For grant purposes, we would like to upgrade the manual irrigation controllers in our Parks to cloud-based controllers tied into a weather station managed through an algorithm and accessible to staff through a mobile app (see attached for more info).

The controllers and app would be equivalent to a 24-station WeatherTRAK ET Pro 3 for approximately $10,000 each. They come with 10 years of central service (i.e. weather service with algorithm). New freestanding controller cabinets run about $1,500 each and switching out to the new controller from the existing controller would cost about $5,000 each.

Total Grant Amount = 15 controllers x ($10,000 controller + $1,500 cabinet +$5,000 labor) = $247,500.

I've attached our Citywide Parks map, which shows the locations of the 10 Citywide parks (i.e. but not the neighborhood parks).

Please let me know if we need to touch bases regarding more information that might be helpful for the grant.

Project Overview

The City of Hercules is seeking funding to upgrade the existing manual irrigation controllers in our city parks to advanced cloud-based controllers. These new systems will be integrated with a weather station, managed through a sophisticated algorithm, and accessible to staff via a mobile app. This upgrade will enhance water conservation, reduce labor costs, and improve the overall sustainability of our parks.

The City of Hercules plans to install 15 WeatherTRAK ET Pro 3 controllers, which are 24-station cloud-based controllers. Each controller includes a 10-year central service subscription that provides weather-based irrigation schedules through an advanced algorithm. This project will cover 10 citywide parks as indicated on the attached Citywide Parks map. These parks will benefit from improved water management and operational efficiency. The effects of this project will reshape the communities of these areas as upgrading the irrigation will vastly improve community well-being, significantly reduce the water waste through weather-based irrigation, reduce labor and operational costs associated with manual irrigation management, and provide an overall positive contribution to environmental sustainability by optimizing water use. The effects will not only improve irrigation and water use in all of the City's parks.

Project Benefits

Water Management Benefits

Efficiency and Water Conservation

The upgrade to cloud-based irrigation controllers will lead to significant improvements in water management:

1. **Anticipated Water Management Benefits:**

- The new system will deliver water more precisely based on real-time weather data and soil moisture levels.
- This will minimize over-watering and under-watering, ensuring optimal water use.

2. **Efficient Management of Water Supply:**
   - The advanced algorithm and mobile app will enable better scheduling and adjustment of irrigation, enhancing overall efficiency.
3. **Use of Conserved Water:**
   - Conserved water will remain in the creeks, streams, and lakes from the point of origin in the Sierras down to the Pacific Ocean, putting less strain on the ecosystem..
   - This conservation effort will reduce the region's water supply strain, especially during peak usage periods.

Customer Impact and Legal Considerations

4. **Water Supply to Customers:**
   - Customers who use the City parks will have better amenities because the turf, shrubs, and trees will be better maintained; additionally, the project will serve as a demonstration project on how to conserve water.
5. **Potential to Prevent Lawsuits:**
   - By optimizing water use and reducing wastage, the project reduces the likelihood of potential lawsuits due to water wasting and misuse.
6. **Consequences of Not Improving:**
   - Without this upgrade, the city will continue to face inefficient water use, higher operational costs, and potential water restrictions, negatively impacting park maintenance and community satisfaction. Water costs have increased 100% over the last decade and the City cannot afford to unnecessarily waste water given technologies are now available.
7. **Current Water Restrictions:**
   - Water restrictions are currently necessary at times due to inefficient irrigation. This project aims to eliminate the need for such restrictions. Converting to cloud-based controllers will allow the City to stop watering 48 hours prior to a rain event.

Broader Concerns

8. **Environmental and Recreational Benefits:**
   - The project will support local flora and fauna by maintaining healthier green spaces.
   - Enhanced park conditions will benefit the community's recreation and tourism sectors, supporting local businesses.

Broader Benefits

Water Supply Reliability

1. **Sub-Basin/Basin Scale Improvements:**
   - The project will enhance water supply reliability at the basin scale by reducing overall water demand.

2. **Collaboration and Information Sharing:**
   - The project will promote collaboration and information sharing among regional water managers through the use of shared technology and data.
3. **Drought Mitigation:**
   - Hercules has experienced drought conditions. This project will help mitigate these conditions by optimizing water use and conserving resources.

