WATER USE CALCULATIONS

**Maximum Applied Water Allowance (MAWA)**

\[
\text{MAWA} = (\text{ETo})(0.62)[(0.7 \times \text{LA}) + (0.3 \times \text{SLA})]
\]

- **ETo** = Reference Evapotranspiration (inches per year)
- **0.62** = Conversion Factor (to gallons)
- **0.7** = ET Adjustment Factor (ETAF)
- **LA** = Landscape Area including SLA (square feet)
- **0.3** = Additional Water Allowance for SLA
- **SLA** = Special Landscape Areas (square feet)

**Estimated Total Water Use (ETWU)**

\[
\text{ETWU} = (\text{ETo})(0.62)[((\text{PF} \times \text{HA})/\text{IE}) + \text{SLA}]
\]

- **ETo** = Reference Evapotranspiration (inches per year)
- **0.62** = Conversion Factor (to gallons)
- **PF** = Plant Factor from WUCOLS
- **HA** = Hydrozone Area (square feet)
- **IE** = Irrigation Efficiency (minimum 0.71)
- **SLA** = Special Landscape Areas (square feet)

What is the maximum water use that DWR allows?*

How much water is your current design estimated to use?


Evapotranspiration, Maximum Applied Water Allowance, and Estimated Applied Water Use formulas per the California Department of Water Resources (DWR); [http://www.water.ca.gov/wateruseefficiency/landscape/](http://www.water.ca.gov/wateruseefficiency/landscape/)
WATER USE CALCULATIONS (estimated)

MAWA = 5.55 acre feet/year
\[= (39.01)(0.62)[(0.7 \times 106821) + (0.3 \times 0)]\]
= 1,808,516 gallons/year
= 2,418 hundred cubic feet/year

ETWU = 8.91 acre feet/year
Shrubs = (39.01)(0.62)[((0.5 \times 57774.6)/0.9) + 0)]
= 776,304 gallons/year
= 1,038 hundred cubic feet/year
= 2.38 acre feet/year

Turf = (39.01)(0.62)[((0.8 \times 82507)/0.75) + 0)]
= 2,128,566 gallons/year
= 2,845 hundred cubic feet/year
= 6.53 acre feet/year

Fill this building with 6.5 feet of water
-or-
2.7 Olympic Pools

Estimated 60% Overage
ETWU does not comply with MAWA

1 gallon = 0.001336806 CCF (hundred cubic feet); 1 gallon = .00000306888 AF (acre feet)
CSU CO Building = 0.8562 acres; Olympic Swimming Pool = 660,000 gallons
WATER USE CALCULATIONS (actual)

2014 = 23 acre feet
2013 = 26 acre feet
2012 = 21 acre feet
2011 = 20 acre feet
2010 = 22 acre feet

(in plain english please)

Fill this building with 27 feet of water
-or-
11.3 Olympic Pools

Why is the actual water used so high?

Metering
• This number presumably includes the building water
• Building vs landscape metering
• Landscape area vs property area vs actual landscape being watered

CSU CO Personal estimated at 582 via http://www.calstate.edu/search_find/personnel/Default.aspx
Why is the actual water used so high?

Metering
- This number presumably includes the building water
- Building vs landscape metering
- Landscape area vs property area vs actual landscape being watered

What to do?