

## 10. Per Capita Water Consumption

**Target:** Per Capita water usage is tracked year to year

**About this indicator:** Per capita water consumption is calculated from the total island wide water consumption divided by population. This indicator reports data from three types of water users Group A public water system (PWS) users, Group B PWS users and individuals.

**Influencing factors:** Weather conditions - amount of precipitation and average daily temperature for a given year. Limited water usage data available because not all water users report their usage.

**2010 Target:** Per capita water usage is calculated per year

**2010 Finding:** 2010 per capita water usage ~ 80 gallons per day

**2010 Status:** 2010 Per capita water use of 80 gallons per day is based on an average of the two largest group A PWS per capita data (70 and 90), Table 1.

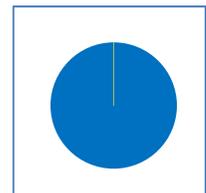
Table 1. 2010 Per Capita Data shown as gallons per day based on the two largest Group A public water systems on Vashon-Maury Island. NOTE\*: both systems have non-residential connections and residential equivalence units are shown – average population per connection is 2.3. GPD: gallons per day.

2010 Data		
User	Group A PWS - H	Group A PWS - 19
Total - Gallons	46,578,890	107,138,197
Population served	1,830	2,641
Residential usage per connection - GPD	160	208
Per Capita - GPD*	70	90
Averaged Per Capita - gallons per day (GPD)	80	

**2001-2010 Target:** No long term (10 or more years) increase in per capita water consumption.

**2001-2010 Assessment:** Per capita usage – 83 GPD from 2001-2010

**2001-2010 Status:** Per capita water consumption is estimated to be 83 gallons per person per day from 2001 to 2010. The per capita data is estimated from the total usage divided by the population served to provide a per person usage value. Selected per capita usage data are shown in Figure 1.



## Technical Notes Per Capita Water Consumption

**Data source:** The data for this indicator comes from Group A public water systems (PWS), Group B PWS, and individual water users. Group B PWS are not required to report their usage and individual wells do not typically have meters to assess their usage. Both of these user groups have a small subset that do report their usage. However, this subset of users and their usage data are not totally representative of the entire user group.

**Collection frequency:** Group A PWS are required to keep track of their water usage. Recent changes require more Group A PWS to report their usage annually. The other water users are not required to report their usage. Water use data has been requested from a variety of users.

**Methods for analysis:** Total Annual water consumption is divided into a daily measure. This daily usage is divided by the number of people per household (2.3 – 2010 US Census data). For PWS with data, the total water use is divided by the number of connections. This usage per connection is divided by the population per connection value. This population per connection is a calculation of reported population served divided by the number of connections. The range of per capita usage for Group A PWS is 45 to 140 gallons per person per day with the average being 83 gallons per person per day. Eight individual well owners have installed a meter and reported usage data. This subset of users has a range of per capita from 40 to 150 gallons per person per day from annual usage totals with the average being 100 gallons per person per day.

**Data Reliability and Quality:** The data quality of this indicator can be good when reported from purveyors. Estimates are based on a small subset of data users and compared to other published data. The reliability is fair based in the recent participation and should improve due to changes in reporting requirements for most Group A PWS.

**Data Reference:** VMI Water Purveyors; US Census Data – 2010; various King County program including Groundwater, UTRC; and VMI Volunteer Monitoring Program who self report usage.

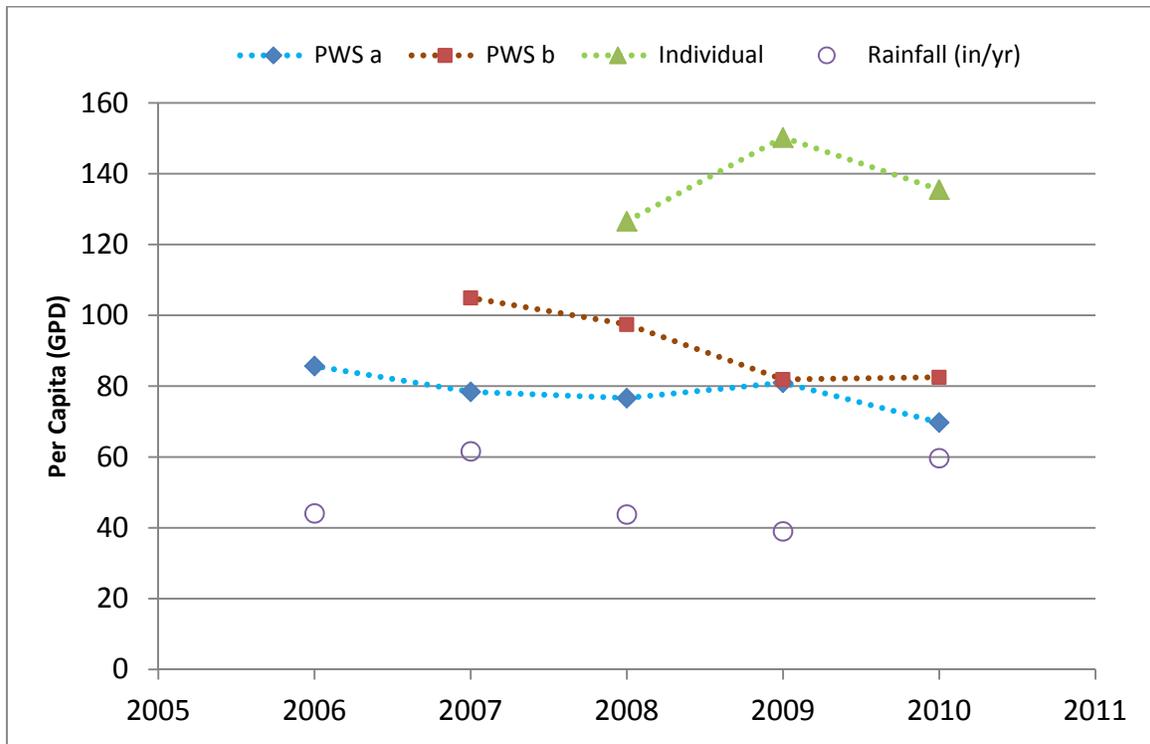
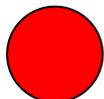


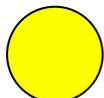
Figure 1. Example of per capita water usage by user type – Group A Public Water System (PWS); Group B PWS and individuals. One example of each type is shown to highlight annular variation. This data was calculated based on annual total usage divided by the number of people per household and reported as a daily usage – gallons per person per day (GPD). Rainfall for the North Vashon gauge also shown as inches/year. Data collection of usage for selected Group B PWS and individual well users began in 2007 and 2008, respectively.

## Legend

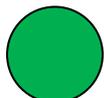
### 2010 Finding



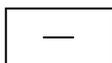
**Poor Conditions:** Reported data are above Maximum Contaminant Level (MCL) and/or fails to meet the state standard or criteria for a given indicator; needs improvement.



**Fair Conditions:** On average, data fell between the standard or criteria for “poor” and “good” and may be variable.

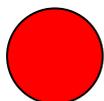


**Good Conditions:** Reported data are below MCL and/or meet the state standard or criteria for a given indicator.



**No Annual Assessment**

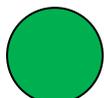
### 2001-2010 Status



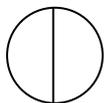
**Downward Trajectory:** 2001-2010 data shows decreasing or worsening conditions



**No Change:** 2001-2010 data shows no change with time.



**Upward Trajectory:** 2001-2010 data indicate increasing or improving conditions



**Insufficient Data:** reported data has too few data points and/or too short a period