Environmental and Economic Impact

4. **Species Protection:**
   - Healthier park ecosystems will benefit local wildlife, including any threatened or endangered species.
5. **Sectoral Benefits:**
   - The project will positively impact the local economy by improving park conditions, attracting more visitors, and supporting local businesses.
6. **Coordination with NRCS:**
   - This project will complement existing work with the Natural Resources Conservation Service (NRCS) by improving water use efficiency in areas connected to the district's water supply.

Planning Efforts Supporting the Project

Plan Description and Objectives

1. **Existing Plans:**
   - The City's Environmental Sustainability Plan supports the project, developed in 2020 to improve resource efficiency and sustainability.
2. **Development and Scope:**
   - The City of Hercules developed the plan in collaboration with local stakeholders. Its scope covers citywide environmental initiatives, including water management.
3. **Support and Priority:**
   - The proposed project is specifically identified in the plan as a key initiative to enhance water efficiency and sustainability.
   - It addresses the plan's objectives of reducing water waste and improving environmental stewardship.

Project Implementation

Implementation Plan

1. **Procurement Phase:**
   - Purchase 15 WeatherTRAK ET Pro 3 controllers and 15 freestanding controller cabinets.
   - Includes 10 years of central service (weather service with algorithm).
2. **Installation Phase:**

- Install new cabinets and replace existing controllers with cloud-based controllers.
- Integrate controllers with the weather station and set up the algorithm.
3. **Training and Monitoring:**
   - Train city staff on using the mobile app.
   - Monitor and adjust the system for optimal performance.

Estimated Schedule

- **Procurement:** 3 months
- **Installation:** 6 months
- **Training and Monitoring:** 3 months

Permits and Approvals

- Necessary permits for installation will be obtained within 6 months.
- Engineering design work has been completed to support the project.

Land and Water Access

- The City of Hercules has access to the parks where the project will be implemented.
- No additional easements are required.

Environmental and Cultural Compliance

- The local Reclamation office has been contacted, and a line item for compliance costs is included in the budget.

Nexus to Reclamation

1. **Water Service Contracts:**
   - The City of Hercules has a water service contract with EBMUD, our water purveyor.
2. **Benefit to Reclamation Project Area:**
   - The proposed work will benefit the Reclamation Project area by improving water management and conservation.

Program Budget

Financial Breakdown:

- Number of Controllers: 15
- Cost per Controller: $10,000
- Cost per Cabinet: $1,500
- Installation Labor per Controller: $5,000

Total Cost Calculation:

15 controllers × ($10,000 per controller + $1,500 per cabinet + $5,000 labor) = $247,500

Total Grant Amount Requested: $247,500

Grant requested: $100,000

50% match of the grant: $147,000

Implementation Plan:

1. **Procurement Phase:**
   - Purchase 15 WeatherTRAK ET Pro 3 controllers.
   - Acquire 15 freestanding controller cabinets.
2. **Installation Phase:**
   - Install new cabinets and switch out existing controllers with new cloud-based controllers.
   - Integrate controllers with weather stations and ensure algorithm setup for optimized irrigation.
3. **Training and Deployment:**
   - Train staff on using the mobile app for irrigation management.
   - Monitor and adjust the system for optimal performance.

Citywide Parks Involved: The project will cover 10 citywide parks as indicated on the attached Citywide Parks map.

Expected Outcomes:

- Enhanced water conservation and efficiency.
- Improved park maintenance and operational savings.
- Positive environmental impact through optimized water use.

This grant proposal outlines the City of Hercules' plan to upgrade the irrigation systems in our parks to advanced cloud-based controllers. By securing the requested funding, we will enhance water efficiency, reduce costs, and promote sustainability in our community. Thank you for considering our application.

Heavy-Duty, Slope-Top, Top-Entry Stainless Steel Controller

Includes control panel, antenna, and terminal boards pre-installed

14-gauge stainless steel, NEMA 3R rated slope-top, top-entry enclosure with key-lock entry to upper and lower compartments. VIT Strongbox Enclosure model no. SB-16SS.

