

# Council Business Meeting

December 21, 2021

<b>Agenda Item</b>	Award of Contract – APRC Irrigation Central Controller	
<b>From</b>	Michael A. Black, AICP	APRC Director
<b>Contact</b>	<a href="mailto:Michael.Black@ashland.or.us">Michael.Black@ashland.or.us</a>	

**SUMMARY** APRC is requesting approval of a contract with HydroPoint for the installation of an Irrigation Central Controller at Lithia and North Mountain Parks for \$144,316.62.

A central irrigation control system is used to manage and monitor irrigation infrastructure. A functional central controller will communicate with individual clocks to initiate run-times and communicates with flow devices and master valves to detect leaks and shut the main water line off when necessary. The existing central controller was installed in the late 1990s and is failing. Upgrading the irrigation control system will give APRC real time leak detection and monitoring reports and should result in measurable water savings. This project is an approved CIP project for the BN21-23.

On November 1, 2021 APRC published an Intent to Bid (ITB) on the City of Ashland’s website. APRC requested bids for the installation of new Irrigation Central Controller system for Lithia and North Mountain Park. The bid requested a central controller that is cloud based and will communicate with individual clocks to initiate run-times and communicate with flow devices and master valves to detect leaks and shut the main line off when necessary. The system must be able to be accessed through a mobile app for in-field work and managed from any computer connected to the internet, provide real time alerts that can be sent to multiple users, measure water flow in real time, utilize advanced technology to continually alter run-times to deliver the most efficient water schedule based on localized conditions and includes superior data collection/management tools.

On November 15, 2021 One bid was received.

1. HydroPoint total for parts and installation \$144,316.62  
Annual Weather TRAK Central and OptiFlow Service \$4,355.00 per year (the first year is included in the above costs.)

## **POLICIES, PLANS & GOALS SUPPORTED**

APRC Commission Goals 2021-23 Biennium

Goal 7: Explore and Implement, as funds allow, Capital Improvements that would reduce long term maintenance costs with a goal for the improvements to pay for themselves.

## **CITY COUNCIL'S 2019-2021 BIENNIAL GOALS**

- A. Prioritize the "Essential Services", set forth below, including the associated 17 infrastructure: Parks Maintenance
- B. Develop and/or enhance the following "Value Services" by leveraging the City's 2 resources. Water Conservation
- D. Develop current and long-term budgetary resiliency.

## **CITY OF ASHLAND CLIMATE AND ENERGY ACTION PLAN (CEAP)**

Although the operations of APRC are not specifically included, reducing APRC water consumption is consistent with the following strategies within CEAP:

- Strategy NS-2. Manage and conserve community water resources  
Strategy NS-3. Conserve water use within City operations.

## **BACKGROUND AND ADDITIONAL INFORMATION**

When the existing central controller, known as Scorpio, was installed it communicated with irrigation infrastructure in almost all of the developed parks in the APRC system. Run-times were able to be set manually for all parks from a single computer station in the Lithia Park Shop. Individual zones could be run manually using radio signals via hand-held radios for testing and repair in the field. Flow devices were connected to master valves that would detect major main line breaks and would shut off the valve.

Over time the system began to fail, and individual parks were taken off the Scorpio system and put-on stand-alone clocks. The only parks currently on the Scorpio System are North Mountain Park and Lithia Park. It is now necessary for staff to go to each park to increase or decrease run-times depending on weather conditions, which significantly decreases efficiency. Additionally, the flow detection devices are not functional and cannot be repaired. This has resulted in leaks going undetected which can cause damage to infrastructure, increase expenses, and deplete available water resources. There are also communications issues with the remaining components in Lithia Park and North Mountain Park.

Outdated irrigation systems have the following negative impacts, all of which have been directly experienced by APRC with the existing central controller.

- Overwatering, underwatering, and poor leak detection
- High water bills
- Risk to plant/landscape health
- Data blindness
- Use of outdated technology
- Inefficient use of staff time

Staff began due diligence on exploring replacement options earlier this summer. The vendors that responded to inquiries presented two general options for replacement.

1. Changing out the system with an upgraded version of what we have in place. This would require handheld radios for in-field work, would not provide real time alerts, would require all watering scheduled to be entered and changed manually and would only be accessible from a single computer (soft-ware based)
2. Changing out the system with a cloud-based system (WeatherTRAK from HydroPoint). This can be accessed through a mobile app for in-field work and managed from any computer connected to the internet, provides real time alerts that can be sent to multiple users, measures water flow in real time, utilizes advanced technology to continually alter run-times to deliver the most efficient water schedule based on localized conditions and includes superior data collection/management tools.

### **Modern Tools for Management**

- **Increased Control Access**

A cloud-based system allows easy access through mobile phones and any computer, not just a single computer as required when using software-based systems. Access can be customized by user to get information and different levels of access to the right people while allowing only authorized people to make changes to schedules and other system settings.

- **Track Assets, Locations and Repair Logs**

The mobile app can be used by maintenance staff to inventory irrigation infrastructure and assign map locations. The asset map is used by the system to identify infrastructure components that needs to be repaired when errors are detected. Repair logs can also be entered through the mobile app by staff to better track when and where repairs are made.

- **Superior Reporting Capabilities**

Multiple reports types are customizable and can be created instantly or automatically generated and delivered to multiple users. Report types include: Controller Settings, Usage, Alerts, Budget Management and Drought Management. Having usage data at our fingertips will allow us to use water wisely and better manage the water budget.

- **Flow Detection Capabilities**

Flow sensors can be installed alongside a master valve at every point of connection that communicate back to the central system. Flow thresholds can be set up that will trigger alerts to staff to fix small leaks or automatically shut the main line at the master valve if a large break is detected. There are flow sensors that can detect usage down to 1.5 gallons per minutes.

- **Real Time Alerts**

Real time system alert notifications can be set-up and customized for individual users. This will allow staff to act immediately, before an issue becomes a bigger problem. Types of alerts include No Flow, Station Low Flow, Station High Flow, Leak, Mainline Break, Valve Short and many more. These alerts will efficiently direct staff to problems that can be addressed based on severity.

- **Smart Scheduling**

Landscape level factors can be used to automatically adjust run-times based on variables such as slope, soil type, vegetation type and evapotranspiration (ET). HydroPoint uses a proprietary system that measures ET down to the square kilometer. This does not preclude staff from making manual adjustments as necessary for special projects or if ET readings are not 100% accurate for specific zones.

- **Customer Service and Equipment Issues**

Staff will seek a system that is capable of providing local support for hardware issues and has the capability to provide remote customer service for the program. A cloud-based system can be directly accessed by customer support so a specific solution can be provided for issues.

**Assessment**

The benefits listed above should result in measurable water savings from a natural resource perspective and a monetary perspective.

Staff time will also be managed more efficiently. Realtime flow detection and alerts will immediately notify staff of problems that need to be addressed. The detection system is capable of identifying specific zones to point staff in the right direction.

**FISCAL IMPACTS**

The total for central controller parts and installation is \$144,316.62. This project is funded with Food and Beverage tax.

**STAFF RECOMMENDATION**

Staff recommends the approval of the contract award and authorization for the City Administrator to execute the attached contract for HydroPoint for the installation of an Irrigation Central Controller at Lithia and North Mountain Park.

**ACTIONS, OPTIONS & POTENTIAL MOTIONS**

- 1.) I move to approve the contract award for HydroPoint for the installation of an Irrigation Central Controller at Lithia and North Mountain Park
- 2.) I move to deny the contract award for HydroPoint for the installation of an Irrigation Central Controller at Lithia and North Mountain Park ...

**REFERENCES & ATTACHMENTS**

Attachment 1: ITB

Attachment 2: Contract

Attachment 3: Quote from the Vendor



**INVITATION TO BID – GOODS AND SERVICES**  
**INTERMEDIATE PROCUREMENT**

Release date: November 1, 2021

Requested by: Tara Kiewel  
Administrative Analyst  
Ashland Parks & Recreation Commission (APRC)  
340 S. Pioneer Street, Ashland OR, 97520  
Tel: 541.552.2257  
Email: [tara.kiewel@ashland.or.us](mailto:tara.kiewel@ashland.or.us)

Bids are due **BY Monday, November 15, 2021 12:00 pm PST**

Project name: Ashland Parks and Recreation Commission Irrigation Central Controller

**TIME LINE**

**INSTALLATION TO BE COMPLETED BY THE END OF MARCH 2022**

Firm bids may be emailed, mailed or hand delivered to the contact information provided above. **Contractors shall submit their bids on company letterhead.** Late bids will not be accepted. Terms or discounts which are conditioned upon payment within a certain time will not be considered for purposes of comparison of bids.

The successful contractor will be required to enter into a contract with the City for goods and services and provide certificates of insurance in their own name for General Liability (\$2M), Automobile (\$200K) and Workers' Compensation. Subcontracting will not be permitted. Proof of insurance is required at time of bid submittal.

“OR EQUAL:” Any brand name listed in the specifications as “or equal” or “or equivalent” shall establish the minimum requirements for quality, utility, durability, function, purpose, etc. Other product brands may be offered that are equal to or better than the product brand name. Bidder may show cost difference, alternates and options in the space provided in the quote. This clause is not meant to be restrictive, but to set the minimum standard. The City shall determine, in its sole discretion, whether a product offered is “equal.” When the designation is “or equal” or “equivalent” the City shall make its decision after bid closing.

