

**MOORPARK CITY COUNCIL  
AGENDA REPORT**

**TO:** The Honorable City Council

**FROM:** Jeremy Laurentowski,  
Landscape/Parks Maintenance Superintendent 

**DATE:** March 24, 2011 (CC Meeting of April 20, 2011)

**SUBJECT:** Consider Replacement of Fifty-one (51) Existing Irrigation Controllers with WeatherTRAK ET Pro2 Irrigation Controllers; Authorize Staff to Solicit a Sole Source Product and Installation Contract with HydroPoint Data Systems, Inc.; and Resolution Amending the Fiscal Year 2010/11 Budget

**BACKGROUND**

On February 27, 2009, Governor Schwarzenegger issued an Executive Order requesting all urban water users to increase conservation efforts and reduce water consumption by 20%. This requirement parallels the Department of Water Resources (DWR) 20X2020 statewide Water Conservation Plan conceived by the Governor in 2008 and merges with State of California Assembly Bill 32 (AB32), which mandates Green House Gas (GHG) and Water Use Reductions by 2020.

Per City Council directive and a mandate by the Metropolitan Water District of Southern California (MWD), the City of Moorpark has been required to reduce water-use by 15%. In addition, water rates continue to rise and according to the Ventura County Water District (VCWD), they will continue to do so as long as the resource is in decline. In February, 2010 the VCWD Board increased water rates by 16% and a 12% rate increase was approved by the Board on April 5, 2011. This increase and tier allocation adjustment will ultimately increase the City's annual operating budget by approximately \$180,000 without further water conservation measures. In order to balance the recent rate increase and impact on the operating budget, the City will need to reduce water rates by approximately 20%. Accelerated water conservation measures are necessary, not only to curtail the direct fiscal impact on the City but to also protect this diminishing resource.

**DISCUSSION**

Currently, the City manages approximately 162 acres of parks, 155 acres of Landscape and Lighting Assessment District areas (landscaped parkways, median islands and slopes) and 12 acres of miscellaneous City and Redevelopment Agency

properties. In fiscal year 2009/2010 the City used approximately 156,521 Hundred Cubic Feet (HCF) of water, resulting in a direct cost of \$452,664. Even though the City reduced water consumption by approximately 16.5% as compared to the prior fiscal year, the impact on the operating budget was \$26,411 more in direct water costs due to water rate increases. Approximately 90% of the City's water use is through landscape irrigation. Due to anticipated future water rate increases and in an effort to comply with the 20% state mandated water use reduction by the year 2020, staff has determined that new water saving irrigation techniques and products will be essential.

In July, 2010, staff initiated a 120-day pilot program with three major irrigation system manufacturers: Calsense, the Rain Bird Corporation (Maxicom) and HydroPoint Data Systems, Inc. (WeatherTRAK). One controller from each manufacturer was installed in a high profile landscape area in an effort to determine which irrigation water management system would manage the City's water the most efficiently. Calsense and WeatherTRAK were installed at Mammoth Highlands Park and Maxicom was installed on Spring Road, north of Charles Street, and irrigated a portion of the Zone 22 (Moorpark Highlands) Landscape Assessment District area. Each system incorporated similar water saving techniques utilizing real time or historical evapotranspiration data (ETo) and flow sensing technology. However, each individual operating system varied in complexity and system components. In addition to water use management, improving operational efficiency by placing the City's irrigation water use under one central control was a major component of the program. In an effort to quantify the program, staff developed a matrix of the system requirements and capabilities and developed a rating system based on actual use and field observation (see Attachment II). A summary of these categories follows:

- Controller & Software Requirements
- Weather Data and Evapotranspiration (ETo) Hardware/Software
- Programming Capabilities
- Water Conservation and Flow
- Controller Rating
- Programming, Software and Weather Data/Evapotranspiration Rating
- Water Conservation and Flow Rating
- Staff Time Management

Staff has determined that the HydroPoint Data Systems, Inc. water management system and WeatherTRAK field controllers performed the best during the pilot program and received the highest overall rating. During the program, the WeatherTRAK field controller received daily weather messages with local ETo data from HydroPoint's climate center. This weather data was used in an algorithm programmed into the system software to create daily irrigation schedules for each landscape zone. The most impressive component of this process was the fact that this data automatically set and adjusted irrigation schedules without any staff interaction, thereby relieving staff of the responsibility and complexity of managing daily irrigation schedules. In addition, the HydroPoint system was able to determine the amount of water to apply to each individual hydrozone based solely on

environmental factors, such as plant and soil types, percentage of grade and root watering depth. The system virtually eliminated irrigation runoff and was able to calculate how much water to apply daily to a pre-determined plant rooting depth, improving plant health, appearance and performance. The other systems tested utilized traditional manual scheduling practices and were not capable of providing this function. To staff's knowledge, there is not another product currently on the market that can provide this function without manual interaction by the end user.

In addition, the HydroPoint system effectively utilizes Internet-based management, including wireless alarms, alerts and manual override of the field controllers. Staff was able to preview the product's performance and manage the system each day from any work station or cell phone with internet access, without physically visiting the controller. The other systems tested had either very limited internet capabilities or none at all. HydroPoint Data Systems, Inc. is a sole source for this product.

The Department of Water Resources 20x2020 Water Conservation Plan mandates 20% reduction in water-use by 2020. Specifically, it mandates that only 80% of a site's ETo (water budget) is utilized for irrigation water use. Based on these parameters, the results were impressive as both the WeatherTRAK and Calsense controller used approximately 30% less water than the allowable DWR budget. The results follow:

<b>WATER USE SUMMARY</b>		
	<b>WeatherTRAK Site</b>	<b>Calsense Site</b>
DWR Water Budget - 80% of ETo	670	617
Actual Water Usage	460	451
Percent Saved Below Water Budget	31%	27%
Water-use shown in Hundred Cubic Feet (HCF)		

The water use data from the Maxicom controller was inconclusive. This system was only able to utilize historical ETo data due to the fact that the Maxicom system uses weather data produced by an actual weather station that needs to be purchased with the irrigation equipment at an additional cost of approximately \$40,000. Staff was not able to test the weather station during the pilot program and relied on limited historical ETo data stored in the controller. However, the Maxicom system and software were extremely complex and staff did not feel that this was a system that could be managed efficiently without hiring another staff member or an outside consultant.

During the data evaluation process, staff discovered a discrepancy with the Hydpoint data. The actual data readings at the water meter were considerably higher than the water use readings reported by the system. It was discovered that the discrepancy was due to an incorrect offset value manually set at the controller to

calibrate the flow sensor. Staff determined that additional testing would be necessary to justify the percent increase and monitored the WeatherTRAK system for an additional two months to verify its accuracy. Staff feels confident that the water-use data is correct and has increased the WeatherTRAK water use data based on the percentage of inaccuracy which increased water consumption by approximately 65%. The correct flow sensor offset values increased water-use from 302 HCF to 460 HCF during the test period, well below the DWR water budget. This increase is reflected in the above Water Use Summary.

HydroPoint Data Systems, Inc. and the WeatherTRAK controller have been installed throughout many cities and counties in California and across the nation. In Southern California, customers include the City of Santa Clarita (525 controllers), the County of Los Angeles Parks Department (120 controllers), the Irvine Company (350 controllers), Los Angeles Unified School District, County of Los Angeles Special Districts and a host of others. Further, large commercial corporations such as Wal-Mart, Lowes, Kohl's, Target, AIMCO, BRE Properties and Regency Shopping Centers have all standardized their irrigation systems and are installing WeatherTRAK controllers. Staff has had the opportunity to speak directly with many of these customers and has not only received positive feedback in regards to the physical product, but also positive feedback in regards to customer support, training and the water management capabilities of the system.

### **FISCAL IMPACT**

In addition to substantial water savings, staff has determined that the WeatherTRAK equipment is the least expensive of the three products tested and requires the least amount of staff time to manage the system. The following table compares each manufacturer and summarizes the direct costs associated with the required equipment at each Point-of-Connection (POC). The summary includes a cost for field controllers, communication and weather station hardware, controller enclosures and additional irrigation equipment, such as master valves, flow meters and rain shut-off devices. These devices are necessary to shut down the irrigation system during inclement weather. They also sense flow through the system and will shut down the system when the flow meter senses a high flow reading, such as a mainline break, stuck valve or broken irrigation head. The irrigation industry typically recognizes that 2-5% of annual water use results from malfunctioning irrigation systems. These components will virtually eliminate water loss as all three systems tested have the ability to read flow and will shut-down the system based on parameters of the software set-up. The cost comparison also includes installation costs, 10% contingency, subscription fees and staff time management for each system tested for the first year of installation as well as a ten-year projection:

