

The Department and the water management districts established uniform statewide methods of measuring per capita use of water in public water supply. Two different per capita measures are to be used consistently statewide for assessing water conservation performance, reporting, and program evaluation and for public communication:

- Uniform Gross Per Capita.
- Uniform Residential Per Capita.

The uniform per capita method(s) should be used at the state, district, county, and utility levels. Water management districts are expected to continue using additional per capita measures for particular tasks in water use permitting, determining regulatory compliance, and water supply planning.

Applications of Per Capita

Measurements of per capita are used for numerous water management purposes. For example:

Water Use Planning and Forecasting

- Regional water supply plans (especially water resource demands and treatment capacity needs, for sub-regions and individual utilities or service areas)
- Assessing water use patterns in particular sectors, such as residential

Water Use Permitting

- Direct permit requirement for a per capita maximum, or for per capita “goals” or “guidelines”
- Setting thresholds for additional water conservation evaluation or effort (requiring water use audits for above-average per capita use, etc.)
- Demand projections

Water Conservation

- Financial assistance for water conservation projects (calculating or verifying savings potential)
- Providing an input to the *Conserve Florida Guide*

WMD Use Reports and Program Evaluation

- WMD self-evaluation
- Annual WMD water use reports
- Annual reports to DEP

Public Communication

- Executive-level presentations
- Outreach to other audiences, including the general public

Research and Analysis

- Identifying the determinants of per capita use of water

Preventing Misunderstanding of Per Capita Water Use Measures

When any per capita measure is used, it should be accompanied by an explanation of its purposes, what it includes and excludes, and ways to achieve additional accuracy if it is desired to do so. The uniform per capita measures set out in this Guidance Document, for example, do not account for possible differences between communities in the amount of water used in common area irrigation systems, or for the amount of water supplied by domestic irrigation wells. The methods do account for some, but not all, of the seasonality differences between utilities.

Uniform Gross Per Capita Measure

Uniform Gross Per Capita is defined as:

$$\frac{\text{Utility Service Area Finished Water Use}}{\text{Utility Service Area Residential Population}}$$

where

- Utility Service Area Finished Water Use is the sum of finished water (Withdrawals + Imports – Exports – Treatment Losses) used by all sectors (residential, industrial, commercial, etc.) served by a utility, and
- Utility Service Area Residential Population is the number of dwelling units served, multiplied by an estimate of persons per household.

(See the Glossary for definitions of the terms making up the overall measures.)

Uniform Residential Per Capita Measure

Uniform Residential Per Capita is defined as:

$$\frac{\text{Utility Service Area Finished Water Used by Dwelling Units}}{\text{Utility Service Area Residential Population}}$$

where

- Utility Service Area Finished Water Use by Dwelling Units is the sum of finished water used by all dwelling units served by a utility.
- Utility Service Area Residential Population is the number of dwelling units served, multiplied by an estimate of persons per household (exactly the same as for the Uniform Gross Per Capita measure)

Implementing and Reporting Per Capita Measures

Changing to the uniform methods will require some time to become fully functional, including the dedication of additional resources by some water management districts and by permittees. The best available data will improve over time. Implementation in various programs will occur according to the following schedule:

District Water Supply Assessments	July, 2008 (for Uniform Gross Per Capita, Residential in next update after that)
Annual Water Use Reports (for WMDs that prepare them)	2009
Consolidated Annual Reports	March, 2009
Strategic Plan Updates (Annual)	2009 Update
Regional Water Supply Plans	July, 2009, or next update.
Conserve Florida Guide	July, 2009
District Water Management Plans	2010, or next update.
Water Use Permitting	Schedule to be determined.

The water management districts can continue to use other variations of per capita measures, where necessary for particular purposes, such as regulation, demand projection, or resource assessment. However, for basic public communication purposes, the Uniform Gross Per Capita and Uniform Residential Per Capita measures should be used.

Glossary

Exports: Water exported/sold to other suppliers (information available from water use permittee).

Imports: Water imported/bought from another supplier (information available from water use permittee, preferably the supplying permittee).

Treatment Loss: Amount of water diverted during treatment and not delivered to users. Used typically for R/O or sand filtration (information available from water use permittee).

Utility Service Area Finished Water Use: Sum of finished water (withdrawals + imports – exports – treatment loss) used by all sectors (residential, industrial, commercial, etc.) served by a utility.

Utility Service Area Residential Population: Number of dwelling units (not connections) supplied by the utility multiplied by an estimate of persons per household. The estimate of the persons per household preferably should be made using Census block data at the service area level. If not available, the estimate should be made at the city or place level until the block level data can be used.

Withdrawals: Ground water and surface water withdrawals (information available from WMD and water use permittee)

Irrigation (Common Areas): Irrigation of landscaped areas held in common by more than one party and not attributed to individual residential connections. Where potable water is used to irrigate common areas, the use is usually included in the utility permit. Some permits may have recreation/aesthetic permits for common area irrigation, in which case, it should not be included in the gross use. Irrigation of common areas should be included in gross use and per capita calculations (unless it is reuse).

Irrigation (Domestic Wells): Landscape irrigation by private domestic wells rather than water supplied by a Public Water Supply system. Although important, data limitations usually prevent domestic well irrigation from being included in the calculation. Estimates of domestic irrigation well uses are made, however, for water supply planning purposes.

Irrigation Meters (Common Area): The measurement of water from public water suppliers used for irrigation when it is separately metered for that purpose. This water provided by the public water supply system is included in the calculation of water use (unlike domestic wells).

Irrigation Meters (Residential): Water metered separately for irrigation by residences and supplied by the public water supply system (not including reclaimed water). It is included in the calculation of per capita.

Seasonality Adjustments: The variation of water use over the course of year as permanent and transient population varies. The methods in this Guidance Document account for this by making estimates of “dwelling units” and “persons per household” based on Census estimates (updated in necessary). These estimates relate to “permanent population” and do not include people that may be present for an extended period but identify their permanent residence as elsewhere. Nor are tourists included in the estimate of persons per household. More refined seasonality adjustments can be made, at the option of a water management district.