**SCOPE OF SERVICES**

## **Ashland Parks and Recreation Commission Irrigation Central Controller Equipment, Software, and Installation**

**Scope:** Installation of new Irrigation Central Controller system for Lithia and North Mountain Parks in Ashland, Oregon.

Central controller must be cloud based and communicate with individual clocks to initiate run-times and communicate with flow devices and master valves to detect leaks and shut the main line off when necessary. System must be able to be accessed through a mobile app for in-field work and managed from any computer connected to the internet, provide real time alerts that can be sent to multiple users, measure water flow in real time, utilize advanced technology to continually alter run-times to deliver the most efficient water schedule based on localized conditions and includes superior data collection/management tools.

System must be capable of providing local support for hardware issues and have the capability to provide local or remote customer service for the program.

Installation for two Parks:

- **Lithia Park – 12 stations with 123 zones**
- **North Mountain Park – 3 Stations with 85 zones**

### **Preferred Vendor Qualifications**

- Proven to save water in previously conducted Water Agency or University studies, with published results
- Proven to conserve water as demonstrated by U.S. EPA Water Sense
- Proven by the California EPA to reduce dry weather runoff in previously conducted studies, with published results Proven by the Irrigation Association Smart Water Application Technology (SWAT) protocol to have performed perfectly in a laboratory test to:
  - Deliver 100% (perfect) scores on Adequacy of water applied
  - Deliver 0% (perfect) scores on Excess water applied
- Proven by LADWP, in a published study, to deliver up to 95% of the total conservation potential on any given landscape
- Proven to have worked in the commercial world for at least 10 years, to ensure business and technological stability
- Proven to save water, based on at least 5 real-world customer case study references
- The Company has a commitment to Customer Service, as demonstrated by
  - Bi-lingual technical support
  - Field based Product Specialist employees
  - Strong relationship with local distribution

### **Weather Data**

- Weather data shall be provided from a service, not a device sensor, and shall be uploaded automatically on a daily basis to all field controllers.
- Real-time evapotranspiration (ET) must be provided, on a daily basis, to each controller, accurate to 1 square kilometer for each controller.
- This data must be automatically provided using a weather service that uses the internet to gather ET and rain data from multiple weather sources and uses the most appropriate data for a specific controller based upon its latitude and longitude, and calculates ET using ASCE Penman-Monteith equation.
- The weather data collected must include relative humidity, temperature, wind speed, and solar radiation. Information is to be provided by the National Oceanic and Atmospheric

Administration's (NOAA) Earth System Research Laboratory (ESRL) Global Systems Division (GSD).

- Weather sources, such as connected temperature gauge, distilled water cups or a single weather station, are not acceptable.
- The Vendor must demonstrate the ability to transmit, via wireless network, daily weather data to each irrigation controller
- The Vendor must not rely on a single weather station as source of weather data, so as to eliminate a single point of failure.
- Weather Data must utilize all of the following factors to properly construct watering schedules: temperature, solar radiation, relative humidity and wind
- This Weather Data must be accurate, and resolute, to within one square kilometer (zip codes are not an acceptable method of defining Ashland Parks and Recreation Commission microclimates)
- The Vendor must employ at least one full time Climate Scientist to fact-check weather data that is sent to our controllers
- The Vendor must demonstrate redundancy in its' delivery of weather data, so as to insulate Ashland Parks and Recreation Commission from service interruption, including: Multiple climate center locations, Multiple communication networks
- The Vendor must demonstrate the ability to transmit weather data to each controller over multiple communication networks, so as to insulate Ashland Parks and Recreation Commission from service interruption
- The Vendor must support this claim, and provide proof that this does not conflict with any existing industry patents
- The method underlying the weather data, as required for calculating irrigation schedules, must utilize the Penman Monteith method of calculating evaporation and transpiration, as recommended by Irrigation Association
- The Vendor must be able to reproduce historical weather data, by microzone, for the purposes of weather normalization as we track our water budgets and measure our conservation results on a year-over-year basis

### **Automated Irrigation Scheduling**

- employ scheduling engine software that removes guesswork from irrigation scheduling
- employ software that allows each zone to be programmed to run in one of three modes: a User schedule, a User schedule that is auto-adjusted with weather data, or a fully automated schedule using custom programming
- employ software that operates on a true soil moisture depletion model
- employ software that allows independent station programming to include plant type, root depth, soil type, slope, location of sprinklers on slope, sprinkler type, precipitation rate, irrigation system efficiency, sun exposure, and useable rainfall
- employ software that utilizes the above to track and display daily depletion, for each unique zone on any landscape
- automatically adjust run time minute schedules on a daily basis, according to changing weather, for each individual zone on any landscape
- automatically calculate cycle and soak intervals, on a daily basis, to mitigate dry weather runoff, for each individual zone on any landscape
- be programmable for day of week exclusions and water windows, but must also automatically calculate next allowable day watering schedules based on carrying over depletion information for each zone on every landscape
- offer a "percent-adjust" feature that allows each unique zone on any landscape to be upward or downward adjustable to apply more or less ET to any zone
- offer at least eight programs with independent water day patterns and schedules.
- offer second start time for high ET requirements

- be able to provide 365-day calendar scheduling

### **Wireless Internet Access**

- Selected controller must operate without the need for telephone lines, RF (radio) networks, repeaters or CAT5 wiring
- Selected controllers must integrate 4G/LTE modems
- Selected controllers must communicate to a private Internet sub-network
- The Central Control System must employ https and SSL security.
- The Central Control System must employ end user sign in security that employs forced password changes as we require.
- Selected controllers must not require that the Ashland Parks and Recreation Commission procure and manage individual cell modem accounts for each controller
- Selected controllers must be manageable, and configurable, via Internet portal, from any Internet-enabled device, provided that it has proper permissions
- Vendor must offer Worry Free Wireless carrier protection if 4G/LTE becomes obsolete

### **Cloud-Based Central Control Software:**

- Management portal software must be 100% Cloud-Based
- System must have a robust Application Program Interface (API) for exporting data to LASUD Building Management or Help Desk ticketing systems
- Management portal must not require dedicated PC hardware or software
- Management portal must not impose any security, infrastructure or product support impact on The City of Ashland I/T department.
- Management portal must offer ability to program all station variables in real time
- Management portal must operate in real time, so that all changes take immediate effect.
- Selected controller management portal must be password protected
- Controllers must be able to use the Internet to manage schedules for multiple controllers on a single Point of Connection
- Controllers must be able to use the Internet to optimize watering schedules automatically; even for multiple controllers behind a single Point of Connection
- Management portal must offer ability to program start times, and stagger or suspend start times in event of drought, fire, low pressure, scheduled maintenance, etc.
- Selected controller must deliver ability to “pause” or suspend irrigation automatically, in event of rain, or other user-determined purpose via a Web command
- Selected must deliver ability to differentiate “adjustment” messages between turf and trees
- Selected controllers must be programmable to set water budgets, and track daily flow against established water budget, per landscape and in aggregate
- Vendor must offer, via Internet Portal, Customer Support center and field based product specialists a suite of irrigation monitoring services.
- The Central Control System shall allow direct, real-time access to make programming changes, run stations, check for flows, check master valve operation, and turn irrigation on or off
- The Central Control System must allow for irrigation schedules to be constrained by a water window with the option to have each station stay inside water window or not.

### **Central Irrigation Management and Control Standard**

- The Central Control System must allow for irrigation schedules to be controlled using user-entered custom plant factor/crop co-efficient.
- The Central Control System must allow for ET to be set to ON/OFF per each station.
- Failure of the central computer system or communication links to the field controller must not affect normal, water management and/or flow management operation of

irrigation controllers.

- Water usage data shall be automatically retrieved daily from each controller and reported on by the Central system or have the ability to be exported to an Excel or PDF file, provided that a flow sensor is installed at each controller location.
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- The Central Control System shall be able to automatically turn off all controllers due to an operator set rain amount, communicating on the system instantly.
- The Central Control System shall allow all program data, log data, summary data and alert data for each controller to be selectively printed by controller. All reports must be exportable into either Adobe PDF format for Microsoft Excel format.
- The Central Control System shall allow users to view and/or override any changes made at irrigation controllers. The Central Control System shall track all changes made at the field and Central. Changes shall be recorded with a before and after value for each individual field modified. Users shall be able to report on user level changes for up to 3 years' worth of changes including selection of specific days or date ranges.
- The Central Control System must provide the ability to perform station AND / OR Program grouping – the ability to create a ‘virtual controller’ comprised of any 1 or more zones on a single controller, or across a group of controllers across the entire deployment. Station grouping must be highly customizable, and allow system operators to make global changes to a variety of irrigation parameters, including plant type, system efficiency, and % adjust, precipitation rate, etc.
- The Central Control System must be able to issue global pauses, in order to suspend irrigation for a single controller, a group of controllers, or all controllers across the entire deployment. The system must also be able to generate a “Winterize” message in order to suspend irrigation without amending soil moisture depletion.
- The Central Control System must be able to issue an event pause for a specific date set in the future with the ability to set this as a recurring event daily, weekly, monthly etc.
- The Central Control System must be able to issue an event pause at 30 minute increments that would override master valve operation and allow for use of quick couplers or other manual irrigation without generating an alert.
- The Central Control System must be configurable to send alarms, via email or text, to designated users when flow anomalies are detected. Multiple parties can be designated to receive these messages.
- The Central Control System shall provide a single web view of all user available controllers and allow the list to be filtered by account, site, controller name, status, and serial number.
- The Central Control System shall issue alerts each day based on operator-set filters including days of week and time of day. Users shall be able to select specific alerts to be on or off.
  