For retrofit installations into this enclosure type, see CH4 (page 32)

Shipped LTL Freight only

16" w x 38" h x 15.5" d   95 lbs.

Station #
12
18
24
30
36
42
48

SA01 Models are Wall Mount

	LC+	ET Pro3	OptiFlow XR
Max station counts (Increments of 6 for conventional)	6-36	12-96	12-96
# of programs	2-4	8	8
Custom programming for every station	✓	✓	✓
Point of Connection (Flow Sensor + Master Valve)	1	4*	4*
Measure flow, trigger flow alerts	Optional	✓	✓
Manage flow across multiple controllers on the same mainline	-	-	✓
Site flow optimization with OptiFlow	-	Optional	✓
Minute-by-minute flow resolution	-	When in OptiFlow group	✓
ET Weather data & rain pause service	✓	✓	✓
Communication	LTE	LTE	LTE
Mobile app	✓	✓	✓
Warranty	3 years	5 years	10 years
Worry-free Wireless Warranty	✓	✓	✓
2-Wire configurations available	-	✓	✓
Panel lock	-	-	✓
Physical remote (32-pin)	-	Conventional	Conventional
Enclosure material	Plastic	Metal	Metal
Max outputs energized (program, manual, pump, MV)	5-7	14-17	14-17
Transformer output power	2 Amps	3 Amps	3 Amps

*1 per 24 stations on conventional. 4 with any 2-Wire controller.

Kyrstie Rhea
SiteOne Green Tech
District Sales Manager – Bay Area
925-549-3123

Smart Irrigation, Perfect Landscapes

The WeatherTRAK ET Pro3 smart irrigation controller uses ET Everywhere®, the most precise, high-resolution weather data available, to create specific schedules to maintain your landscape health with the least amount of water possible.

With its proven ability to tune irrigation to your unique landscape and site characteristics, the WeatherTRAK ET Pro3 controller reduces water waste by only irrigating when it is necessary – saving you time, resources, and money.

Get more done in less time with WeatherTRAK Central programming and management

Real-time flow alerts make every site and schedule perform more efficiently

Speed up wet checks, troubleshooting, and installs with WeatherTRAK Mobile

Irrigation Tuned By The Cloud

WeatherTRAK algorithms consider factors such as weather, plant type, and soil type to know how much water is available to the plant within the soil. If the plant has enough water, irrigation isn't scheduled. These decisions are automatically planned and constantly optimized.

hydropoint.com/**weathertrak**

ET Pro3®
Key Features

Overview

- 12 to 96 stations - with backlit display and touch interface
- Six station modularity
- Five-year warranty
- Worry-free Wireless Warranty™ covers cellular technology upgrades

Programming Features

- Eight simultaneous programs with five program modes and two start times
- Program all settings at controller, or remotely
- Independent station programming (72 cycles/station) with automated cycle and soak
- User-defined water days and water windows per program to comply with agency regulations
- Built-in WeatherTRAK Scheduling Engine optimizes by plant, soil, sprinkler, sun exposure, and slope data
- Automated daily runtime adjustments using site-specific ET Everywhere weather data
- Percent adjust to enable fine-tuning by station
- Automated skip days based on zone-specific soil moisture depletion
- Specific scheduling for sports turf and high desert sites
- Runtime rationing protects plant health under constricted water windows
- Stacked station manual watering from 1-99 minutes

Integrated Flow Features

- Mainline/catastrophic break detection and shutdown
- Real-time station-specific flow monitoring and control
- Local and remote station-learned flow
- Fault detection, diagnostics, and alerts
- Supports up to four flow sensor inputs and master valve outputs
- Supports normally open or normally closed master valves
- Customizable flow alert thresholds

- Upgradable to OptiFlow® for advanced flow management and multi-controller automatic scheduling
- Supports Data Industrial®, CST, Netafim™ flow sensors and custom "K and offset" values
- Compatible with WeatherTRAK FlowLink®, FlowShare, Flow3, and FlowHD