<b>COST COMPARISON</b>			
	<b>Calsense</b>	<b>WeatherTRAK</b>	<b>Maxicom</b>
Field Controllers & Communication Equipment	\$307,540	\$234,942	\$274,114
Controller Enclosures (stainless steel pedestal and wall mount)	\$127,050	Included in controller cost	\$88,950
Central System Weather Data Hardware	n/a	n/a	\$40,000
Additional Irrigation Equipment Costs	\$39,138	\$39,138	\$29,353
Installation Costs	\$200,534	\$182,304	\$150,400
Tax	\$39,083	\$27,956	\$32,374
Shipping	included	\$18,396	included
Extended Warranty	T.B.D.	\$34,000	T.B.D.
Professional Services Agreement	Included in Installation Cost	\$23,392	Included in Installation Cost
Annual Subscription Fees	n/a	\$15,300	n/a
10% Contingency	\$71,334	\$56,013	\$61,519
<b>Sub-Total Product/Installation Costs:</b>	<b>\$784,679</b>	<b>\$631,441</b>	<b>\$676,711</b>
Annual Staff Time Management	\$70,200	\$46,800	\$93,600
(Calculated @ \$45/hr. w/3% annual cost of living increase)	(30 hrs./week)	(20 hrs./week)	(40 hrs./week)
<b>Sub-Total Staff Time Management:</b>	<b>\$70,200</b>	<b>\$46,800</b>	<b>\$93,600</b>
<b>Total One (1) Year Cost:</b>	<b>\$854,879</b>	<b>\$678,241</b>	<b>\$770,311</b>
<b>Total Ten (10) Year Cost:</b>	<b>\$1,556,879</b>	<b>\$1,237,141</b>	<b>\$1,706,311</b>

The staff time required to manage each water management system consists of the following:

- Daily review of controller schedules and actual water use via the internet or other operating system.
- Flow management, system alerts and coordination with contractors to complete repairs.
- Field management and site inspections.
- Programming and schedules.
- Software management and hardware maintenance.

The WeatherTRAK system requires minimal field management, zero hardware maintenance as weather data is transferred via the internet and minimal staff time to program individual schedules as the system relies on internal algorithms based entirely on environmental factors to determine the water requirement for each individual irrigation valve. Calsense and Maxicom both rely on traditional irrigation scheduling where the operator is required to physically program each controller and input a watering schedule for each individual irrigation valve on the system. Since there is not an option to set environmental factors on these systems, such as soil type or percent grade, this becomes a trial and error process where the operator is required to field verify site conditions and adjust individual schedules on a regular basis. In addition, the Maxicom system relies on a physical weather station that needs to be installed to collect ETo data. This hardware requires monthly maintenance and additional staff time to manage. Staff is recommending replacing sixty-eight (68) irrigation controllers over a two year period. Each controller manages approximately thirty (30) individual irrigation valves, which totals approximately two thousand forty (2,040) individual irrigation control valves that would need to be scheduled and managed. It is staff's opinion that either a full-time staff member or water management professional would need to be hired to manage the Calsense or Maxicom system.

The HydroPoint System requires an annual service fee of two hundred twenty-five dollars (\$225) per controller, which is equivalent to a monthly cost of nineteen dollars (\$19) per controller and offers a 5% discount for a five (5) year service contract and a 10% discount for a ten (10) year service contract. The total annual cost for all sixty-eight (68) controllers is fifteen thousand three hundred four dollars (\$15,300). The primary reason for this cost is due to the fact that the WeatherTRAK system requires a cell phone interface to transfer data via a local satellite and ultimately the internet. These subscription fees are roughly equivalent to 3% of the actual water costs calculated in FY 2009/2010. Both Calsense and Maxicom utilize local radio frequencies to transfer data and do not require a service fee at this time. However, each system would either require an additional staff member or outside consultant to manage the system, including additional communication and weather collection hardware, which far exceeds the subscription fees generated by the HydroPoint management system.

Staff has received a cost proposal from HydroPoint Data Systems, Inc. and break down of actual costs for each individual park and Landscape Assessment District area that would benefit from the water management system. A Cost Summary and Phasing Plan follows (see Attachment III, Cost Detail):

<b>COST SUMMARY - PHASE I (FY 10/11)</b>					
Location	Sub-total	Subscript. Fees	10% Contingency	Addtl. Staff time (8 hrs./wk)	TOTAL
*MAMMOTH HIGHLANDS PARK	\$15,807	\$450	\$1,581	\$706	\$18,544
*PEACH HILL PARK	\$18,083	\$450	\$1,808	\$706	\$21,047
<b>Sub-Total Phase I Parks</b>	<b>\$33,890</b>	<b>\$900</b>	<b>\$3,389</b>	<b>\$1,412</b>	<b>\$39,591</b>
*Z-10: TIERRA REJADA	\$59,207	\$1,350	\$5,921	\$2,118	\$68,596
*Z-5: TIERRA REJADA	\$20,842	\$450	\$2,084	\$706	\$24,082
Z-2: TIERRA REJADA	\$59,673	\$1,350	\$5,967	\$2,118	\$69,108
Z-12: SPRING & MILLER	\$60,889	\$2,025	\$6,089	\$3,177	\$72,180
Z-15: CHAMPIONSHIP DRIVE	\$38,046	\$1,575	\$3,805	\$2,471	\$45,897
Z-22. MPK HIGHLANDS	\$125,237	\$3,825	\$12,524	\$6,001	\$147,587
<b>Sub-Total Phase I LMD</b>	<b>\$363,894</b>	<b>\$10,575</b>	<b>\$36,390</b>	<b>\$16,591</b>	<b>\$427,450</b>
<b>TOTAL PHASE I:</b>	<b>\$397,784</b>	<b>\$11,475</b>	<b>\$39,779</b>	<b>\$18,003</b>	<b>\$467,041</b>
<b>COST SUMMARY - PHASE II (FY 11/12)</b>					
Location	Sub-total	Subscripti on Fees	10% Contingency	Addtl. Staff time (8 hrs./wk)	TOTAL
*GLENWOOD PARK	\$9,552	\$225	\$955	\$353	\$11,085
*TIERRA REJADA PARK	\$21,593	\$450	\$2,159	\$706	\$24,908
*COUNTRY WOOD PARK	\$18,316	\$450	\$1,832	\$706	\$21,304
*VIRGINIA COLONY PARK	\$8,566	\$225	\$857	\$353	\$10,001
*CAMPUS PARK	\$8,566	\$225	\$857	\$353	\$10,001
*POINDEXTER PARK	\$25,163	\$675	\$2,516	\$1,059	\$29,413
*MOUNTAIN MEADOWS PARK	\$21,593	\$450	\$2,159	\$706	\$24,908
*MILLER PARK	\$25,915	\$675	\$2,592	\$1,059	\$30,241
*CAMPUS CANYON PARK	\$11,540	\$225	\$1,154	\$353	\$13,272
*COLLEGE VIEW PARK	\$11,540	\$225	\$1,154	\$353	\$13,272
<b>Sub-Total Phase II Parks</b>	<b>\$162,344</b>	<b>\$3,825</b>	<b>\$16,234</b>	<b>\$6,001</b>	<b>\$188,404</b>
<b>TOTAL PHASE II:</b>	<b>\$162,344</b>	<b>\$3,825</b>	<b>\$16,234</b>	<b>\$6,001</b>	<b>\$188,404</b>
<b>TOTAL PHASE I AND II:</b>	<b>\$560,128</b>	<b>\$15,300</b>	<b>\$56,013</b>	<b>\$24,004</b>	<b>\$655,445</b>
Note: Parks and LMD areas designated with an asterisk (*) would require an additional appropriation from the General Fund.					

Staff is confident that the City will save between 15% and 35% water savings by utilizing the WeatherTRAK controllers in our City parks and Landscape Maintenance Districts. Based on these percentages, staff has calculated the following return on investment (ROI). The ROI is based on the actual FY 09/10 water use data for the areas listed without any further rate increases:

<b>COST RECOVERY</b>			
	<b>15% Water Savings</b>	<b>25% Water Savings</b>	<b>35% Water Savings</b>
Annual Water Savings: Based on \$554,000 (FY 09/10 actual water use data for each Location identified in Phase I and Phase II)	\$83,100	\$138,500	\$193,900
Total Product Costs	\$655,445	\$655,445	\$655,445
Return on Investment (ROI) (years)	7.9	4.7	3.4

Unfortunately, assuming an average 5% increase in water rates, the cost savings of a 25% reduction in irrigation water use would be negated after approximately four years.

Staff recommends installing sixty-eight (68) WeatherTRAK ET Pro2 controllers in selected Parks and LMD's over a two year period. The installation of these controllers will maximize water efficiency, begin compliance with CA AB 32 water use reduction targets and provide savings to our FY 2011/2012 budget. In addition, it will also help the City comply with the water use requirements of the recently adopted Landscape Design Standards and Guidelines that parallel the Assembly Bill 1881 requirements of installing irrigation controllers that utilize real time evapotranspiration data.

Staff will evaluate additional water conservation measures such as reducing turf in parks and LMD's by a reduction goal of 10%; replacing turf areas with native and drought tolerant plant material; refurbishing existing median islands and parkways with native and drought tolerant plant material as funds permit; the introduction of a citywide mulching program; reducing irrigated areas and improving current irrigation systems.