- The Central Control System shall report alarm conditions at a minimum to include the following:
  - o Communication failures and successes (identifies type of problem, time, and location).
  - o High or excessive, low flow and no flow conditions with the time (AM/PM) of the occurrence for each individual valve.
    1. Main line breaks during scheduled irrigation as well as all other times when flow exceeds user set parameters.
    2. Manual watering and manual operation by station and time in the field controller. Current (amperage) alarms by station and time, both high and low, and output shorts due to solenoid failure.
    3. Water Window / Depletion Alerts when moisture levels drop below recommended



levels.

4. The Central Control System shall issue email or text messages notifying the user of when alerts are cleared.

- The Central Control System shall have the ability to allow alert-only access for up to 5 additional users per controller.
- All active and cleared alerts shall be stored and have the ability to be reported by controller, by Alert Type and by custom date ranges.
- The Central Control System shall be able to provide and print a water management report including a graph depicting by month the amount of irrigation water used compared to a monthly allotment in HCF or gallons, and ET weather demand for the month, with a percent savings without the need to export data to any formatting program in order to produce said reports.
- The Central Control System shall have Water Budget Manager capability. Water Budget capability shall allow users to create and enter up to 3 different irrigation target budgets and track daily status against these budgets via 3 totalization methods including 1) real time flow (when flow is installed) 2) estimated flow or 3) user entered meter reads/water bills. Central Control System shall have the ability to read and display real time flow and operating status on demand at any time within the Central Control interface.
- Central Control System must have the ability to shut down valves when pre-determined flow thresholds have been exceeded.
- Central Control System shall come integrated with Google Maps or similar mapping feature. Mapping feature shall allow for GPS mapping of controller and backflow location in a user editable interface.
- The Central Control System shall have an automated Account Report that lists controller setting exceptions that may impact water savings and management.
- The Central Control System shall have the ability to auto schedule reports to be generated on a recurring basis, and to have reports “auto-delivered” to an end user’s email account.
- The Central Control System shall have the ability to allow users to set specific Maxim Allowable Depletion (MAD) levels for each zone. Users shall have ability to reset all depletion levels back to 0% at any time.
- The Central Control System must provide the current flow rate, and set of active stations, for any flow enabled controllers from the same manufacturer.
- The Central Control System must provide daily measured consumption / water usage reporting for a single or multiple controllers from a single site or across multiple sites in an enterprise by calculating the station assigned flow rate and the station runtime. The report must provide estimated station consumption / water usage by categories such as sprinkler type (spray head, drip, ...) and plant type (cool season turf, shrub, trees, ...).
- The Central Control System shall display an area description for each station including the station’s location, the type of plant material irrigated and type of irrigation equipment used.
- The Central Control System shall contain an application that allows Water Budget Management. This application must enable our staff to be able to enter historical water billing information, set target budgets, and then be able to monitor flow information to track against budgets as data is accumulated from flow sensors, or as water bill data is entered into the application.
- The Central Control System must contain an application that allows Site Asset Management. This application must enable our staff to be able to map all classes of Irrigation and Landscape assets, using latitude / longitude coordinates, and place them in an Internet-based site map.
- The Central Control System must contain an application that manages Drought and Compliance with Drought restrictions. The Drought Management application must be

able to:

1. **Identify Site Specific Drought Stage Classification** Allow selection of appropriate water agency for each site, and have the application automatically determine the current drought stage, associated drought restrictions and recommendations for support water agencies.
2. **Create Site Specific Drought Response Plans** Allow ability to create response plans for each drought stage's restrictions and recommendations. These plans can include making programming changes across multiple controllers using Station Grouping or simple policy changes such as limiting manual irrigation. To track and verify that the site is irrigating in the appropriate window see the site water window compliance management tool below.
3. **Manage and Verify Site Drought Response Plan Implementation** Allow site's water manager to be able to review, make notes and implement the site's response plan and then indicate that the site is now in compliance with the water agencies drought stage requirements.
4. **Comprehend Multi site Drought Restrictions and Track Compliance** Allow easy tracking of the status of each site's compliance using Drought Manager Account Reports or Drought Manager Site Reports.

- The system must provide the ability to perform time/date stamped notes, and be able to store documents or images of required site assets. This asset system must also provide the ability to "lock" asset grid coordinates, to prevent errors once assets are mapped.
- The Central Control System shall provide customizable user access control over specific features and change authorization over programming per log in.
- Central Control System shall keep a history of all program changes for up to 3 years for changes made at the controller and via the web. Changes will be tracked by user and by date and can be viewed any time in a simple report.
- Central Control System shall user to save and name complete set of configurations and the ability to restore those configurations at any time with a simple click.
- Central Control System shall allow user to compare and view differences between settings on controller at any 2 dates for the last 3 years.

#### **MOBILE APPLICATION / REMOTE CONTROL**

- Central Control platform shall include a Free Mobile Application
- Mobile App must operate on both Apple IOS and Android devices
- Mobile App shall not be a web page accessed on mobile device but must be a native mobile app
- Mobile App shall have ability to run stations manually 1 at a time or in sequence
- Mobile App shall have the ability to manually operate multiple stations at the same time
- Mobile App shall have the ability to adjust ET% on a station-by-station level
- Mobile App shall have the ability to view all alerts per controller
- Mobile App shall have the ability to program each station according to specific landscape variables such as:
  1. Plant Type o Root depth
  2. Soil Type o Sprinkler Type o Precipitation Rate
  3. Slope factor o Location of sprinklers on Slope
  4. Sun Exposure o % Adjust for ET values applied to station
  5. Allow Usable Rainfall

- Mobile App shall have the ability to learn flow at each station
- Mobile App shall have the ability to create site assets, and “pin” them to a cloud-based site map

## REPORTING

The Central Irrigation Control System must include flexible and robust reporting. All reports must have the ability to be “subscribed” by our users, and delivered automatically to our users over email and customizable times and dates. The Central Irrigation Control System must be able to produce the following reports:

1. **Account Compliance Report:** Report must show all sites within our account, and if they comply water window matrix rules set by our users on the Drought Management application. Usually, water window rules reflect the water agencies’ restrictions. This report must be able to be exported to Excel or PDF
2. **Controller Inventory Report:** Report must provide an inventory and analysis of all the controllers for our sites. Data must include Site Name, Controller Name, S/N, Firmware version, Flow Mode, Total # of stations, Station Operation Mode, Status, Rain Pause and Alert Status. This report must be able to be exported to Excel or PDF
3. **Controller Setting Change History Report:** Report must provide the ability to track all programming changes made to a controller. This report must show all the individual setting programming changes made to a controller for any selected date range. The report must include information on who made the setting change, the change date and time, the old setting value and the new setting value. This report must be able to be exported to Excel or PDF
4. **Controller Settings Detail Report:** Report must provide a detailed list of a controller's current settings. We must be able to optionally create a report of the controller's settings for a selected date. The controller settings report must include settings in the following sections: setup, communication, flow, days/times, station, and crop coefficients. This report must be able to be exported to Excel or PDF
5. **Controller Topology Report:** Reports must provide a visual representation of controller’s current flow threshold, day/time configuration settings. Report must also provide configuration showing multiple points of connection and mainlines. Our users must be able to choose to include station information in this report. This report must be able to be exported to Excel or PDF
6. **Single Controller Settings Difference Report:** Report must show the differences between two sets of controller program settings. The program settings are from a single controller (two different dates). This report supports configuration settings after September 1, 2014. This report must be able to be exported to Excel or PDF
7. **Multi-Controller Change Analysis Report:** Report must provide the ability to track all programming changes made to all the controllers for which our users, or any of our contractors, have access. This report must be able to be exported to Excel or PDF
8. **Multi-Controller Settings Change Report:** Report must provide the ability to track all section level programming changes made to multiple controllers. This report must have a graphical chart and a summary table of all the setting changes made to the user-selected set of controllers for the selected date range. The report includes the number of changes made to each settings section per controller. This report must be able to be exported to Excel or PDF
9. **Water Window Compliance Report:** Report must graphically highlight if the sites within selected accounts comply with water window matrix rules set by the user as a report option. This report must be able to be exported to Excel or PDF
10. **Controller Estimated Usage Report** Report must use Runtime and Station

Reference Flow information to provide Estimated Water Usage for a selected controller. The report must graphically depict water usage by plant type, and also by water delivery method. This report must be able to be exported to Excel or PDF