Hardware Features

- Integrated flow sensor support included
- Dedicated master valve and pump start
- Commercial-grade screw-less wire terminals
- Built-in amp meter for fault protection and diagnostics
- Cellular radio and first year of WeatherTRAK Central service included
- LTE cellular communication for the best coverage and performance
- 32-pin connector for hardware remote like the TRC Commander and Irritrol® ProMax™
- New features and firmware pushed over-the-air using WeatherTRAK Cloud Update
- Share one rain sensor across multiple controllers with RainShare™
- Robust built-in surge protection integrated directly into the controller

STATION COUNT	POINTS OF CONNECTION SUPPORT
12 – 36	1 standard
36 – 48	2 (requires flow key)
72	3 standard
96	4 standard

Specifications

**Electrical & Enclosure Specifications**

Input Power	120 VAC +/- 10%, (60 Hz) or 220 VAC +/- 10%, (60 Hz)
Output Power	24 VAC (60 Hz) • 1.0 Amp (1000mA) max per station output including a pump start • 1.0 Amp (1000mA) max per master valve output • 3.0 Amps (80 VA) total load Up to 17 terminal outputs energized simultaneously (8 stations, 1 manual, 4 pump starts, 4 master valves)
Consumptive Power	Idle State: 2.5 Watts Maximum Power Requirements for Irrigation State: 70 Watts
Certifications	EPA WaterSense® Approved, FCC Certified, UL Listed, 100% SWAT tested
Enclosure Options	Wall Mount Enclosures • 16 gauge wall mount enclosure available in stainless and powder coated finishes • Key-hole mounting for wall mount enclosures makes it easy to install • Easily adapts to a small 14 gauge pedestal, also available in two different finishes VIT Strong Box Stainless Steel Pedestal Enclosures Retrofit Chassis for Existing Enclosures All come with key lock entry NEMA 3R weather-resistant

Find out more at hydropoint.com/weathertrak

HydroPoint
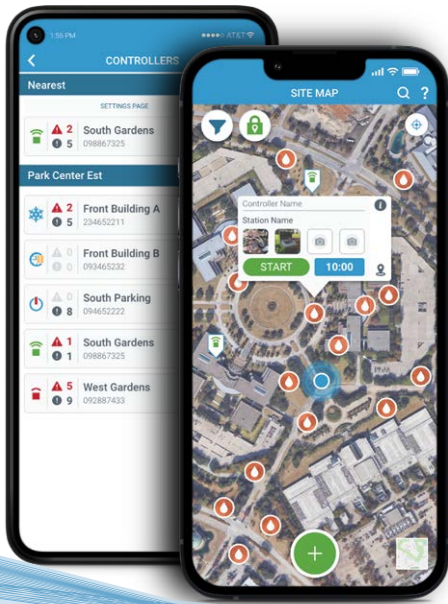
WeatherTRAK® Mobile

Smart Irrigation

Whether you're a landscape maintainer or a facilities manager, the WeatherTRAK mobile app puts control of your smart irrigation system in the palm of your hand. From initiating manual watering for site establishment, to wet checks and everyday maintenance, WeatherTRAK gets the job done faster and smarter.

WeatherTRAK mobile delivers the information you need front and center, whether you manage water across hundreds of sites or maintain the landscape at one. It turns your device into a remote control.

Enable field techs to run manual irrigation and perform wet checks, without ever touching the controller

Provide irrigation managers with tools to manage alerts and change controller and station settings across their entire portfolio

Find the nearest sites and controllers so you can plan where to go next

The Right Tool For Every Situation

The WeatherTRAK app enables you to do a wet check as you walk the site, check coverage, or fine-tune station settings. Instantly geolocate any of the previously stored irrigation assets within an interactive map. Receive and respond to alerts, get in-depth details, and clear issues from your phone when you've confirmed a resolution. Optimize your water usage for ET-based irrigation schedules, and program or adjust your new controllers and stations.

hydropoint.com/**weathertrak**

Mobile
Key Features

Intuitive Design
Every task can be accomplished faster, indoors or outdoors, due to its logical workflow.