It should be noted that quite a few controllers utilized in our parks, Landscape Maintenance Districts and miscellaneous City properties are not proposed for replacement: twenty-one (21) park controllers, forty-four (44) LMD controllers and eight (8) controllers at various City properties. The majority of these controllers are solar controllers that irrigate very small, established and/or drought tolerant landscape areas. The cost recovery based on water use generally exceeds fifteen years and staff feels that due to the small size of these areas, they can be individually monitored to maximize water savings by our in-house staff and contract landscape maintenance company. In addition, Arroyo Vista Community Park and Villa Campesina Park currently utilize well water to irrigate the turf and landscape areas and staff does not feel that it is necessary to replace the existing controllers at this

time. A summary of Park and LMD controllers that are not proposed for replacement follows:

Citywide Assessment Zones:

- CW1 - Poindexter Ave at Sierra Avenue
- CW3a – Mountain Trail Street Median Islands
- CW5 – High Street
- CW6 – Los Angeles Avenue at Millard Street
- CW7, 8 & 9 – Princeton Avenue, Campus Park Drive and Collins Drive
- CW11 – Spring Road between High Street and Los Angeles Avenue

Zones of Benefit:

- Zone 1 – Pecan Avenue and Campus Park Drive
- Zone 3, 4 & 6 – South side of Los Angeles Avenue at Tierra Rejada Road, Williams Ranch Road, Inglewood Street
- Zone 7 – North side of Los Avenue at Gabbert Road
- Zone 8 – Home Acres Buffer Zone
- Zone 9 – Condor Drive and Princeton Street
- Zone 11 – Pecan Avenue and Alyssas Court
- Zone 14 – Peach Hill Road and Rolling Knoll Drive
- Zone 16 – Poindexter Road at Gisler Road
- Zone 18 – North side of Los Angeles Avenue at Flory Road

Parks:

- Veteran's Memorial Park
- Arroyo Vista Community Park
- Monte Vista Park
- Magnolia Park
- Villa Campesina Park

Miscellaneous Properties:

- 310 High Street – Metrolink Station
- 627 Fitch – Moorpark Public Services Facility
- 699 Moorpark Avenue – Moorpark Library
- 799 Moorpark Avenue – Moorpark Civic Center and City Hall

In addition, twelve (12) of the existing controllers and enclosures proposed for replacement are in immediate need of repair. Several are not working at this time and most have outlived their life expectancy. The majority of these controllers are located in LMD Zones 2, 5 and 10 (Tierra Rejada Road). Several are the original controllers installed during the latter part of 1980 and all exceed fifteen years of age. In addition, staff has identified six (6) park controllers that will most likely need replacing in the next five years due to age. These are located at Poindexter Park, Tierra Rejada Park and Country Trail Park.

Staff recommends soliciting a Sole Source Product and Installation contract with HydroPoint Data Systems, Inc. for the turnkey purchase and installation of WeatherTRAK ET Pro2 controllers. The City Council will need to exercise its

discretion under Section 3.04.120 (Exceptions to Competitive Bidding Requirements) of the Moorpark Municipal Code. HydroPoint will manage a competitive bid process for the installation services and shall place an agreed upon markup (20%) for construction management services. They will share the results of this competitive bid with staff to ensure that the City receives the best value pricing. They will be responsible for overseeing all phases of construction, including contractor management and installation verification and that the installation contractors are licensed (C-27) by the State of CA to perform the work, and that they are paid prevailing wage rates. Staff feels confident of the Sole Source purchase based on the following:

- Only manufacturer to score 100% on the Irrigation Association's testing protocols.
- Customer service handled by Hydropoint – no other company offers a customer service center specifically for their Smart controller.
- There is no matching existing product that utilizes the HydroPoint irrigation scheduling technology.

In addition, HydroPoint System, Inc. will provide the City with a Professional Services Agreement (\$23,392) for all phases of the irrigation system set-up and scheduling, including data collection, controller and software set-up, field verification and testing, training City staff and contractors and a host of other functions for this project. No other manufacturer is able to offer this service in-house, as this cost is generally included in the contractor's installation fees. However, staff feels that the manufacturer is the most qualified to provide this services and feels that it would be beneficial to insure the accuracy of the installation and correct programming parameters.

**Staffing:**

Although the HydroPoint system requires the least amount of staff time to manage, as compared to the other manufacturers tested, additional staff time will be required to manage and maintain the system. Staff has determined that approximately sixteen (16) to twenty (20) hours per week would be required to manage the HydrdoPoint system for phases I and II. This is based on actual staff time spent managing, maintaining and field testing the system during the pilot program:

Phase I: approximately twelve (12) hours per week.

Phase II: approximately eight (8) hours per week.

Total Phase I and II: approximately twenty (20) hours per week.

Staff has prepared several options to cover the needed staff time and will evaluate these options over the next several months:

1. Re-assign staff and daily work schedules.
2. The use of overtime to make up for the additional time required.
3. Contract with a Water Management Consultant or include the management of the Hydropoint system as part of the landscape maintenance contract.
4. A combination of these options.

To accommodate Phase I, staff will evaluate the daily work schedule of several staff members in an effort to cover a portion of the additional time required to manage the irrigation system (approximately 8 hours). In addition, staff will evaluate the option of hiring one additional part-time staff member to cover the Saturday shift to balance the work load. Currently one staff member works Tuesday through Saturday. This person could be re-assigned to a typical Monday through Friday work week allowing an additional (8) hours during the week to redistribute the work load. Phase II will require an additional two (2) to three (3) hours of staff time weekly, which could be a combination of overtime, the re-assignment of the daily work schedules or a supplemental schedule provided by the weekend staff. Additional time will be required to evaluate these options.

**Budget summary:**

Staff recommends replacing sixty-eight (68) irrigation controllers at various City parks and Landscape Maintenance Districts in two phases:

**Phase I:** (FY 2010/11) includes a total of fifty-one (51) controllers at several LMD Zones that are currently fully funded and have available funds in relevant reserve accounts: Zones 2, 12, 15 and 22. In addition, staff suggests installing WeatherTRAK controllers in LMD Zones 5 and 10 (Tierra Rejada Road) and two (2) City parks: Mammoth Highlands Park and Peach Hill Park. The total cost for Phase I follows:

Hardware and installation, subscription fees, 10% contingency:	\$449,038
<u>Additional staff/consultant or over time (approx. 8 hours/week ):</u>	<u>\$18,003</u>
Total Phase I:	\$467,041

Appropriation for Phase I would come from a combination of the General Fund Reserve (1000) and an aggregate budget increase from various landscape maintenance districts:

General Fund (1000):	\$132,269
<u>Zone 2, 12, 15, 22 LMD Funds:</u>	<u>\$334,772</u>
Total:	\$467,041

**Phase II:** (FY 2011/12) includes a total of seventeen (17) controllers at several City parks: Glenwood Park, Tierra Rejada Park, Country Wood Park, Virginia Colony Park, Campus Park, Poindexter Park, Mountain Meadows Park, Miller Park, Campus Canyon Park and College View Park. The total cost for Phase II follows:

Hardware and installation, subscription fees, 10% contingency:	\$182,403
<u>Additional staff/consultant or over time (approx. 2 hours/week ):</u>	<u>\$6,001</u>
Total Phase II	\$188,404

Appropriation for Phase II would need to come from the General Fund Reserve (1000):

<u>General Fund (1000):</u>	<u>\$188,404</u>
Total:	\$188,404

**Total Phase I and Phase II** **\$655,445**

Staff is requesting an additional appropriation from the General Fund Reserve (1000) in the amount of \$132,269 and an aggregate budget increase of \$334,772 from various Landscape Maintenance District funds to complete Phase I. Staff will prepare a project update and Resolution at the end of FY 2011/2012 to complete phase II of this project.

**STAFF RECOMMENDATION (ROLL CALL VOTE)**

1. Authorize staff to obtain a Sole Source Product and Installation contract (Municipal Code Section 3.04.120) from HydroPoint Data Systems, Inc. for the replacement of fifty-one (51) irrigation controllers in City Parks and Landscape Maintenance Districts, with WeatherTRAK ET Pro2 irrigation controllers subject to final language approved by the City Manager and City Attorney; and
2. Adopt Resolution No. 2011- \_\_\_\_\_.