11. **Multi-Controller Measured Usage Report:** Report must provide water usage per controller allowing multiple controller monitoring, leak and unauthorized usage analysis. This report must have a graphical chart, and easy to read data table, of total water usage for the user-selected set of controllers. This report must also include the total water usage (CCF, Kgal, Gal) collected by the controller's flow sensor for the selected date range. The water usage must be segmented irrigation category and/or Calendar Quarter. This report must be able to be exported to Excel or PDF
12. **Multi-Controller Runtime Report:** Report must provide runtimes per controller, allowing multi-controller monitoring and estimated water usage impact analysis by station mode or program. This report must also have a graphical chart and easy to read data table of total runtime for the user selected set of controllers. This report must also include the total number of minutes the controller ran for the selected date range. The runtimes must be segmented by station mode (Auto, User ET and User no ET), Program or Calendar Quarter. This report must be able to be exported to Excel or PDF
13. **Single Controller Measured Usage History Report:** Report must provide daily water usage and ET for troubleshooting, monitoring water budgets and historical trending of actual water usage. Report must have a graphical chart and easy to read data table of water usage information for the selected controller. This report must also include the water usage (CCF, KGal or Gal), the ET, alerts, events and the runtime for the selected date range. Water usage must be subtotaled by day, week, month or year. The report can be capable of being segmented by either irrigation category or Calendar Quarter. This report must be able to be exported to Excel or PDF Single
14. **Controller Runtime History Report:** Report must provide daily station specific runtimes and ET for troubleshooting, monitoring and historical trending. This report must also have a graphical chart and easy to read data tables of station level runtime information for the selected controller. This report must include the number of minutes each station ran, the ET, alerts, events and the water usage for the selected date range. The runtimes must be subtotaled by day, week, month or year. This report must be able to be exported to Excel or PDF
15. **Multi-Controller Alert Report:** Report must provide the ability to track, troubleshoot and verify site issues and events such as valve or flow alerts. This report must have an easy to read table of the alerts and events that occurred to the user selected set of controllers in the selected date range. The report must also include detailed information about each alert, including when the alert occurred, when it was cleared, the alert duration, alert category, alert severity, information about the affected controller and alert description. This report must be able to be exported to Excel or PDF
16. **Budget Account Report:** Report must show the selected water budget vs. selected actual data usage for the selected account. Actual data usage could be from Water Bills, Measured Usage from billing period or calendar month, Estimated Usage from billing period or calendar month. This report must be able to be exported to Excel or PDF
17. **Budget Comparison Report:** Report must allow us to compare multiple sites, or multiple accounts, at budgetary or actual data usage levels. Actual data usage could be from Water Bills, Measured Usage from billing period or calendar month, Estimated Usage from billing period or calendar month. This report must

be generated as bar chart or line chart. This report must be able to be exported to Excel or PDF

18. **Budget Monitoring Report:** Report must show the water budget, and actual data usage, for selected time periods and unit types for each selected account. This report must allow us the choice to show all data or partial data. This report must be able to be exported to Excel or PDF

19. **Budget Site Report:** Report must show the Budget vs. Actual usage data for selected time periods and unit type for the selected site(s). This report also must allow us to enter cost per flow unit, and use this data to calculate the estimated cost per plant type for the site. This report must be able to be exported to Excel or PDF

20. **Site Usage Report:** Report must show the overall water usage from multiple water usage type data, for selected time periods, for the selected site(s). This report must be able to be exported to Excel or PDF

21. **Account Security Report** Allow users to review active users with ID/PW settings

- **All reports must be exportable to MS EXCEL**

## **FIELD EQUIPMENT**

- The controller must be a complete controller. It must be a self-contained functioning device. It may not be an add-on device or require another control board or device to be present.
- The controller must be Underwriters Laboratory (UL) listed. No alternate electrical, testing, safety or reliability standard is acceptable.
- The controller shall be manufactured in the USA
- The controller must be EPA WaterSense Approved.
- The controllers must be FCC Approved.
- The controller must have built-in 4G/LTE cellular radio for cloud-based communications.
- The controller must have a modular cellular radio for easy component replacement, if needed.
- The controller must have successfully passed the Irrigation Association Smart Water Application Technology (SWAT) testing protocol, and must have registered perfect scores of 100% Adequacy / 0% Excess.
- The controller must be capable of fully automatic, semi-automatic, and manual operation using a keypad that is an integrated part of the controller.
- The controller shall be capable of storing irrigation schedules, monitoring and managing flow information all without the Central System. Loss of communication to cloud server must not impair these functions.
- The controller must be able to be programmed in the field, while standing in front of the controller.
- If the Central System is turned off, removed, or if communication from/to the Central Computer fails, the field controllers must still continue to perform scheduling and flow management functions.
- The controller shall have at least a 3.0 amp 24VAC transformer. The controller must be able to run at least eight (8) programs / valves simultaneously, as well as a manual irrigation event, operation of a master valve, flow sensor and pump start. Valve doubling is not an acceptable method of accomplishing this.
- The controller must utilize large screw-less terminal blocks, that can accommodate field wire in size from 12 to 22 gauge wire, including two inputs per station.
- The Controller must be able to accommodate up to 65 stations
- The controller must deliver station modularity, in 6 station increments, through the

installation of station “keys”.

- The controller must utilize non-volatile memory to retain all programming information during a power Central Irrigation Management and Control Standard outage for up to 10 years.
- The controller must have a built in Ohm reader for field wire diagnostics.
- The controller terminal output must be able to draw up to 1 amp before being considered “over current”.
- The controller must support a System-Over Current feature, which automatically delays one stations’ irrigation if the activated stations are drawing too much current.
- The controller must have a 5 line backlit display, and must have a minimum of three (3) lines by twenty four (24) characters so that scrolling through menus is minimized.
- The controller display shall allow the user to easily move from screen to screen through an intuitive, selfprompting interface so that it is easier for the user to program, read and understand the controller.
- There shall be a minimum of eight (8) regular irrigation start / stop programs Individual station cycle and soak times must be automatically calculated for each hydrozone by the controller scheduling engine
- Second start times for each program must be available to support syringe/propagation events.
- The controller must be programmable at the field controller, as well as being capable of being programmed from any Internet enabled PC, Laptop or tablet device with proper login credentials. It is NOT acceptable if controller is not programmable from the field location
- Programming shall be based on a station level calculated depletion with up to 28 days between irrigation cycles or shall be able to irrigate in minutes and as a % of ETo
- The controller shall have flow management capability as a standard feature whereas the controller shall learn each station’s expected GPM flow rate, and operate up to eight (8) valves at the same time plus the master valve to shorten the water window
- Alerts shall be able to be processed and responded to at both the field controller location and at the remotely via a web browser
- The controller software must be Cloud-Enabled; auto updates should be part of the controllers’ service.
- Controller shall have models with both traditional wire and 2-wire capability. 2-wire capability shall be fully integrated
- Controller must be expandable up to 65 stations, for either conventional wire or 2-wire design, in a single controller. (No use of relay’s)
- The controller shall have built-in amperage meter to accurately measure and diagnose valve solenoid electrical problems such as “no current”, “station short”, “under current”, “over current”, etc.
- The controller must be capable of allowing the user to make changes to the irrigation program via either a web-enabled Internet device, or at the field controller without requiring the user to go back to the Internet management portal to accept the change.
- The controller shall allow for operator-set water window, which prevents irrigation from continuing beyond a set end time. Remaining run-times shall be carried in a hold-over table and shall be applied at the next scheduled irrigation with the system prioritizing which valve to operate based on accumulated ET and the hold-over time.
- The controller shall have the ability to track and report on when an “individual” user is logged into the controller via the Internet, what changes were made while there, and when a user logged out of the controller. These shall be date and time stamped. Changes made at the controller must also be logged.
- The controller shall be able to display for the user a detailed water usage report categorizing for each month the usage during scheduled irrigation, test and manual

key operation, and for non-controller usage such as bleeding valves on manually, using quick couplers or hose bibs.

- The controller must be able to support a wired or wireless rain sensor.
- The system must also allow manual irrigation via Internet-enabled tablet or via a true smart-phone app for both iPhone and Android operating systems.
- The field controller(s) shall be capable of utilizing cellular wireless modem application as communication links to the central management system.
- The field controllers shall be capable of directly receiving, storing, and operating commands downloaded from the central management system. The cellular modem must utilize a 4G/LTE network for system performance, reliability and expanded cellular vendor coverage.
- The field controller shall come with a minimum of five (5) year Warranty from the manufacturer; additional extended warranty should be available through the manufacturer