Controller Programming
Setting up new controllers or editing existing ones has never been easier. Enter settings changes through the mobile app to remotely configure most of the controller settings found on the Program page of WeatherTRAK Central.

Station Programming
Setting up new stations or tuning existing ones, you don't need to enter data into worksheets or stand at the controller. Instead, you can easily enter information through the mobile app to remotely configure all settings options for each station.

Sophisticated Site Mapping
Save time with a comprehensive overview of your site and more in-depth capability to plan visits and maintenance:

- Place, filter, and arrange your assets on the Site Map to create a comprehensive as-built plan
- Interact with assets as needed and provide details from multiple information points: photos, asset names, model numbers, product notes, date and user details, and more
- Begin a manual watering operation directly from your map, no matter whether you're on-site or back in the office
- Station Location asset marks the area where watering will occur

Location-based User Interface
Know where the nearest Site and Controllers are based on your location.

Remote Manual Irrigation
Irrigate one station at a time, or create a sequence of stations to run, each with individual run times to simplify spring start-up, wet checks, repairs, and supplemental irrigation. All OptiFlow enabled controllers have the added ability of controlling up to 9 stations simultaneously, with "overlap" watering capabilities.

View and Clear Flow and Electrical Alerts
Keep the site running at optimal performance through at-a-glance indications if water is wasted or potentially damaging plants.

Set Rain Pauses
Initiate a rain pause for up to 200 days.

Master Valve Override
Attach a hose for local watering without manually turning the valve.

Adjust Station Level Percentage
Augment daily ET data by fine-tuning irrigation amounts to your specific landscape needs.

Secure Controller Access
Remotely unlock OptiFlow® XR controllers to run panel diagnostics, then re-lock them to keep them safe from tampering.

Device-based Language Support
Display the app and built-in help in English or Spanish, based on the current language settings of the phone.

Pinpoint the Problem
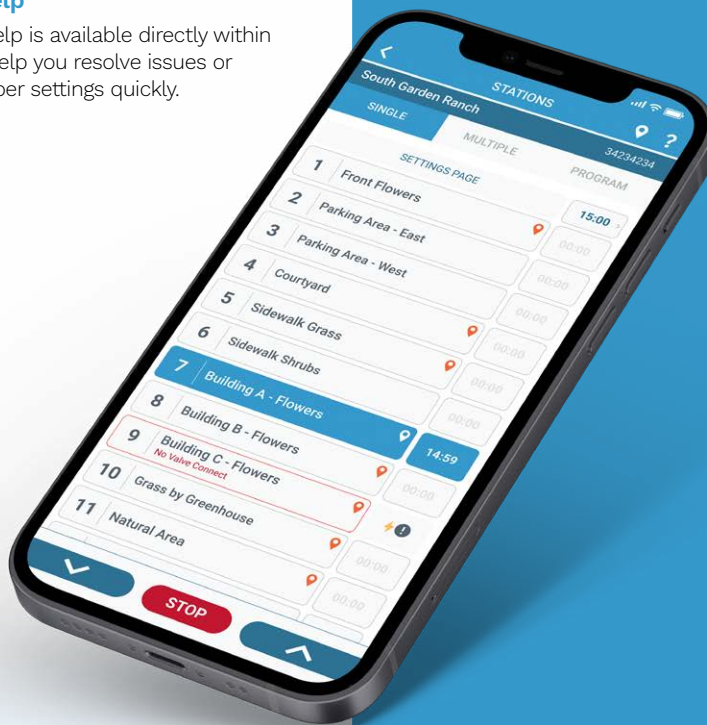Automatically reveal the source of Station High Flow Alerts on OptiFlow enabled controllers.

Built-in Help
Additional help is available directly within the app to help you resolve issues or confirm proper settings quickly.

REQUIREMENTS

- iPhone and iPad – Requires iOS 13 or later
- Android devices – Requires Android KitKat (6.0) or later
- Internet connection required
- Location services must be enabled to use map features
- Controller/station programming and master valve override require WeatherTRAK LC+, ET Pro3, or OptiFlow XR

Some features may require the latest version of controller firmware to use.

Find out more at hydropoint.com/weathertrak

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