**Attachments:**

1. Resolution No. 2011 - \_\_\_\_\_.
2. Cost Detail
3. Controller Rating Matrix
4. Customer List
5. Product Information

RESOLUTION NO. 2011-\_\_\_\_

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MOORPARK, CALIFORNIA, AMENDING THE FISCAL YEAR 2010/11 BUDGET TO ALLOCATE \$467,041 FROM VARIOUS FUNDS FOR THE REPLACEMENT OF FIFTY-ONE IRRIGATION CONTROLLERS

WHEREAS, on June 16, 2010, the City Council adopted the Operating and Capital Improvement Budget for Fiscal Year 2010/11;

WHEREAS, on February 27, 2009 Governor Arnold Schwarzenegger issued an Executive Order requesting all urban users to increase conservation efforts and reduce water consumption by 20%. This requirement parallels the Department of Water Resources and State of California Assembly Bill 32 (AB32), which mandates Green House Gas (GHG) and Water Use Reductions by 2020; and

WHEREAS, a staff report has been presented to said Council recommending the need to replace fifty-one (51) existing irrigation controllers in several City parks and Landscape Maintenance Districts with WeatherTRAK ET Pro2 controllers in the amount of \$467,041; and

WHEREAS, an aggregate budget amendment increase of \$467,041 is required to complete the purchase and installation of all irrigation controllers in various locations identified in the staff report; and

WHEREAS, Park Maintenance Fund (2400), AD 84-2 Zone 5 Fund (2305) Pheasant Run Area Tract Nos. 3019 and 3525 and AD 84-2 Zone 10 Fund (2310) Mountain Meadows Planned Community 3 are projected to have minimal or deficit fund balances at June 30 year end. Hence, staff is recommending to use the General Fund (1000) reserve to finance \$132,269 of the total project cost allocated to these Funds; and

WHEREAS, Exhibit "A" hereof describes said budget amendment and its resultant impact to the budget line items.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF MOORPARK DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. A budget amendment allocating \$467,041 for the purchase and installation of irrigation controllers in various location from various funds as more particularly described in Exhibit "A" attached hereto is hereby approved.

SECTION 2. The City Clerk shall certify to the adoption of this resolution and shall cause a certified resolution to be filed in the book of original resolutions.

PASSED AND ADOPTED this 20<sup>th</sup> day of April, 2011.

\_\_\_\_\_  
Janice S. Parvin, Mayor

ATTEST:

\_\_\_\_\_  
Maureen Benson, City Clerk

Attachment: Exhibit A – Budget Amendment

**EXHIBIT A**

**BUDGET AMENDMENT FOR VARIOUS FUNDS  
 FOR THE PURCHASE AND INSTALLATION OF IRRIGATION CONTROLLERS  
 FY2010/11**

**FUND ALLOCATION FROM:**

<b>FUND</b>	<b>ACCOUNT</b>	<b>AMOUNT</b>
General Fund	1000-5500	\$ 132,269.00
AD 84-1 Zone 2	2302-5500	\$ 69,108.00
AD 84-1 Zone 12	2312-5500	\$ 72,180.00
AD 84-1 Zone 15	2315-5500	\$ 45,897.00
AD 2007-01 Pardee (Tract 5045)	2322-5500	\$ 147,587.00
	<b>TOTAL</b>	<b>\$ 467,041.00</b>

**DISTRIBUTION OF APPROPRIATION TO EXPENSE ACCOUNTS:**

<b>Budget Unit/Account Number</b>	<b>Current Budget</b>	<b>Revision</b>	<b>Adjusted Budget</b>
1000-7800-7808-9504	\$ -	\$ 21,047.00	\$ 21,047.00
1000-7800-7818-9504	\$ -	\$ 18,544.00	\$ 18,544.00
1000-7900-7905-9504	\$ -	\$ 92,678.00	\$ 92,678.00
2302-7900-7905-9504	\$ -	\$ 69,108.00	\$ 69,108.00
2312-7900-7905-9504	\$ -	\$ 72,180.00	\$ 72,180.00
2315-7900-7905-9504	\$ -	\$ 45,897.00	\$ 45,897.00
2322-7900-7905-9504	\$ -	\$ 147,587.00	\$ 147,587.00
<b>Sub-Total</b>	<b>\$ -</b>	<b>\$ 467,041.00</b>	<b>\$ 467,041.00</b>

Finance approval:  \_\_\_\_\_

**ATTACHMENT II**

COST DETAIL - PHASE I (FY 10/11)																		
Site Name	Qty	2" MV	2" FS	Controller HW	F/S	M/V	Rain Sensor	Extended Warranty	HPDS prof. svc.	Controller Install	F/S Install	M/V Install	subscript.	Tax	Shipping	10% contingency	staff time (8 hrs./wk)	TOTAL
PI MAMMOTH HIGHLANDS PARK	2	0	0	\$9,086	\$0	\$0	\$207	\$1,000	\$688	\$2,856	\$0	\$0	\$450	\$948	\$1,022	\$1,581	\$706	\$18,544
PI PEACH HILL PARK	2	2	2	\$5,478	\$753	\$928	\$207	\$1,000	\$688	\$2,856	\$3,000	\$1,400	\$450	\$751	\$1,022	\$1,808	\$706	\$21,047
LMD Z-10: TIERRA REJADA	6	6	6	\$22,788	\$2,258	\$2,785	\$620	\$3,000	\$2,064	\$8,568	\$9,000	\$4,200	\$1,350	\$2,902	\$1,022	\$5,921	\$2,118	\$68,596
LMD Z-5: TIERRA REJADA	2	2	2	\$7,981	\$753	\$928	\$207	\$1,000	\$688	\$2,856	\$3,000	\$1,400	\$450	\$1,007	\$1,022	\$2,084	\$706	\$24,082
LMD Z-2: TIERRA REJADA	6	6	6	\$23,211	\$2,258	\$2,785	\$620	\$3,000	\$2,064	\$8,568	\$9,000	\$4,200	\$1,350	\$2,945	\$1,022	\$5,967	\$2,118	\$69,108
LMD Z-12: SPRING MILLER	9	3	7	\$19,029	\$1,129	\$3,249	\$930	\$4,500	\$3,096	\$12,852	\$10,500	\$2,100	\$2,025	\$2,482	\$1,022	\$6,089	\$3,177	\$72,180
LMD Z-16: CHAMPIONSHIP DRIVE	7	0	0	\$18,442	\$0	\$0	\$723	\$3,500	\$2,408	\$9,996	\$0	\$0	\$1,575	\$1,955	\$1,022	\$3,805	\$2,471	\$45,897
LMD Z-22: MPK HIGHLANDS	17	0	0	\$75,912	\$0	\$0	\$1,757	\$8,500	\$5,848	\$24,276	\$0	\$0	\$3,825	\$7,922	\$1,022	\$12,524	\$6,001	\$147,587
<b>SUB-TOTAL PHASE I</b>	51	19	23	\$181,927	\$7,151	\$10,675	\$5,271	\$25,500	\$17,544	\$72,828	\$34,500	\$13,300	\$11,475	\$20,912	\$8,176	\$39,779	\$18,003	\$467,041

COST DETAIL - PHASE II (FY 11/12)																		
Site Name	Qty	2" MV	2" FS	Controller HW	F/S	M/V	Rain Sensor	Extended Warranty	HPDS prof. svc.	Controller Install	F/S Install	M/V Install	subscript.	Tax	Shipping	10% contingency	staff time (2.5 hrs/wk)	TOTAL
PII GLENWOOD PARK	1	1	1	\$2,739	\$376	\$464	\$103	\$500	\$344	\$1,428	\$1,500	\$700	\$225	\$376	\$1,022	\$955	\$353	\$11,085
PII TIERRA REJADA PARK	2	2	2	\$8,663	\$753	\$928	\$207	\$1,000	\$688	\$2,856	\$3,000	\$1,400	\$450	\$1,076	\$1,022	\$2,159	\$706	\$24,908
PII COUNTRY TRAIL PARK	2	2	2	\$5,689	\$753	\$928	\$207	\$1,000	\$688	\$2,856	\$3,000	\$1,400	\$450	\$773	\$1,022	\$1,832	\$706	\$21,304
PII VIRGINIA COLONY	1	1	1	\$1,845	\$376	\$464	\$103	\$500	\$344	\$1,428	\$1,500	\$700	\$225	\$284	\$1,022	\$857	\$353	\$10,001
PII CAMPUS PARK	1	1	1	\$1,845	\$376	\$464	\$103	\$500	\$344	\$1,428	\$1,500	\$700	\$225	\$284	\$1,022	\$857	\$353	\$10,001
PII POINDETER PARK	3	3	3	\$6,901	\$1,129	\$1,392	\$310	\$1,500	\$1,032	\$4,284	\$4,500	\$2,100	\$675	\$993	\$1,022	\$2,516	\$1,059	\$29,413
PII MOUNTAIN MEADOWS PARK	2	2	2	\$8,663	\$753	\$928	\$207	\$1,000	\$688	\$2,856	\$3,000	\$1,400	\$450	\$1,076	\$1,022	\$2,159	\$706	\$24,908
PII MILLER PARK	3	3	3	\$7,584	\$1,129	\$1,392	\$310	\$1,500	\$1,032	\$4,284	\$4,500	\$2,100	\$675	\$1,062	\$1,022	\$2,592	\$1,059	\$30,241
PII CAMPUS CANYON PARK	1	1	1	\$4,543	\$376	\$464	\$103	\$500	\$344	\$1,428	\$1,500	\$700	\$225	\$560	\$1,022	\$1,154	\$353	\$13,272
PII COLLEGE VIEW PARK	1	1	1	\$4,543	\$376	\$464	\$103	\$500	\$344	\$1,428	\$1,500	\$700	\$225	\$560	\$1,022	\$1,154	\$353	\$13,272
<b>SUB-TOTAL PHASE II</b>	17	17	17	\$53,015	\$6,397	\$7,888	\$1,756	\$8,500	\$5,848	\$24,276	\$25,500	\$11,900	\$3,825	\$7,044	\$10,220	\$16,234	\$6,001	\$188,404
<b>TOTAL</b>	68	36	40	\$234,942	\$13,548	\$18,563	\$7,027	\$34,000	\$23,392	\$97,104	\$60,000	\$25,200	\$15,300	\$27,956	\$18,396	\$56,013	\$24,004	\$655,445