## **FLOW SENSING**

- There shall be no added charge for flow capabilities on the Central Control System.
- The controller shall have the built-in capacity for sensing flow data; a flow meter input and utilizing a master valve without the addition of sensor boards, decoders, or other pieces of equipment.
- The controller must be able to support up to four (4) separate flow sensors and four (4) separate master valves, without the use of third party equipment or additional Central service costs.
- Up to nine (9) controllers must be able to connect to a single Point of Connection
- The controller, once connected to a flow sensor, must be able to learn flow for each station line based on the resolution of the flow sensor The controller must be able to learn flow from both the field controller, a Mobile App, AND/OR from the Central Control interface/ internet
- The control platform must have an automatic Learned Flow capability
- The controller must be able to detect System High Flow / Mainline break. When a mainline break occurs, the controller must be programmable to either Alert-Only or Alert and Shut Down the master valve. An alert notification must immediately be sent to the central internet management portal via wireless, as well as a text message to the system operator(s) When an alert, such as High Flow is indicated on the controller, the station with the High Flow shall still have an option to come on and then shut off, rather than having the alert keep the station off until someone clears the alert from the central computer or at the field controller
- Central Control System must have the ability to shut down valves when pre-determined flow thresholds have been exceeded
- The controller must be configured to support either a normally open or normally closed master valve
- The controller must be able to be set to System Shutdown, which will immediately close a normally open or normally closed master valve and suspend all irrigation until the controller is returned to the normally operating mode (“controller is on”)
- The controller must be able to detect single or multiple overlapping station high flow faults.
- When the controller determines a station or set of stations are exceeding the cumulative station high flow threshold all active stations will be immediately turned off and faulted. An alert notification must immediately be sent to the central internet management portal via wireless as well as a text message to the system operator
- The controller must be able to detect Low Flow/ No Flow conditions. When a low flow / no flow fault occurs, the controller must turn off all active stations and move to the next

set of stations in the queue

- If 3 consecutive low flow / no flow faults occur then a no flow alarm is raised on the master valve and all irrigation stops until the alert is cleared.
- An alert notification must immediately be sent to the central internet management portal via wireless as well as a text message to the system operator
- The controller must support the ability to exclude individual stations from low flow / no flow testing
- The controller must support the ability to track leaks, such as water running when the system is not irrigating. An alert notification must immediately be sent to the central internet management portal via wireless as well as a text message to the system operator
- The leak detect threshold must be user configurable either at the controller or from the central internet management portal
- The controller must support the ability to track extended leaks by tracking how long the flow rate has exceeded the leak detect threshold. If the flow rate has exceeded the user configurable leak detect threshold for longer than the user configurable time (leak delay + extended leak delay), the controller will close the normally open master valve. The extended leak timer will automatically reset when the flow rate drops below the leak detect threshold. The controller will still allow normal scheduled irrigation to occur. At the end of normal scheduled irrigation, the controller will recheck the leak alert condition and clear or close the master valve appropriately
- This extended leak capability must allow maintainers to set a much lower leak detect threshold without interfering with normal site operations requiring a pressurized irrigation line.

#### **FLOW SENSORS**

- The controller must have tested compatibility with a wide range of Photo Diode or Reed Switch based flow sensors (ex: Badger Meter, Data Industrial, Creative Sensor Technologies, Netafim Hydrometer or other compatible devices)
- The flow sensor shall send low voltage digital pulses back to the controller and therefore all electrical connections must be waterproof and shall resist any moisture entry.
- Each flow sensor shall have the following characteristics:
  1. Housing to be a Sch 80 polyvinyl chloride tee or bronze tee
  2. Have a pulsing output that operates at 9VDC and a pulse rate that is proportionate to the GPM
  3. Fully compatible with the internal interface at each field controller
- A field controller shall be able to interface and read up to two flow meters varying in size. The controller shall to be able to read and monitor all flow rates and detect individual station problems regardless of the range of flow (GPM) on the project, as measured by the accuracy of the flow sensor.
- Manufacturer of Central Control System must also offer flow retrofit technology that allows master valve and flow data to be carried over an existing irrigation valve wire. Such technology must be capable of reading and alerting on shorts and no connects.

**CONTROLLER ENCLOSURE CABINETS** The enclosure shall be manufactured to be vandal and weather resistant, made entirely of 18 gauge cold rolled steel. Enclosures must come pre-assembled with a low profile vandal resistant antenna for communication to the Central Internet Service

**Please include breakdown of parts/equipment, installation, and annual software costs in quote.**

**BILLING:** The vendor should have the ability to itemize invoices that are reflective of the original bid.



**DEADLINE TO APPLY:**

**Monday, November 15, 2021 12:00 pm PST**

**Please provide an official bid on your company letterhead and include your costs for the specs provided above. Include in your bid the total cost for materials and labor to complete the project. In addition, please provide:**

1. Proof of insurance: General Liability in the amount of \$2M (listing the City of Ashland as additional insured); Auto, minimum of \$200K; and Workers' Compensation if contractor has assistants (no exceptions). All insurances submitted with official bid.
2. Proof of valid business license.
3. W-9.

**Questions/Requests for additional information:** If you have any questions and/or need additional information, contact **Tara Kiewel** at [tara.kiewel@ashland.or.us](mailto:tara.kiewel@ashland.or.us) or 541-552.2257 your **sole point of contact** for this project. Questions and answers will be provided to each and every bidder.

Thank you,

Tara Kiewel  
Administrative Analyst  
Ashland Parks & Recreation Commission (APRC)

**All Pricing Must Be Held Firm for 90 Days**

**Method of Award:** *ORS 279B.070 Intermediate Procurements. (4) If a contract is awarded, the contracting agency shall award the contract to the offeror whose quote or proposal will best serve the interests of the contracting agency, taking into account price as well as considerations including, but not limited to, experience, expertise, product functionality, suitability for a particular purpose and contractor responsibility under ORS 279B.110.*

## GOODS AND SERVICES AGREEMENT (GREATER THAN \$35,000)

<p style="text-align: center;"><b>CITY OF ASHLAND</b> 20 East Main Street Ashland, Oregon 97520 Telephone: 541/488-5587 Fax: 541/488-6006</p>	<p>PROVIDER: HydroPoint Data Systems, Inc.</p> <p>PROVIDER'S CONTACT: Luke Timmons</p> <p>ADDRESS: 1720 Corporate Circle Petaluma, CA 94954</p> <p>PHONE: 800-362-8774</p>
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This Goods and Services Agreement (hereinafter "Agreement") is entered into by and between the City of Ashland, an Oregon municipal corporation (hereinafter "City") and HydroPoint Data Systems, Inc., a domestic business corporation (hereinafter "Provider"), for the Installation of an Irrigation Central Controller system for Lithia and North Mountain Parks in Ashland, Oregon.

### 1. PROVIDER'S OBLIGATIONS

- 1.1 Provide for the purchase of parts, installation, and software for an Irrigation Central Controller System for Lithia and North Mountain Parks set forth in the "SUPPORTING DOCUMENTS" attached hereto and, by this reference, incorporated herein. Provider expressly acknowledges that time is of the essence of any completion date set forth in the SUPPORTING DOCUMENTS, and that no waiver or extension of such deadline may be authorized except in the same manner as herein provided for authority to exceed the maximum compensation. The goods and services defined and described in the "SUPPORTING DOCUMENTS" shall hereinafter be collectively referred to as "Work."
- 1.2 Provider shall obtain and maintain during the term of this Agreement and until City's final acceptance of all Work received hereunder, a policy or policies of liability insurance including commercial general liability insurance with a combined single limit, or the equivalent, of not less than \$2,000,000 (two million dollars) per occurrence for Bodily Injury and Property Damage.
  - 1.2.1 The insurance required in this Article shall include the following coverages:
    - Comprehensive General or Commercial General Liability, including personal injury, contractual liability, and products/completed operations coverage; and
    - Automobile Liability; and
    - Workers' Compensation.
  - 1.2.2 Each policy of such insurance shall be on an "occurrence" and not a "claims made" form, and shall:
    - Name as additional insured "the City of Ashland, Oregon, its officers, agents and employees" with respect to claims arising out of the provision of Work under this Agreement;
    - Apply to each named and additional named insured as though a separate policy had been issued to each, provided that the policy limits shall not be increased thereby;
    - Apply as primary coverage for each additional named insured except to the extent that two or more such policies are intended to "layer" coverage and, taken together, they provide total coverage from the first dollar of liability;
    - Provider shall immediately notify the City of any change in insurance coverage

- Provider shall supply an endorsement naming the City, its officers, employees and agents as additional insureds by the Effective Date of this Agreement; and
  - Be evidenced by a certificate or certificates of such insurance approved by the City.
- 1.3 Provider shall, at its own expense, maintain Worker’s Compensation Insurance in compliance with ORS 656.017, which requires subject employers to provide workers’ compensation coverage for all of its subject workers. As evidence of the insurance required by this Agreement, the Provider shall furnish an acceptable insurance certificate prior to commencing any Work.
- 1.4 Provider agrees that no person shall, on the grounds of race, color, religion, creed, sex, marital status, familial status or domestic partnership, national origin, age, mental or physical disability, sexual orientation, gender identity or source of income, suffer discrimination in the performance of this Agreement when employed by Provider. Provider agrees to comply with all applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations. Further, Provider agrees not to discriminate against a disadvantaged business enterprise, minority-owned business, woman-owned business, a business that a service-disabled veteran owns or an emerging small business enterprise certified under ORS 200.055, in awarding subcontracts as required by ORS 279A.110.
- 1.5 In all solicitations either by competitive bidding or negotiation made by Provider for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Providers of the Provider’s obligations under this Agreement and Title VI of the Civil Rights Act of 1964 and other federal nondiscrimination laws.
- 1.6 **Living Wage Requirements:** If the amount of this Agreement is \$22,310.46 or more, Provider is required to comply with Chapter 3.12 of the Ashland Municipal Code by paying a living wage, as defined in that chapter, to all employees performing Work under this Agreement and to any Subcontractor who performs 50% or more of the Work under this Agreement. Provider is also required to post the notice attached hereto as “Exhibit A” predominantly in areas where it will be seen by all employees.

