



LANDSCAPE IRRIGATION WATER BUDGET CALCULATOR INSTRUCTIONS

Access the Calculator at: www.roseville.ca.us/savewater

Click on the “Downloadable irrigation budget calculator” box.

ETo Calculator: This chart represents evapotranspiration for Reference Evapotranspiration (ETo) Zone 14, which is accurate for Roseville, CA, and described as: Mid-Central Valley, Southern Sierra Nevada, Tehachapi, & High Desert Mountains, according to the California Irrigation Management Information System (CIMIS) by the California Department of Water Resources at: <https://cimis.water.ca.gov/>.

ETo information can be changed to represent other areas by using this Zone Map link: https://cimis.water.ca.gov/App_Themes/images/etozonemap.jpg

ET and ETo Definitions:

Evapotranspiration is an important process in the water cycle because it is responsible for 15% of the atmosphere's water vapor. Without that input of water vapor, clouds couldn't form and precipitation would never fall. **Evapotranspiration** is the combined name for the processes of evaporation and transpiration.

Reference Evapotranspiration (ETo) is derived by measuring weather conditions and estimating the ET of a **reference** plant. In California, this is a standardized planted surface of well-maintained cool season turf.

How to Use this Calculator:

1. **ONLY MODIFY WHITE CELLS** (Should you accidentally go into a colored cell, press the undo arrow once to restore the formula in that cell).
2. Read the section above and verify if CIMIS Zone 14 is the applicable zone for the data shown. If not, use the CIMIS map link to update ETo data.

ETo Calculator:

3. Input the total irrigated square footage for your property, in column C. The numbers in Orange will automatically calculate.

Landscape Factor Adjustments:

4. The landscape factor located in column E is populated as 0.5, which is an average consumptive use of a typical yard.
The landscape factor is a number that represents the water needs as a % of 1 with 1 being the highest possible water need.
A yard with only turf could have the landscape factor changed within the range of 0.7 to 1.0.
A moderate water-use yard will be between 0.4 and 0.6.
A low water-use yard will be between 0.1 to 0.3.
A very low water-use yard will be between 0 to 0.1.

The orange numbers represent the monthly usage appropriate for your irrigated area in either gallons or cubic feet.

Monthly Flow Calculator:

5. Input Station number and Location / Description for each Station in columns J and K. Click on yellow cell above Location / Description for a drop-down list to Select Month Performing Test.
6. Locate your meter and conduct a flow test, one zone at a time. It must be accurate to the minute for each zone.
7. Input the minutes of the test in column L.
8. Record the water meter start and stop for each zone in columns M & N. The flow rate will auto calculate in CFM (Cubic Feet per Minute) and GPM (Gallons Per Minute) in columns O & P. The flow rate will remain the same for the following months unless you modify your irrigation system.
9. Find Zone Runtime Per Week (in minutes) as currently programmed from your irrigation controller for Zone 1 and enter into in column Q. Example: Zone 1 runs 4 days a week, twice a day for 5 minutes. The total would be 40 minutes per week for zone 1.
10. Enter the weekly total for all other zones in column Q. Note: Ensure that the program in your controller does not have additional time set to unused or non-functioning zones.
11. **Results!**

The spread sheet has calculated monthly totals in gallons and cubic feet. Spread sheet can be updated each month by changing only the Month from the drop-down in cell K10 and the run time minutes in column Q. If you have a Smart Controller, enter the schedule for July, and it will adjust the schedule to the weather for you. Note: Monitor your landscape to ensure that the Smart controller's schedule is providing adequate water to your plants.

Compare Your Water Use to the Eto Numbers

12. The yellow numbers will be populated from the totals of the Monthly Flow Calculator. Orange numbers automatically will be populated in the Compare Your Water Use to the Eto Numbers chart. The cells P27 & 28 and !27 & 28 will turn green if you are within your water budget, or red if you are exceeding your budget.