<b>CONTROLLER RATING MATRIX</b>		ATTACHMENT III	
<b>WATER MANAGEMENT PILOT PROGRAM 2010</b>			
<b>SYSTEM REQUIREMENTS</b>			
Y = System currently meets this requirement and is included as a standard operating component			
N = System does not meet this requirement as specified			
	<u>Calsense</u>	<u>WeatherTRAK</u>	<u>Maxicom</u>
<b>Controller/Software Capabilities:</b>			
1	Minimum 5-year warranty on parts and labor	Y	Y
2	Ability to read flow sensing valves from several major irrigation manufactures, including Data Industrial.	Y	Y
3	Ability to detect flow variations of minimum 5 gallons per minute.	Y	Y
4	48 station expansion hardware	Y	Y
5	Supports both normally open and closed master valves	Y	Y
6	Software can display flow data and irrigation schedules for each station.	Y	Y
7	Software can display total flow usage and runtimes on a daily, weekly, monthly or custom date range basis	Y	Y
8	Controller can support universal handheld remotes (i.e. Rainmaster or equivalent)	Y	Y
9	Controller can operate manually, both from the field unit and remotely via internet access from any computer	N	N
10	Mainline water break detection minimum 5 gallon per minute above set flow	Y	Y
11	Ability to read external rain sensing equipment	Y	Y
12	Ability to override master valve and flow sensor either manually or with a programmed schedule	Y	Y
13	Programmable security codes for controller and software to prevent unauthorized use.	Y	N (software only)

		N (In development)	Y	N
14	Controller management via. Internet		Y	N
	Ability to send alerts to user via auxiliary data device (i.e. Blackberry or Iphone)	N	Y	N
16	Ability of user to interface software via auxiliary data device	N	Y	N
<b>Weather Data and Evapotranspiration (ETo) Hardware/Software:</b>				
1	Ability to transmit and receive daily weather data to each controller via wireless network.	Y	Y	N
2	Historical weather data available for minimum one-year period.	Y	Y	Y
3	Ability to disable ETo processing per station.	Y	Y	Y
4	Ability to utilize saved historical ETo data.	Y	Y	Y
5	Ability to utilize manually entered ETo data.	Y	Y	Y
6	Ability to adjust ETo data by percentage.	Y	Y	Y
7	Ability to connect to an ETo measuring device via internet, an independent weather stations or external hardware.	Y	Y	Y
8	Ability to display the last daily ETo value.	Y	Y	Y
9	ETo enabled irrigation scheduling based on the following: - Irrigation specific to hydrozone - Minimum 5 sprinkler types including drip irrigation - Pre-defined precipitation rates w/user interface capability - Default or user defined root zone depths - Default or user crop coefficients - Minimum 5 soil types w/user interface capability - Minimum 4 pre-defined slope gradients w/user interface capability	Y	Y	Y
		N	Y	N
		Y	Y	N
		N	Y	N
<b>Programming Capabilities:</b>				
1	Minimum of four independent irrigation programs with minimum five available start times	Y	Y	Y
2	Water day restriction interface	Y	Y	Y

3	Master valve override option	Y	Y	Y	Y
4	Ability to cycle soak up to twenty times per start time without user interface	N	Y	Y	N
5	Ability to stack or overlap scheduling to irrigate within a preset or manually programmed watering window	Y	Y	Y	N
6	Ability to adjust run time schedules on a daily basis according to daily ETo data	Y	Y	Y	Y
7	Ability to calculate cycle soak intervals on a daily basis to reduce runoff.	N	Y	Y	N
8	Ability to calculate cycle soak intervals on a daily basis to irrigate to a preset or manually set watering depth.	N	Y	Y	N
9	Ability to manually skip watering days and adjust schedule based on carry-over depletion.	Y	Y	Y	Y
10	Ability to adjust irrigation schedules by percentage.	Y	Y	Y	Y
11	Ability to set water budget and track water usage against established budget.	N	Y	Y	Y
12	Ability to recognize field changes made to the controller and accept or reject changes	Y	Y	Y	Y
<b>Water Conservation and Flow:</b>					
1	Ability to enable or disable flow sensor features.	Y	Y	Y	Y
2	Ability to program mainline flow limit from a minimum of 1 gpm to max. 999 gpm	Y	Y	Y	Y
3	Ability to program unscheduled flow from a minimum of 1 gpm to a max. 999 gpm	Y	Y	Y	Y
4	Ability to program individual upper station limits from a minimum of 0 gpm to maximum of 500 gpm	Y	Y	N	Y
5	Automatic detection of station upper and lower flow limit with visual indicators. Ability to turn off fault station and advance to the next station in succession.	Y	Y	Y	Y
6	Ability to set irrigation schedules based solely on environmental factors (i.e. soil type, slope gradient, plant type, ETo), without manual interface.	N	Y	Y	N

			<u>Calsense</u>	<u>WeatherTRAK</u>	<u>Maxicom</u>
<b>SYSTEM RATING</b>					
5 = Optimal (System functions perform as expected and require minimal staff input or direction) and require staff input or direction to optimize system parameters)					
1 = Poor (Systems functions do not perform as expected and require excessive staff time to optimize system parameters)					
<b>Controller Rating:</b>					
1	Field Controller General Set-up: Direct data input (i.e. time, date, general parameters)		4	4	3
2	Field Controller site data: Direct data input (i.e. precipitation rates, hydrozones, soil, plant types)		4	3	1
3	Field Controller Scheduling: Direct data input (i.e. water days, run times, water windows)		3	5	3
4	Field Controller Monitoring: Adjust watering schedule based on actual conditions (i.e oversaturation, runoff, under-watering, etc.)		3	5	3
5	Handheld Remote: Ease of use, options, and ability to manage field monitoring		5	4	5
6	Manual operation functions, test cycles and field adjustment		5	5	5
7	Master valve override		5	5	5
8	Alert detection, notification and system reset		5	5	5
9	Field manual program test and station sequencing		4	5	4
10	Software manual program text and station sequencing		3	5	1
<b>Sub-Total Controller Rating</b>			<b>4.1</b>	<b>4.6</b>	<b>3.5</b>

<b>Programming, Software and Weather Data/Evapotranspiration</b>					
<b>Rating:</b>					
1	Scheduling and field controller interface	4	5		3
2	Schedule modifications and percent reduction	4	5		3
3	Software based master valve override	4	4		3
4	Water use management based on percentage of ETo.	4	4		1
5	Software options (i.e. site lighting control, complex scheduling, master valve override, etc.).	5	4		3
6	System alert management and reset options.	4	4		2
7	Weather data and water use reporting, water budgeting	5	5		3
8	Field changes and direct interface with software	3	4		1
9	Software complexity, staff time management and user interface	4	5		2
10	Daily ETo monitoring and reporting	5	5		5
11	Daily ETo consistent with local climate conditions	5	5		5
12	Rain shut off and system shut down	5	5		5
<b>Sub-Total Programming, Software and ETo Data</b>		<b>4.3</b>	<b>4.6</b>		<b>3.0</b>
<b>Water Conservation and Flow:</b>					
1	Software based mainline flow meter programming	4	4		2
2	Software based station flow limit programming and flow meter interface	4	4		2
3	Mainline break detection	5	5		5
4	High flow and low flow detection	5	5		5
5	Site soil saturation	4	5		4
6	Site water runoff	4	5		4
7	Overall quality of plant material	4	5		4
8	Irrigation water reduction (compared to historical use)	5	5		3
<b>Sub-Total Water Conservation and Flow</b>		<b>4.4</b>	<b>4.8</b>		<b>3.6</b>

<b>Staff Time Management:</b>				
1	Field management	4	5	4
2	System software management	4	5	2
3	Programming and schedules	3	4	2
4	Manufacturer support	5	5	5
<b>Sub-Total Water Staff Time Management</b>		<b>4.0</b>	<b>4.8</b>	<b>3.3</b>
<b>TOTAL SYSTEM RATING</b>		<b>4.2</b>	<b>4.7</b>	<b>3.3</b>