## 2. CITY'S OBLIGATIONS

- 2.1 City shall pay Provider the sum of **\$144,316.62 (one-hundred forty-four thousand, three-hundred sixteen dollars and sixty-two cents)** as provided herein as full compensation for the Work as specified in the SUPPORTING DOCUMENTS.
- 2.2 In no event shall Provider's total of all compensation and reimbursement under this Agreement exceed the sum of **\$144,316.62 (one-hundred forty-four thousand, three-hundred sixteen dollars and sixty-two cents)** (this is maximum, not to exceed amount of entire Agreement) without express, written approval from the City official whose signature appears below, or such official's successor in office. Provider expressly acknowledges that no other person has authority to order or authorize additional Work which would cause this maximum sum to be exceeded and that any authorization from the responsible official must be in writing. Provider further acknowledges that any Work delivered or expenses incurred without authorization as provided herein is done at Provider's own risk and as a volunteer without expectation of compensation or reimbursement.

## 3. GENERAL PROVISIONS

- 3.1 This is a non-exclusive Agreement. City is not obligated to procure any specific amount of Work from Provider and is free to procure similar types of goods and services from other providers in its sole discretion.
- 3.2 Provider is an independent contractor and not an employee or agent of the City for any purpose.

- 3.3 Provider is not entitled to, and expressly waives all claims to City benefits such as health and disability insurance, paid leave, and retirement.
- 3.4 Provider shall not assign this Agreement or subcontract any portion of the Work to be provided hereunder without the prior written consent of the City. Any attempted assignment or subcontract without written consent of the City shall be void. Provider shall be fully responsible for the acts or omissions of any assigns or subcontractors and of all persons employed by them, and the approval by the City of any assignment or subcontract shall not create any contractual relation between the assignee or subcontractor and the City.
- 3.5 This Agreement embodies the full and complete understanding of the parties respecting the subject matter hereof. It supersedes all prior agreements, negotiations, and representations between the parties, whether written or oral.
- 3.6 This Agreement may be amended only by written instrument executed with the same formalities as this Agreement.
- 3.7 The following laws of the State of Oregon are hereby incorporated by reference into this Agreement: ORS 279B.220, 279B.230 and 279B.235.
- 3.8 This Agreement shall be governed by the laws of the State of Oregon without regard to conflict of laws principles. Exclusive venue for litigation of any action arising under this Agreement shall be in the Circuit Court of the State of Oregon for Jackson County unless exclusive jurisdiction is in federal court, in which case exclusive venue shall be in the federal district court for the district of Oregon. Each party expressly waives any and all rights to maintain an action under this Agreement in any other venue, and expressly consents that, upon motion of the other party, any case may be dismissed or its venue transferred, as appropriate, so as to effectuate this choice of venue.
- 3.9 Provider shall defend, save, hold harmless and indemnify the City and its officers, employees and agents from and against any and all claims, suits, actions, losses, damages, liabilities, costs, and expenses of any nature resulting from, arising out of, or relating to the activities of Provider or its officers, employees, contractors, or agents under this Agreement.
- 3.10 Neither party to this Agreement shall hold the other responsible for damages or delay in performance caused by acts of God, strikes, lockouts, accidents, or other events beyond the control of the other or the other's officers, employees or agents.
- 3.11 If any provision of this Agreement is found by a court of competent jurisdiction to be unenforceable, such provision shall not affect the other provisions, but such unenforceable provision shall be deemed modified to the extent necessary to render it enforceable, preserving to the fullest extent permitted the intent of Provider and the City set forth in this Agreement.
- 3.12 Deliveries will be F.O.B destination. Provider shall pay all transportation and handling charges for the Goods. Provider is responsible and liable for loss or damage until final inspection and acceptance of the Goods by the City. Provider remains liable for latent defects, fraud, and warranties.
- 3.13 The City may inspect and test the Goods. The City may reject non-conforming Goods and require Provider to correct them without charge or deliver them at a reduced price, as negotiated. If Provider does not cure any defects within a reasonable time, the City may reject the Goods and cancel this

Agreement in whole or in part. This paragraph does not affect or limit the City's rights, including its rights under the Uniform Commercial Code, ORS Chapter 72 (UCC).

3.14 Provider represents and warrants that the Goods are new, current, and fully warranted by the manufacturer. Delivered Goods will comply with SUPPORTING DOCUMENTS and be free from defects in labor, material and manufacture. Provider shall transfer all warranties to the City.

#### **4. SUPPORTING DOCUMENTS**

4.1 The following documents are, by this reference, expressly incorporated in this Agreement, and are collectively referred to in this Agreement as the "SUPPORTING DOCUMENTS:"

- The City's written Invitation for Bid dated November 1, 2021
- The Provider's complete written quote dated November 15, 2021

4.2 This Agreement and the SUPPORTING DOCUMENTS shall be construed to be mutually complimentary and supplementary wherever possible. In the event of a conflict which cannot be so resolved, the provisions of this Agreement itself shall control over any conflicting provisions in any of the SUPPORTING DOCUMENTS. In the event of conflict between provisions of two of the SUPPORTING DOCUMENTS, the several supporting documents shall be given precedence in the order listed in Article 4.1.

#### **5. REMEDIES**

5.1 In the event Provider is in default of this Agreement, City may, at its option, pursue any or all of the remedies available to it under this Agreement and at law or in equity, including, but not limited to:

5.1.1 Termination of this Agreement;

5.1.2 Withholding all monies due for the Work that Provider has failed to deliver within any scheduled completion dates or any Work that have been delivered inadequately or defectively;

5.1.3 Initiation of an action or proceeding for damages, specific performance, or declaratory or injunctive relief;

5.1.4 These remedies are cumulative to the extent the remedies are not inconsistent, and City may pursue any remedy or remedies singly, collectively, successively or in any order whatsoever.

5.2 In no event shall City be liable to Provider for any expenses related to termination of this Agreement or for anticipated profits. If previous amounts paid to Provider exceed the amount due, Provider shall pay immediately any excess to City upon written demand provided.

#### **6. TERM AND TERMINATION**

6.1 Term

This Agreement shall be effective from the date of execution on behalf of the City as set forth below (the "Effective Date"), and shall continue in full force and effect until June 30, 2022, unless sooner terminated as provided in Subsection 6.2.

6.2 Termination

6.2.1 The City and Provider may terminate this Agreement by mutual agreement at any time.

6.2.2 The City may, upon not less than thirty (30) days' prior written notice, terminate this Agreement for any reason deemed appropriate in its sole discretion.

6.2.3 Either party may terminate this Agreement, with cause, by not less than fourteen (14) days' prior written notice if the cause is not cured within that fourteen (14) day period after written notice. Such termination is in addition to and not in lieu of any other remedy at law or equity.

## 7. NOTICE

Whenever notice is required or permitted to be given under this Agreement, such notice shall be given in writing to the other party by personal delivery, by sending via a reputable commercial overnight courier, or by mailing using registered or certified United States mail, return receipt requested, postage prepaid, to the address set forth below:

**If to the City:**

Ashland Parks and Recreation  
Attn: Michael Black, Director  
20 E. Main Street  
Ashland, Oregon 97520  
Phone: (541) 488-5340

**With a copy to:**

City of Ashland – Legal Department  
20 E. Main Street  
Ashland, Oregon 97520  
Phone: (541) 488-5350

**If to Provider:**

HydroPoint Data Systems, Inc.  
1720 Corporate Circle  
Petaluma, CA 94954

## 8. WAIVER OF BREACH

One or more waivers or failures to object by either party to the other's breach of any provision, term, condition, or covenant contained in this Agreement shall not be construed as a waiver of any subsequent breach, whether or not of the same nature.

## 9. PROVIDER'S COMPLIANCE WITH TAX LAWS

9.1 Provider represents and warrants to the City that:

9.1.1 Provider shall, throughout the term of this Agreement, including any extensions hereof, comply with:

- (i) All tax laws of the State of Oregon, including but not limited to ORS 305.620 and ORS chapters 316, 317, and 318;
- (ii) Any tax provisions imposed by a political subdivision of the State of Oregon applicable to Provider; and
- (iii) Any rules, regulations, charter provisions, or ordinances that implement or enforce any of the foregoing tax laws or provisions.

9.1.2 Provider, for a period of no fewer than six (6) calendar years preceding the Effective Date of this Agreement, has faithfully complied with:

- (i) All tax laws of the State of Oregon, including but not limited to ORS 305.620 and ORS chapters 316, 317, and 318;
- (ii) Any tax provisions imposed by a political subdivision of the State of Oregon applicable to Provider; and

(iii) Any rules, regulations, charter provisions, or ordinances that implement or enforce any of the foregoing tax laws or provisions.

9.2 Provider's failure to comply with the tax laws of the State of Oregon and all applicable tax laws of any political subdivision of the State of Oregon shall constitute a material breach of this Agreement. Further, any violation of Provider's warranty, as set forth in this Article 9, shall constitute a material breach of this Agreement. Any material breach of this Agreement shall entitle the City to terminate this Agreement and to seek damages and any other relief available under this Agreement, at law, or in equity.

**IN WITNESS WHEREOF** the parties have caused this Agreement to be signed in their respective names by their duly authorized representatives as of the dates set forth below.

