

# DOCKET

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To: California Energy Commission, Efficiency Committee Workshop

Subject: Comments and Recommendations related to landscape irrigation smart controllers

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Company background:

Alex-Tronix was founded in 1977 to manufacture energy and water efficient irrigation controllers with simple programming. For the drip or low volume agricultural irrigation market, we manufacture filter backwash controllers. Drip irrigation not only saves water, reduces the need for herbicides, but also saves a significant amount of pumping energy.

Alex-Tronix received a grant from the U.S. Department of Energy to develop energy efficient irrigation systems about 8 years ago. We have evolved since then to include landscape water conservation as part of our continuing mission. We currently manufacture non-ET based smart (SWAT tested) battery powered controllers. We are also developing add on devices that are compatible with any existing irrigation controller to make them smart and save landscape water.

Comments and recommendations:

Currently the irrigation industry has five approaches to automated landscape water conservation:

1. Self-contained smart irrigation controllers that are ET based that receive wireless ET data for a monthly service fee such as the Toro Intelli-Sense.
2. Controllers that require a weather station to calculate ET and make appropriate water schedule adjustments such as the Weathermatic SMART LINE and the Hunter ET System.

3. Controllers that have add-on devices that can make them smart such as the Rain Bird ET Manager and the Hunter Solar Sync.
4. Non ET based smart water controllers such as the Alex-Tronix Enercon Plus
5. Ground moisture sensors such as from Irrrometer

The current provision based upon Assembly Bill 1881 is that after a certain date, only smart controllers can be sold or purchased in California. While I support this position, the reality is that very few of the millions of California homeowners will immediately purchase new smart controllers on that date or soon thereafter. For years after the smart controller mandate goes into effect, only new housing and commercial developments or controllers that have failed will be replaced with smart controllers. While converting to smart controllers will theoretically save landscape water, the immediate real water savings will be minimal.

My recommendations for more effective landscape water savings is three fold:

1. I strongly urge the committee to not ignore the millions of existing non smart controllers that will remain in use for years in residences and commercial use after the mandate. To make this recommendation effective, I recommend adding a provision to allow the sale of add on devices that have been SWAT tested that can make existing controllers smart. This approach will remove many of the obstacles currently encountered with ET based smart controllers by allowing the homeowners to keep a controller they are already familiar with and reduce the initial and ongoing conversion costs. The EPA which had formerly not included add on devices for their Watersense labeling is now reconsidering that position and has asked the SWAT committee for its recommendations.

Another benefit to allow add-on devices is that this will create increased opportunities for landscape professionals to install these devices and at the same time upgrade existing systems, thereby creating new jobs and improving irrigation system efficiency.

A further benefit is that with increased participation from homeowners, more water will be saved sooner.

Finally, saving water will not only minimize runoff, which is not environmentally friendly, but reduce demand on pumping and water delivery, which should reduce pumping energy costs and eliminate or postpone expensive infrastructure improvements

2. In the “Final Regulation Text” of the Model Water Efficient Landscape Ordinance, dated February 9, 2009, in section 492.7 in the “Irrigation Design Plan” section, I agree that **new** systems installed should be with smart controllers as long as they are defined as weather based (or climatological based) irrigation controllers. This is the Irrigation Association’s definition of smart controllers, the SWAT committee’s, The Center for Irrigation Technology’s, and the EPA’s definition and the basis for rebate programs for most water districts. **I recommend that this definition is not altered or mis-interpreted by the DWR, or other state agencies, or water districts to limit smart controllers to ET based controllers.** I recommend that the definition of a smart controller be further modified follows: **“a smart controller or smart add on device is one that can adjust the irrigation schedule or station run times of an irrigation controller according to current weather conditions”.** Otherwise, all add on devices and other non ET based methods such as soil moisture sensors could be potentially excluded from sale in California. It would be counter-productive to limit weather based controllers to ET or forbid the sale of add-ons.

As an example of a non-ET but still weather based smart controller capability, the city of Indian Wells in the Coachella Valley did a one year study (2008) using the Alex-Tronix controllers along with the use of drip, new spray heads, and some artificial turf on a test site to determine how much water it is possible to save with a combination of water saving means. The water meter recorded results indicate a 75% landscape water savings from the previous year, and a 80% cost saving for Indian Wells. The cost savings is strictly with water, which does not include labor cost savings

that may be associated with not having to manually vary the irrigation controller settings throughout the year. This not to say that the controller alone can save 75% of the water, but this study does show the overall water saving that the Irrigation industry is capable of providing under near ideal conditions. Reduced pumping energy and delivery, maintenance, and environmental cleanup related cost savings may also add to the financial benefits of reduced water usage.

3. While the primary purpose of assembly bill 1881 is directed toward smart controllers and more efficient landscape water conservation systems, water rationing is an alternative approach to landscape water conservation. Some communities are now using this method. Because of the minimal impact of water conservation using its rebate program for smart controllers, the SNWA in Clark County Nevada is studying the use of add on devices that can assist homeowners comply with its mandatory watering schedules that not only save water, but distribute the water demand load throughout Clark County. Six hundred such devices are currently under evaluation as a more immediate water conservation measure, as well as the potential to save Southern Nevada from extremely high infrastructure cost upgrades. These add on non smart devices were added to existing controllers to limit irrigation to certain days of the week and certain times of the day depending upon the designated watering groups and the time of the year. An early report indicates that compliance to the SNWA mandatory watering schedules has increased from 20% to about 80% for those supplied with these add on devices.

#### Conclusion:

We should not ignore the millions of existing controllers, both residential and commercial, if we want real rather than theoretical immediate water conservation. This can be accomplished with add on devices that can make any existing controller smart. Finally, we should not limit automation to ET based systems. Non ET based smart controllers, ground moisture sensors, and automated water rationing are viable alternatives.