**WeatherTRAK Customers**



## Making a Difference

### In 2010, Our Customers

#### Saved:

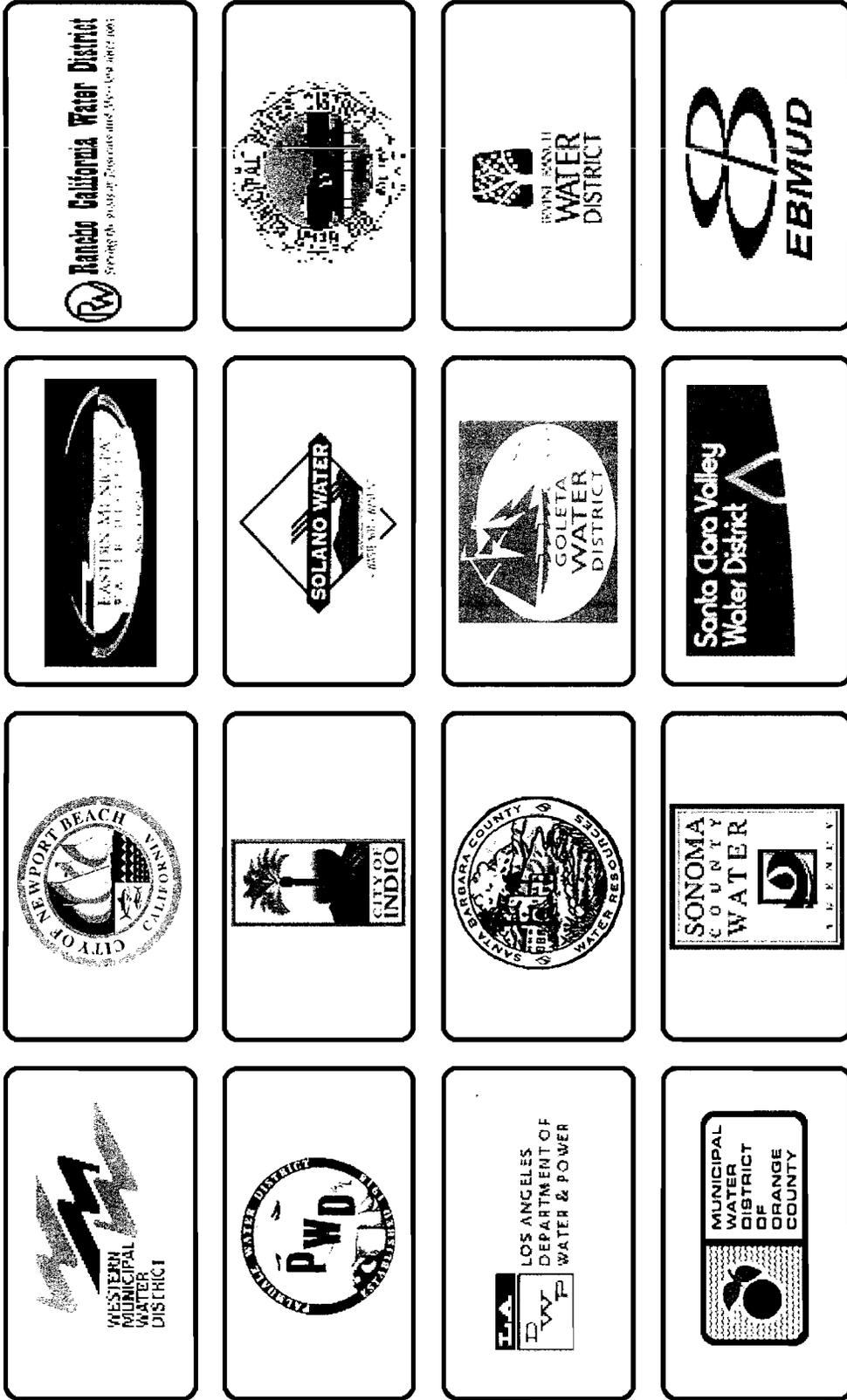
- 11.3 billion gallons of water
- 45 million kWh of power
- 60 million lbs of CO2
- >\$75M in avoided expenses
- While improving water quality



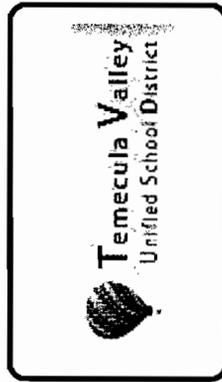
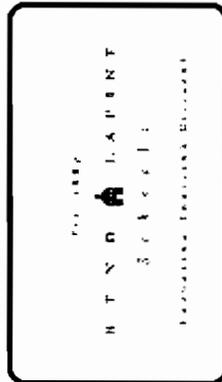
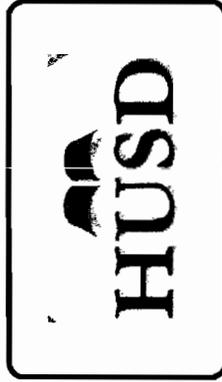
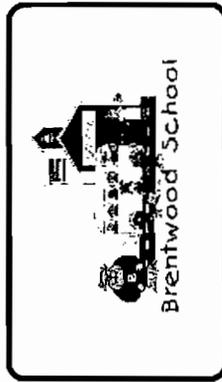
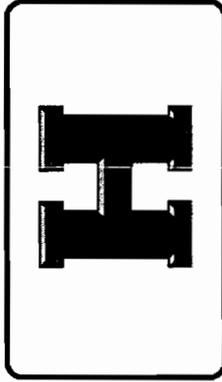
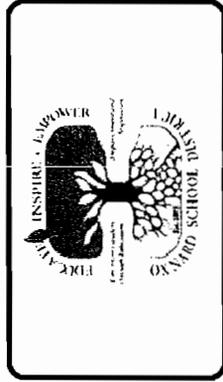
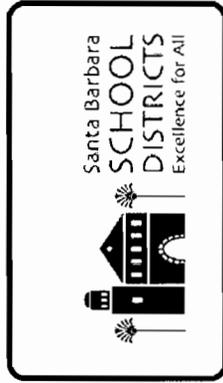
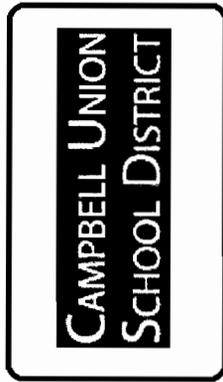
# Cities and Municipalities



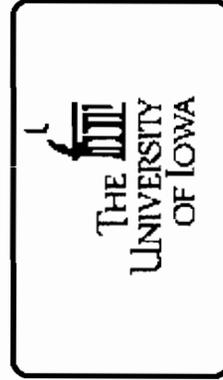
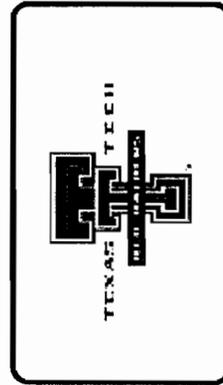
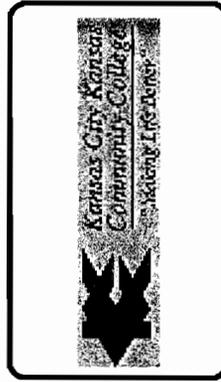
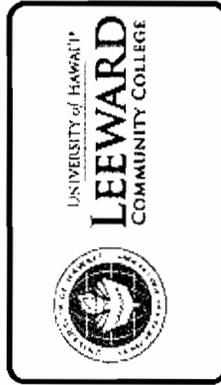
# Water Agencies



# Schools: K-12



## Schools: Higher Education



## Green-Minded Companies

The #2  
Company in  
the Fortune 500

regency centers  
GENUINITY

Coca-Cola®

America Comes Home to  
**AIMCO**

Google



TARGET

THE IRVINE COMPANY

**LOWE'S**  
Home Improvement Warehouse  
Improving Home Improvement

**DOUBLETREE**  
HOTELS-RESORTS-CItyS



SAFEWAY

**KOHL'S**

The largest  
Non-Windows  
Computer  
Company

**Jack**  
in the box

**ebay**®

ARCSTONE SMITH



**Hilton**

Travel should take you places™

**WeatherTRAK**

Features and Benefits: *WeatherTRAK ET Pro<sup>2</sup> Central™* and  
*WeatherTRAK Central™ Internet Management Option*



## Features and Benefits: *WeatherTRAK ET Pro<sup>2</sup> Central™* and *WeatherTRAK Central™ Internet Management Option*

### Key Benefits of *WeatherTRAK* for:

#### Property Managers and Builders

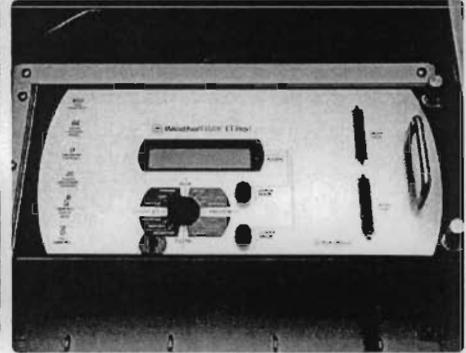
- Avoid the high costs and risks of overwatering
- Realize rapid return on investment

#### Municipalities

- Keep parks and median strip landscapes healthy
- Achieve affordable water management

#### Landscape Contractors

- Reduce labor cost
- Increase efficiency



#### ***WeatherTRAK Scheduling Engine™ Automates Accurate Irrigation***

Featuring built-in WeatherTRAK Scheduling Engine software, the *ET Pro<sup>2</sup> Central* Controller automates irrigation schedules based on industry best practices.

- Programmable parameters for plant, soil and slope type optimize zones and water.
- Integrated flow management, leak detection and alerts.
- 12 to 48 station models with handheld remote interface option.