**CITY OF ASHLAND:**

**HydroPoint Data Systems, Inc. (PROVIDER):**

By: \_\_\_\_\_  
City Manager Pro Tem

By: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date

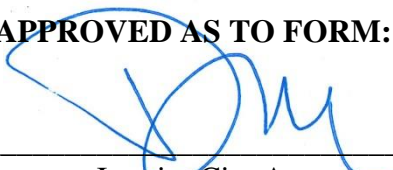
\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

Purchase Order No. \_\_\_\_\_

**(W-9** is to be submitted with this signed Agreement)

**APPROVED AS TO FORM:**

  
\_\_\_\_\_  
Interim City Attorney  
November 22, 2021



November 15, 2021

Tara Kiewel, Administrative Analyst  
Ashland Parks & Recreation Commission (APRC)  
340 S. Pioneer Street, Ashland OR, 97520  
Tel: 541.552.2257  
Email: [tara.kiewel@ashland.or.us](mailto:tara.kiewel@ashland.or.us)

Patricia,

Thank you for the opportunity to submit this proposal to upgrade the irrigation control system at Lithia Park and North Mountain Park for the Ashland Parks & Recreation Commission. We are confident that our Water Sense Certified WeatherTRAK smart irrigation control system, in combination with HydroPoint managed professional services, can and will meet or exceed the goals of the city.

HydroPoint looks at each engagement as a true partnership. We look forward to the opportunity of working with the city team to gain deeper understanding of their water and site management goals and how we can most effectively apply our technologies and services to produce the desired outcomes.

Over the past 18 years we have established a track record of delivering positive outcomes that exceed customer expectations for organizations such as Walmart, Lowe's, Apple, Google Lockheed Martin, City of Houston, City of Charleston, City of Santa Clarita, Los Angeles County Parks and more.

#### Attachments

1. Proof of insurance (HydroPoint Insurance 1)
2. Proof of insurance (HydroPoint Insurance 2)
3. Proof of valid business license (City of Petaluma Business Tax Rcp 2021)
4. W-9 (HPDS 2021 Form W9)
5. Hardware quote for Lithia (HD Fowler - Lithia Hardware)
6. Hardware quote for North Mountain (HD Fowler - NMP Hardware)
7. Installation quote for Lithia (WeatherTRAK Installation at Lithia Park)
8. Installation quote for North Mountain (WeatherTRAK Installation at North Mountain Park)

See Appendix A on pages 22-24 for pricing summary.

#### HEADQUARTERS

1720 Corporate Circle  
Petaluma, CA 94954  
800 362 8774 main  
707 769 9695 fax  
[hydropoint.com](http://hydropoint.com)

#### FIELD OFFICE

10259 W. Emerald St.  
Suite 160  
Boise, ID 83704  
866 294 5847 main  
208 323 1834 fax





From the simplest to the most complex project, we have the technology and services to drive results and we look forward to meeting with APRC to discuss and propose ideas surrounding how we can partner to achieve success.

We look forward to hearing from you soon.

Sincerely,

A handwritten signature in black ink, appearing to read "Luke Timmons".

**Luke Timmons**  
**Regional Sales Manager – Northwest, Hydropoint**

Cc: Chris Manchuck, SVP Sales, Hydropoint

**HEADQUARTERS**

1720 Corporate Circle  
Petaluma, CA 94954  
800 362 8774 main  
707 769 9695 fax  
[hydropoint.com](http://hydropoint.com)

**FIELD OFFICE**

10259 W. Emerald St.  
Suite 160  
Boise, ID 83704  
866 294 5847 main  
208 323 1834 fax



WaterCompass<sup>®</sup> WeatherTRAK<sup>®</sup>



## APRC Irrigation Central Controller

Posting Number: P2022-0003

### **Ashland Parks and Recreation Commission Irrigation Central Controller Equipment, Software, and Installation**

**Scope:** Installation of new Irrigation Central Controller system for Lithia and North Mountain Parks in Ashland, Oregon.

The WeatherTRAK central control system is cloud-based and communicates via LTE/5G with individual controllers/clocks to initiate run-times and communicate with physically connected flow devices and master valves to detect leaks and shut the main line off when necessary. The system is accessible through a mobile app for in-field work and can be managed from any internet-connected device, such as a computer or tablet. The system provides real-time alerts that can be sent to multiple users; the controllers measure water flow in real time. WeatherTRAK utilizes advanced technology to continually alter run-times in order to deliver the most efficient water schedule based on localized conditions - and includes superior data collection/management tools.

HydroPoint's distributor partner, HD Fowler, provides local support for hardware issues and customer service. HydroPoint offers free, remote customer service and has the capability to provide local service for the program as necessary.

Installation for two Parks:

- **Lithia Park – 12 stations with 123 zones (*consolidate to 11*)**
- **North Mountain Park – 3 Stations with 85 zones (*consolidate to 2*)**

### **Summary**

The WeatherTRAK system by HydroPoint meets and/or exceeds all of the following Vendor requirements.

### **Qualifications**

- Proven to save water in previously conducted Water Agency or University studies, with published results
- Proven to conserve water as demonstrated by U.S. EPA WaterSense
- Proven by the California EPA to reduce dry weather runoff in previously conducted studies, with published results Proven by the Irrigation Association Smart Water Application Technology (SWAT) protocol to have performed perfectly in a laboratory test to:
  - Deliver 100% (perfect) scores on Adequacy of water applied
  - Deliver 0% (perfect) scores on Excess water applied
- Proven by LADWP, in a published study, to deliver up to 95% of the total conservation potential on any given landscape
- Proven to have worked in the commercial world for at least 10 years, to ensure business and technological stability

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- Proven to save water, based on at least 5 real-world customer case study references
- The Company has never filed for Chapter 11, bankruptcy, bankruptcy protection or any similar action(s) that call into question their financial stability
- The Company has a commitment to Customer Service, as demonstrated by
  - Bi-lingual technical support
  - Field based Product Specialist employees
  - Strong relationship with local distribution (HD Fowler)

### **HydroPoint's Weather Data**

- Weather data shall be provided from a service, not a device sensor, and shall be uploaded automatically on a daily basis to all field controllers.
- The weather data shall be highly accurate ET data, created using the Penman Monteith equation, without relying on a single point of failure.
- Real-time evapotranspiration (ET) must be provided, on a daily basis, to each controller, accurate to 1 square kilometer for each controller.
- This data must be automatically provided using a weather service that uses the internet to gather ET and rain data from multiple weather sources and uses the most appropriate data for a specific controller based upon its latitude and longitude, and calculates ET using ASCE Penman-Monteith equation.
- The weather data collected must include relative humidity, temperature, wind speed, and solar radiation. Information is to be provided by the National Oceanic and Atmospheric Administration's (NOAA) Earth System Research Laboratory (ESRL) Global Systems Division (GSD).
- Weather sources, such as connected temperature gauge, distilled water cups or a single weather station, are not acceptable.
- The Vendor must demonstrate the ability to transmit, via wireless network, daily weather data to each irrigation controller
- The Vendor must not rely on a single weather station as source of weather data, so as to eliminate a single point of failure.
- Weather Data must utilize all of the following factors to properly construct watering schedules: temperature, solar radiation, relative humidity and wind
- This Weather Data must be accurate, and resolute, to within one square kilometer (zip codes are not an acceptable method of defining Ashland Parks and Recreation Commission microclimates)
- The Vendor must employ at least one full time Climate Scientist to fact-check weather data that is sent to our controllers
- The Vendor must demonstrate redundancy in its' delivery of weather data, so as to insulate Ashland Parks and Recreation Commission from service interruption, including:
  - Multiple climate center locations and multiple communication networks
- The Vendor must demonstrate the ability to transmit weather data to each controller over multiple communication networks, so as to insulate Ashland Parks and Recreation Commission from service interruption
- The Vendor must support this claim, and provide proof that this does not conflict with any existing industry patents
- The method underlying the weather data, as required for calculating irrigation schedules, must utilize the Penman Monteith method of calculating evaporation and transpiration, as recommended by Irrigation Association

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- The Vendor must be able to reproduce historical weather data, by microzone, for the purposes of weather normalization as we track our water budgets and measure our conservation results on a year-over-year basis

### **WeatherTRAK's Automated Irrigation Scheduling**

- Employ scheduling engine software that removes guesswork from irrigation scheduling
- Employ software that allows each zone to be programmed to run in one of three modes: a User schedule, a User schedule that is auto-adjusted with weather data, or a fully automated schedule using custom programming
- Employ software that operates on a true soil moisture depletion model
- Employ software that allows independent station programming to include plant type, root depth, soil type, slope, location of sprinklers on slope, sprinkler type, precipitation rate, irrigation system efficiency, sun exposure, and useable rainfall
- Employ software that utilizes the above to track and display daily depletion, for each unique zone on any landscape
- Automatically adjust run time minute schedules on a daily basis, according to changing weather, for each individual zone on any landscape
- Automatically calculate cycle and soak intervals, on a daily basis, to mitigate dry weather runoff, for each individual zone on any landscape
- Be programmable for day of week exclusions and water windows, but must also automatically calculate next allowable day watering schedules based on carrying over depletion information for each zone on every landscape
- Offer a "percent-adjust" feature that allows each unique zone on any landscape to be upward or downward adjustable to apply more or less ET to any zone
- Offer at least eight programs with independent water day patterns and schedules.
- Offer second start time for high ET requirements
- Be able to provide 365-day calendar scheduling

