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A New Era for Irrigation Controllers

By Lorne Haveruk – Water Management Services

“Water is the Kingdom’s most valuable resource, and its management and protection is of paramount importance,” said Abdullah Al-Hussayen, Saudi Arabia’s minister of water and electricity. “Unless highly efficient water usage practices can be developed and maintained in the West, it will not be possible to provide the water needed to sustain Western ecosystems, as well as population growth,” stated Shelley Berkley, D-Nev., during her introduction at the 108th Congress (speaking about the western United States).

Water is in short supply and high demand nearly everywhere throughout the world today. Water is looked upon as more valuable than oil; without it hard choices will have to be made. For many years water has been mistreated mainly due to wasteful practices. These practices now need to change. Complacency has taken hold “no need to worry there is lots of water” and promoted an attitude. It is for this reason that technology is here to do what humans will not. Enter the new era for irrigation controllers. They are SWAT and they are WBIC. These are both acronyms created to sum up what the new ET controllers can do to save water by utilizing technology rather than people. The concept of ET (evapotranspiration) has been around and in use on a larger scale for more than 15 years. The new era of controllers comes now, today, aimed directly at the residential market place; the millions of users of low water consumption that when grouped together, create the largest water users of all. “SWAT is a national initiative to achieve exceptional landscape water efficiency through the application of irrigation technology”, states the IA (Irrigation Association) website.

The major difference, and hopefully for many homeowners the reason to upgrade their existing controller to a SMART controller, will be not only the water savings which will help offset the cost of the upgrade, but much healthier plants, a beautiful garden, higher real-estate value, less damage to driveways and walkways from over watering and maybe even cleaner streams, rivers, lakes and oceans due to reduced run-off. When gas prices started to climb through the roof did you stay with old technology – the old gas guzzler – no! We have all traded in the old, over time, and upgrade to the new. When you know that your life or the lives of others depend on the water we save, wouldn’t the neighborly thing be to upgrade to the new technology? Sounds pretty harsh when the story is told this way.

SMART irrigation controllers reduce water use by **“watering with the weather – not by time”**. A SMART controller is fed information from an onsite miniature weather station, sensors, an ET signal sent via satellite to a paging source, or however else the more than fifteen (15) manufacturers of the new controllers have devised to get the information to the controller. ET is a number, say a quarter of an inch

(.25"), which represents how much water was used up, evaporated from around the plant or transpired from the plant's surface today. If we have a storage area (soil plus the roots are known as the root zone) which will hold one inch (1") of water (known as available water holding capacity) waiting for the plant and an irrigation system that can only supply a quarter inch (.25") per day, and - here's the cruncher - we say that the water in the soil cannot be depleted more than fifty percent (50%) - you can say that at this quarter inch (.25") daily loss rate we need to water every third day to keep the soil reservoir topped up.

SMART irrigation controllers have proven in pilot projects conducted during the past four years to reduce outdoor water use by responding to real weather conditions - if it's hot the controller waters, if it rained it stays off, if it's cloudy maybe it will postpone the watering until tomorrow or if the total amount of ET adds up to more than fifty percent (50%) it turns on. This is a rudimentary look into how they work, but they have proven to work admirably. A system priced in the six hundred dollar (\$600) range has proven to perform very closely to a full scale central control system with a full size weather station priced around twenty thousand (\$20,000) dollars, a remarkable achievement by the manufacturers who have produced some remarkable technology at rock bottom prices.

So who are the players and how do I get involved? Currently product is just ramping up so that these controllers will become more readily available in time. Some of the forerunners have had their product to market for over a year with the prototypes around for more than four years. The prototypes have been placed under an array of tests ensuring that if the controller passes the eight step test developed by the Center for Irrigation Technology (CIT), under the watchful eye of Ed Norum; they will work correctly once installed by a manufacturer certified installer.

To assist homeowners in water scarce areas, incentive programs are being created paying up to fifty percent (50%) of the cost of the upgrade. Others, like the San Diego County Water Authority, are offering a residential voucher incentive of sixty five dollars (\$65) per controller and a business voucher for thirteen dollars and thirty three cents (\$13.33) per active station up to forty eight (48) stations.

Some of the players that have made it onto lists for residential and/or commercial control systems, indicating eligible weather based irrigation controllers are, in no particular order: Accu Water, ET Water Systems, Griswold, Calsense, Aqua Conserve, HydroEarth, Rain Bird, Alpine Automation, WeatherSet Co., Hydropoint Data Systems, Rain Master, Toro, Weathermatic, Acclima, Alex-Tronics, and there may be others at this point that I don't even know about. The offerings cover a wide spectrum and price range. There are controllers that come as stand alone (receive their ET information onsite), while others receive a broadcast page of weather information collected from an established weather station network. The latter usually come with a monthly charge for receiving the information, which hopefully is seen through reduced water consumption resulting in lower water and sometimes sewer charges paying for the service plus lining the homeowner's pocket with the left over. A few of the players offer only larger single to multi-site irrigation system ET controllers. Others require sensing devices to be purchased separate from the controllers. You have a variety of ways to purchase the new era controllers from buying direct online from the manufacturer's website to having a manufacturer trained and certified installer come to your site to

install and set up the system. Some brands are already available to be purchased at an irrigation supply house across the counter for those Do-It-Yourselfers.

On the IA website (www.irrigation.org) you will find information concerning the questions that interested parties have asked such as:

- How does a SMART controller make watering my landscape easier and more convenient?
- How will installing a SMART controller save me money?
- Where do the automatic adjustments come from?
- How much do SMART controllers cost?
- Which SMART controller works best?

Other questions and answers are listed so if you still have questions be sure to visit the site. How does a SMART controller save money? One of the answers states: "Pilot studies have shown typical water savings to be in the range of 20% - 40% annually." I have worked with ET and central control for the past five years and have personally seen results greater than a seventy percent (70%) reduction in annual water use. Think how much you could reduce your water bill payments if you could attain a comfortable forty percent reduction. For every one hundred dollars (\$100) you have spent, forty dollars (\$40) would still be in your pocket.

"We conserve what we love," writes Amy Vickers in her comprehensive Water Use and Conservation Handbook. The Environmental Protection Agency has embarked upon a star, actually a Water Star program, to help consumers identify efficient water-use products. The SMART ET WBIC controllers will certainly qualify for a star or two. The IA sums it all up by noting that, "SMART controllers will change the way Americans water their landscapes." It will also do the same for all of North America plus wherever the new era technology is correctly applied. Marq de Villiers sums it up by stating, "The trouble with water – and there is trouble with water – is they're not making any more of it," in his book coincidentally called WATER.

CREDIT:

Lorne Haveruk, C.I.D., C.I.C., C.L.I.A. W.C.P. is president of Water Management Services and is an Irrigation Water Efficiency Consultant, and certified irrigation designer, contractor, auditor, and water conservation practitioner. Lorne specializes in writing specifications, RFP's and with facilitating the process selecting Central Irrigation Control Systems (CICS) for City Parks Dept., School Districts, and a variety of large project wide applications throughout North America. He has been actively saving water throughout North America since 1991 as well as teaching others the fundamentals of irrigation. You can contact the author at lorne@watermgm.com or toll free 877-H2O-WISE (420-9473).