

Stop #4: Evapotranspiration Adjustment Factor Study

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California's population was 37 million in 2005 and is expected to reach 45 million by the year 2020. This projected increase, coupled with a severe multi-year drought and a statewide water distribution problem, necessitates further conservation of an already limited water supply. Landscape irrigation uses a significant amount of water. Residential water use totaled 5.9 million acre feet (MAF) in 2005. Of this, approximately, 54 percent (3.2 MAF) was used outdoors.

Increasing the use of practices leading to greater water use efficiency of large-acreage landscapes is consistent with goals of the CALFED Bay-Delta program to maximize existing water resources for assuring a steady and reliable water source for the future of California. While much progress has been made, a report issued by the California Urban Water Agencies entitled 'Water Conservation in Landscaping Act: A Statewide Implementation Review' indicated that maintenance was "the weakest link in the design, installation and maintenance scenario". The report recommended on-site auditing and greater education for contractors.

California Assembly Bill 1881 resulted in California enacting a law on January 1, 2010 reducing the Evapotranspiration Adjustment Factor (ETAF) from .8 to .7 in new landscapes over 2,500 square feet, mandating further water conserving measures in urban landscapes. Several 'best management practices' have been developed within UC ANR that can help the landscape industry maintain healthy landscapes and irrigate at or below the newly instated .7 ETAF, including: proper plant selection; proper irrigation system design and installation; hydrozoning; proper irrigation scheduling; mulching; and, regular maintenance of irrigation systems.

The goal of our California Department of Water Resources (DWR) project is to reduce water waste and increase adoption of .7ETAF by the landscape industry by setting up 30 large demonstration sites at publically and commercially maintained landscape sites that exemplify research-based 'best management practices.' The sites represent a variety of ornamental plants with varying evapotranspiration rates growing under a wide array of plant densities and microclimates.

***Maximum Allowable Water Allowance (MAWA) = (ETo) (0.7) (LA) (0.62)**

ETo = Reference Evapotranspiration (inches per year)

0.7 = ET Adjustment Factor

LA = Landscaped Area (square feet)

0.62 = Conversion factor (to gallons)

*Maximum Applied Water Allowance = _____ gallons/year

Example of Maximum Applied Water Allowance (MAWA): Riverside, California

Hypothetical Landscape Area = 50,000 sq ft

MAWA = (ETo) (0.7)* (LA) (0.62)**

MAWA = (51.1) (0.7) (50,000 sq ft) (0.62)

MAWA = 1,108,870 gallons per year

*ET Adjustment Factor ** Conversion factor from inches to gallons