#### ***WeatherTRAK ET Everywhere Service™ Ensures Accurate Weather Updates***

*ET Everywhere Service* delivers hi-resolution weather updates wirelessly each day, irrigation based on data collected from 40,000 NOAA weather stations. Calculates and validates local weather data down to one square kilometer.

#### ***WeatherTRAK ET Pro<sup>2</sup> Central Delivers 'Round -the-clock Internet Control***

Manage single or multiple sites over a localized or large regional area with oversight, automatically adjusting monitoring and reporting functions. 'Quick Links' provide instant access to reports, specific controllers or rain pause. Receive and respond to *email alerts* in real-time.

#### ***HydroPoint Customer Service Provides Customized Expertise***

Our team of horticulture and irrigation experts ensures that you always enjoy peak performance from *ET Pro<sup>2</sup> Central*. Help from English and Spanish speakers is just a phone call or mouse click away.

## Proven Smart Water Management. Unprecedented savings.

Over twenty independent studies and thousands of customers make it clear — *WeatherTRAK is #1* for saving water, reducing runoff and satisfying customers.

*WeatherTRAK* pays for itself through dramatic and sustained water and labor savings.

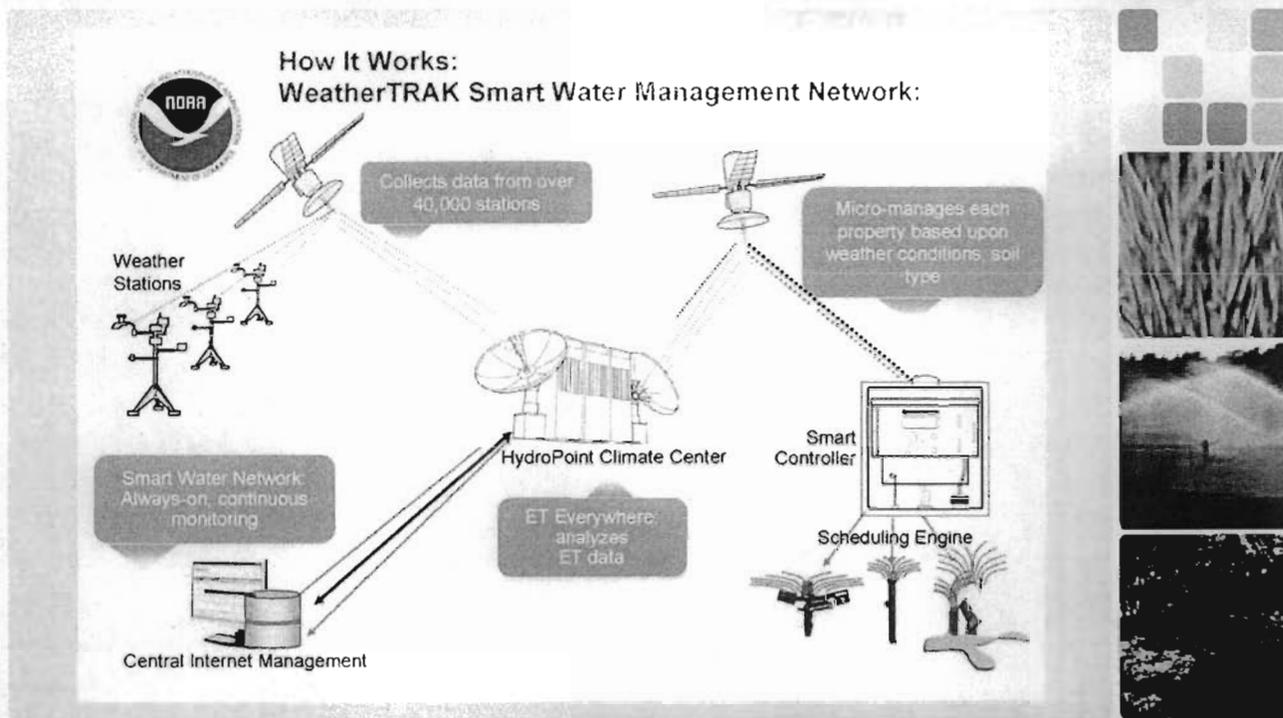
*WeatherTRAK* also guards companies against the risks of overwatering landscapes, including plant loss, slope erosion, hardscape damage, common area hazards, mold, mildew, non-point source pollution and customer complaints.

**Put *WeatherTRAK ET Pro<sup>2</sup> Central™* to work for you.**

View a FREE online demo and estimate your savings with *WeatherTRAK*  
Go to [hydropoint.com](http://hydropoint.com)

 **HydroPoint**  
data systems, inc.  
1720 Corporate Circle, Petaluma, CA 94954  
800.362.8774 • [hydropoint.com](http://hydropoint.com)

# Cost-effective Water Management for Commercial Landscapes



*WeatherTRAK ET Pro<sup>2</sup> Central* adjusts irrigation based on evapotranspiration (ET) data and the water needs of plants at each landscape station. Standard integrated flow management plus options like Central Internet Management and a handheld remote control interface equip your *WeatherTRAK ET Pro<sup>2</sup> Central* system with the industry's most advanced, yet easy-to-use technology.

Companies everywhere are choosing *WeatherTRAK ET Pro<sup>2</sup> Central* for cost-effective landscape water management. With *WeatherTRAK*, you get the control and the results you need...automatically.

*"WeatherTRAK ET Pro<sup>2</sup> is sending shockwaves through the industry because it brings practical, economical, ET-based irrigation to commercial landscape management."*

**Rodney Whitacre**  
Vice President, Operations  
Jensen Landscape Services

A few highlights from ten years of field tests and scientific studies:

***WeatherTRAK* receives perfect SWAT<sup>TM</sup> performance scores: 100% Irrigation Adequacy and 0% Irrigation Excess**

Irrigation Association

***WeatherTRAK* achieves 97% customer satisfaction**

Irvine Ranch Water District

***WeatherTRAK* converts 95% of potential water savings**

Los Angeles Department of Water and Power

***WeatherTRAK* reduces outdoor water use by up to 59%**

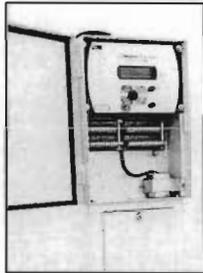
Santa Barbara County Water Agency

***WeatherTRAK* reduces non-point source runoff pollution by as much as 71%**

Metropolitan Water District of Orange County, U.S. Bureau of Water Reclamation, Cal/EPA and additional agencies

> View complete study results at [hydropoint.com/proven](http://hydropoint.com/proven)

HydroPoint Data Systems, Inc.  
800.362.8774 • [hydropoint.com](http://hydropoint.com)



**ET Pro<sup>2</sup> Smart Water Manager™ (SWM) series controllers.** Simple, complete and proven smart irrigation ideal for commercial or high end residential customers including home owners associations, commercial campuses, business parks, retail malls, municipal, schools and institutional applications.

Incorporates the exclusive **WeatherTRAK ET Everywhere™** daily hi-resolution weather service. Wireless delivery of local weather data to each controller's built in radio. Simple plug and play for new or retrofit with no local sensors or added phone lines, licensed radio frequencies or cables necessary.

Includes the patented **WeatherTRAK Scheduling Engine™** that allows for customization for each zone of your landscape and takes the guesswork out of irrigation programming. Provides for complete user control to comply with agency regulations as well as site specific customer needs.

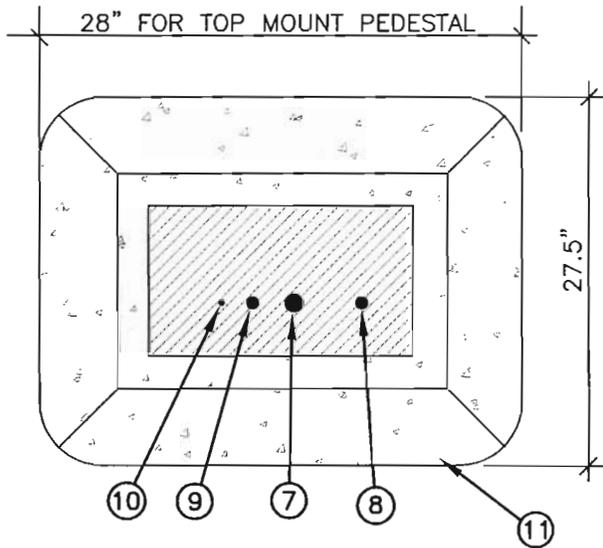
**WeatherTRAK Central Internet Management** - monitor, manage and control your irrigation down to the station level in real time from any internet enabled computer. Purchase controllers as Central or upgrade from Basic communication (one-way) at any time with a simple upgrade kit. Controllers accessible via internet minutes after installation.

Recognized by the Irrigation Associations SWAT protocol with 100% test scores for efficiency and run-off reduction potential.

<p><b>ET Pro<sup>2</sup> Smart Water Manager Controller</b></p> <ul style="list-style-type: none"> <li>▪ 12-48 stations with heavy-duty screw-less field wire terminals.</li> <li>▪ Station modularity in 6-station increments starting at 12 stations.</li> <li>▪ Heavy-duty surge protection up to 6 KV.</li> <li>▪ Powder-coated or stainless steel wall mount and pedestal models.</li> <li>▪ Interchangeable transformer location makes for easier retrofits.</li> <li>▪ Non-volatile memory to store all settings without battery.</li> <li>▪ Automatic field wire fault protection and detection.</li> <li>▪ Dedicated master valve designated as normally open or closed.</li> <li>▪ Dedicated pump start – uses a station output.</li> <li>▪ Large 3.0amp transformer – run up to 6 valves simultaneously</li> <li>▪ Compatible with 3<sup>rd</sup> party rain and freeze sensors.</li> <li>▪ Built-in held-held remote compatibility w/ RainMaster™ "Pro-Max UA" series with EX-32 cable or TRC™ "Commander" Series.</li> <li>▪ Purchase as Central or Upgrade to <b>Central Internet Management</b> with a 2-way central kit.</li> <li>▪ Flow monitoring built in – directly compatible with Creative Sensor Technology and Data Industrial flow sensors.</li> </ul>	<p><b>ET Pro<sup>2</sup> Smart Water Manager Programming</b></p> <ul style="list-style-type: none"> <li>▪ 4 Operating modes per station – Automated with ET, User Program with ET, No ET and Off including 2 start times per program and up to 20 cycles per program.</li> <li>▪ Automated cycle and soak.</li> <li>▪ Proven WeatherTRAK Scheduling Engine optimizes watering by station specific utilizing plant, soil, sprinkler, slope data.</li> <li>▪ Station specific program settings and % adjust control to fine tune watering.</li> <li>▪ Automated skip days based on soil moisture depletion levels per zone.</li> <li>▪ User defined water days and water windows per program to comply with all agency regulations.</li> <li>▪ Run time rationing for plant health protection under constricted water window situations.</li> <li>▪ Manual or multi station manual watering from 1-99 minutes.</li> <li>▪ Program Review screen by station for current week watering and projected upcoming watering.</li> </ul>
<p><b>ET Pro<sup>2</sup> Central Internet Management</b></p> <ul style="list-style-type: none"> <li>▪ Optional Central Internet Management for all Pro<sup>2</sup> Controllers (purchased as Central or Upgrade from Basic).</li> <li>▪ Secure User Name and Password – multi-named users per controller or site.</li> <li>▪ Single controller up to 500 controllers per account.</li> <li>▪ Instant access at time of installation – program from web for first time, minutes after you install.</li> <li>▪ User friendly Dashboard views for quick management and analysis of sites.</li> <li>▪ Anytime web-based or field based programming with full real time synchronization.</li> <li>▪ Access to all station level and program level settings.</li> <li>▪ User-defined names for controllers, programs and stations.</li> <li>▪ Email and SMS/Text Alerts; Flow, Hardware, Field Wiring, Program Conflicts, Communication and more.</li> <li>▪ Reporting – User customized Runtime, Accumulated ET, Flow – single or multi controller, Alerts, Settings.</li> <li>▪ Quick links and sorting feature for custom data views.</li> <li>▪ Instant controller shutdown.</li> </ul>	<p><b>WeatherTRAK ET Everywhere™ Weather Service</b></p> <ul style="list-style-type: none"> <li>▪ Daily ET sent each night.</li> <li>▪ Hi Resolution local data for each 1km area across North America.</li> <li>▪ Uses real time network of over 40,000 weather stations, satellite data, Doppler radar and more.</li> <li>▪ No single weather station reliance or risk.</li> <li>▪ Advanced modeling uses hundreds of data points for each ET zone – failsafe with no single point of failure.</li> <li>▪ Utilizes industry standard Penman Montheith ET Equation (temperature, wind, solar radiation, humidity) the only methodology recognized by the Irrigation Association for determining ET.</li> <li>▪ Redundant weather and communication networks for 99% uptime.</li> </ul> <p><b>WeatherTRAK Customer Service and Support</b></p> <ul style="list-style-type: none"> <li>▪ Toll Free Customer Support 6 days/week English/ Spanish.</li> <li>▪ On line training.</li> <li>▪ On line real time troubleshooting.</li> <li>▪ National distribution and sales support.</li> <li>▪ WeatherTRAK Professional Services.</li> <li>▪ <b>5 Year Product Warranty.</b></li> </ul>



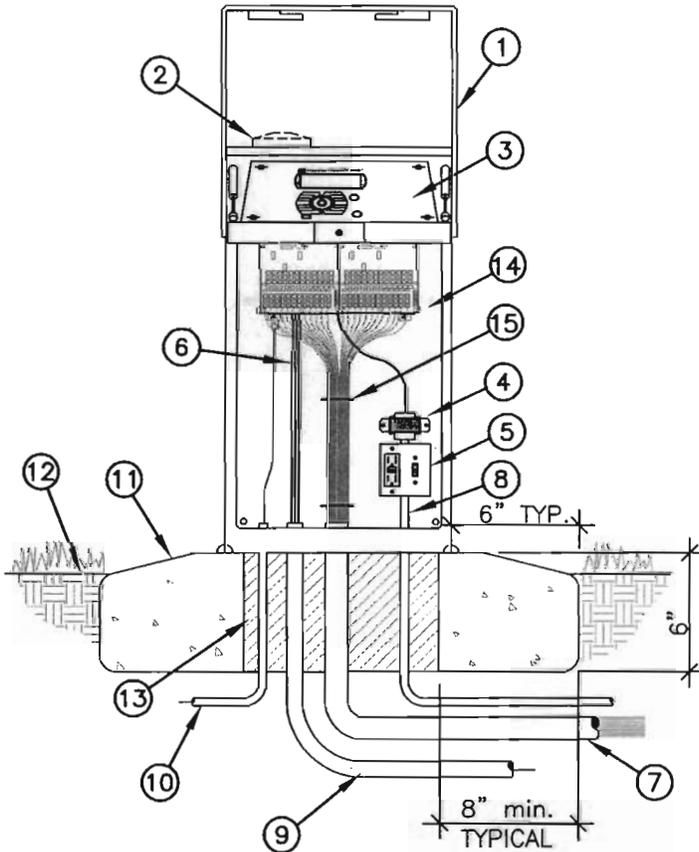
NOTE:  
SEE IRRIGATION DRAWINGS FOR ENCLOSURE WIDTH.



NOTE:  
MINIMUM CONCRETE BASE REQUIREMENTS. CONTRACTOR SHALL VERIFY NUMBER AND SIZE OF CONDUITS AND GROUND RODS REQUIRED FOR EACH ENCLOSURE INSTALLATION. USE ENCLOSURE MANUFACTURER'S TEMPLATE FOR PROPER LAG BOLT PLACEMENT. PROVIDE A MINIMUM OF 2" OF CONCRETE FROM LAG BOLT TO OPENING IN CONCRETE BASE FOR CONDUITS AND GROUND RODS.

LEGEND

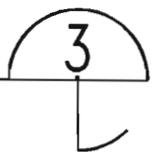
1. STAINLESS STEEL AUTOMATIC CONTROLLER ENCLOSURE ASSEMBLY. SEE IRRIGATION LEGEND FOR MAKE AND MODEL.
2. LOW PROFILE ANTENNA.
3. WEATHERTRAK ET PRO<sup>2</sup> SWM SERIES CONTROLLER. SEE DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
4. CONTROLLER TRANSFORMER.
5. GFI ON/OFF POWER SWITCH RECEPTACLE. (OPTIONAL)
6. FLOW SENSOR CABLE AND MASTER VALVE WIRES PER SPECIFICATIONS.
7. 3" PVC SWEEP ELL AND CONDUIT FOR CONTROL WIRES.
8. 1" PVC SWEEP ELL AND CONDUIT FOR 120 VAC FROM METERED POWER SUPPLY.
9. 2" PVC SWEEP ELL AND CONDUIT FOR FLOW SENSOR CABLE AND MASTER VALVE WIRES.
10. 1" PVC SWEEP ELL AND CONDUIT FOR GROUNDING WIRE. WIRE SHALL BE AS STRAIGHT AS POSSIBLE. INSTALL GROUNDING WIRE PER LOCAL AND NATIONAL ELECTRIC CODES.
11. POURED CONCRETE BASE, SLOPE TO DRAIN.
12. FINISH GRADE. 2" BELOW TOP OF CONCRETE BASE.
13. FILL VOIDS WITH CONCRETE SLURRY MIX.
14. UNIVERSAL RADIO REMOTE INTERFACE. (TYPICAL)
15. NEATLY BUNDLE WIRES AND SECURE WITH WIRE TIES. (TYPICAL)



# 16" TOP ENTRY PEDESTAL MOUNT INSTALLATION FOR

## WeatherTRAK ET PRO<sup>2</sup> SWM SERIES

SCALE: N.T.S.



**HYDROPOINT**  
data systems, inc.

WEATHER BASED AUTOMATIC IRRIGATION CONTROLLER

29 MARCH 2010

REVISED --

DRAWING NO. 0003