### **WeatherTRAK's Wireless Internet Access**

- Selected controller must operate without the need for telephone lines, RF (radio) networks, repeaters or CAT5 wiring
- Selected controllers must integrate 4G/LTE modems
- Selected controllers must communicate to a private Internet sub-network
- The Central Control System must employ https and SSL security.
- The Central Control System must employ end user sign in security that employs forced password changes, as we require.
- Selected controllers must not require that the Ashland Parks and Recreation Commission procure and manage individual cell modem accounts for each controller
- Selected controllers must be manageable, and configurable, via Internet portal, from any Internet-enabled device, provided that it has proper permissions
- Vendor must offer Worry Free Wireless carrier protection if 4G/LTE becomes obsolete (ex: 5G)

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### **WeatherTRAK Cloud-Based Central Control Software**

- Management portal software must be 100% Cloud-Based
- System must have a robust Application Program Interface (API) for exporting data to LASUD Building Management or Help Desk ticketing systems
- Management portal must not require dedicated PC hardware or software
- Management portal must not impose any security, infrastructure or product support impact on Ashland Parks and Recreation Commission I/T department.
- Management portal must offer ability to program all station variables in real time
- Management portal must operate in real time, so that all changes take immediate effect.
- Selected controller management portal must be password protected
- Controllers must be able to use the Internet to manage schedules for multiple controllers on a single Point of Connection
- Controllers must be able to use the Internet to optimize watering schedules automatically; even for multiple controllers behind a single Point of Connection
- Management portal must offer ability to program start times, and stagger or suspend start times in event of drought, fire, low pressure, scheduled maintenance, etc.
- Selected controller must deliver ability to “pause” or suspend irrigation automatically, in event of rain, drought, fire or other user-determined purpose via a Web command
- Selected must deliver ability to differentiate “adjustment” messages between turf and trees
- Selected controllers must be programmable to set water budgets, and track daily flow against established water budget, per landscape and in aggregate
- Vendor must offer, via Internet Portal, Customer Support center and field based product specialists a suite of irrigation monitoring services.
- The Central Control System shall allow direct, real-time access to make programming changes, run stations, check for flows, check master valve operation, and turn irrigation on or off
- The Central Control System must allow for irrigation schedules to be constrained by a water window with the option to have each station stay inside water window or not.

### **WeatherTRAK’s Central Irrigation Management and Control Standard**

- The Central Control System must allow for irrigation schedules to be controlled using user-entered custom plant factor/crop co-efficient.
- The Central Control System must allow for ET to be set to ON/OFF per each station.
- Failure of the central computer system or communication links to the field controller must not affect normal, water management and/or flow management operation of irrigation controllers.
- Water usage data shall be automatically retrieved daily from each controller and reported on by the Central system or have the ability to be exported to an Excel or PDF file, provided that a flow sensor is installed at each controller location.
- If no flow sensor is present, the system must allow for manual entry of flow rates for each hydrozone, and for a run-time minutes report to deliver mathematically calculated water usage data.
- The Central Control System shall be able to automatically turn off all controllers due to an operator set rain amount, communicating on the system instantly.

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- The Central Control System shall allow all program data, log data, summary data and alert data for each controller to be selectively printed by controller. All reports must be exportable into either Adobe PDF format for Microsoft Excel format.
- The Central Control System shall allow users to view and/or override any changes made at irrigation controllers. The Central Control System shall track all changes made at the field and Central. Changes shall be recorded with a before and after value for each individual field modified. Users shall be able to report on user level changes for up to 3 years' worth of changes including selection of specific days or date ranges.
- The Central Control System must provide the ability to perform station AND / OR Program grouping – the ability to create a 'virtual controller' comprised of any 1 or more zones on a single controller, or across a group of controllers across the entire deployment. Station grouping must be highly customizable, and allow system operators to make global changes to a variety of irrigation parameters, including plant type, system efficiency, and % adjust, precipitation rate, etc. The Central Control System must be able to issue global pauses, in order to suspend irrigation for a single controller, a group of controllers, or all controllers across the entire deployment. The system must also be able to generate a "Winterize" message in order to suspend irrigation without amending soil moisture depletion.
- The Central Control System must be able to issue an event pause for a specific date set in the future with the ability to set this as a recurring event daily, weekly, monthly etc.
- The Central Control System must be able to issue an event pause at 30 minute increments that would override master valve operation and allow for use of quick couplers or other manual irrigation without generating an alert.
- The Central Control System must be configurable to send alarms, via email or text, to designated users when flow anomalies are detected. Multiple parties can be designated to receive these messages.
- The Central Control System shall provide a single web view of all user available controllers and allow the list to be filtered by account, site, controller name, status, and serial number.
- The Central Control System shall issue alerts each day based on operator-set filters including days of week and time of day. Users shall be able to select specific alerts to be on or off.
- The Central Control System shall report alarm conditions at a minimum to include the following:
  - Communication failures and successes (identifies type of problem, time, and location).
  - High or excessive, low flow and no flow conditions with the time (AM/PM) of the occurrence for each individual valve.
  - Main line breaks during scheduled irrigation as well as all other times when flow exceeds user set parameters.
  - Manual watering and manual operation by station and time in the field controller.
  - Current (amperage) alarms by station and time, both high and low, and output shorts due to solenoid failure.
  - Water Window / Depletion Alerts when moisture levels drop below recommended levels.
  - The Central Control System shall issue email or text messages notifying the user of when alerts are cleared.

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- The Central Control System shall have the ability to allow alert-only access for up to 5 additional users per controller.
- All active and cleared alerts shall be stored and have the ability to be reported by controller, by Alert Type and by custom date ranges.
- Central Control shall include a Master Valve override feature that opens up Closed Master valves for a set period to allow for use of quick couplers without triggering a leak alert.
- The Central Control System shall be able to provide and print a water management report including a graph depicting by month the amount of irrigation water used compared to a monthly allotment in HCF or gallons, and ET weather demand for the month, with a percent savings without the need to export data to any formatting program in order to produce said reports.
- The Central Control System shall have Water Budget Manager capability. Water Budget capability shall allow users to create and enter up to 3 different irrigation target budgets and track daily status against these budgets via 3 totalization methods including 1) real time flow (when flow is installed) 2) estimated flow or 3) user entered meter reads/water bills. Central Control System shall have the ability to read and display real time flow and operating status on demand at any time within the Central Control interface.
- Central Control System must have the ability to shut down valves when pre-determined flow thresholds have been exceeded.
- Central Control System shall come integrated with Google Maps or similar mapping feature. Mapping feature shall allow for GPS mapping of controller and backflow location in a user editable interface.
- The Central Control System shall have an automated Account Report that lists controller setting exceptions that may impact water savings and management.
- The Central Control System shall have the ability to auto schedule reports to be generated on a recurring basis, and to have reports “auto-delivered” to an end user’s email account.
- The Central Control System shall have the ability to allow users to set specific Maxim Allowable Depletion (MAD) levels for each zone. Users shall have ability to reset all depletion levels back to 0% at any time.
- The Central Control System must provide the current flow rate, and set of active stations, for any flow enabled controllers from the same manufacturer.
- The Central Control System must provide daily measured consumption / water usage reporting for a single or multiple controllers from a single site or across multiple sites in an enterprise by calculating the station assigned flow rate and the station runtime.
- The report must provide estimated station consumption / water usage by categories such as sprinkler type (spray head, drip, etc.) and plant type (cool season turf, shrub, trees, etc.).
- The Central Control System shall display an area description for each station including the station’s location, the type of plant material irrigated and type of irrigation equipment used.
- The Central Control System shall contain an application that allows Water Budget Management. This application must enable our staff to be able to enter historical water billing information, set target budgets, and then be able to monitor flow information to track against budgets as data is accumulated from flow sensors, or as water bill data is entered into the application.
- The Central Control System must contain an application that allows Site Asset Management. This application must enable our staff to be able to map all classes of Irrigation and Landscape assets, using latitude / longitude coordinates, and place them in an Internet-based site map.

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- The Central Control System must contain an application that manages Drought and Compliance with Drought restrictions. The Drought Management application must be able to:
  - **Identify Site Specific Drought Stage Classification**  
Allow selection of appropriate water agency for each site, and have the application automatically determine the current drought stage, associated drought restrictions and recommendations for support water agencies.
  - **Create Site Specific Drought Response Plans**  
Allow ability to create response plans for each drought stage's restrictions and recommendations. These plans can include making programming changes across multiple controllers using Station Grouping or simple policy changes such as limiting manual irrigation. To track and verify that the site is irrigating in the appropriate window see the site water window compliance management tool below.
  - **Manage and Verify Site Drought Response Plan Implementation**  
Allow site's water manager to be able to review, make notes and implement the site's response plan and then indicate that the site is now in compliance with the water agencies drought stage requirements.
- **Comprehend Multi site Drought Restrictions and Track Compliance**  
Allow easy tracking of the status of each site's compliance using Drought Manager Account Reports or Drought Manager Site Reports.
- The system must provide the ability to perform time/date stamped notes, and be able to store documents or images of required site assets. This asset system must also provide the ability to "lock" asset grid coordinates, to prevent errors once assets are mapped.
- The Central Control System shall provide customizable user access control over specific features and change authorization over programming per log in.
- Central Control System shall keep a history of all program changes for up to 3 years for changes made at the controller and via the web. Changes will be tracked by user and by date and can be viewed any time in a simple report.
- Central Control System shall user to save and name complete set of configurations and the ability to restore those configurations at any time with a simple click.
- Central Control System shall allow user to compare and view differences between settings on controller at any 2 dates for the last 3 years.

### WeatherTRAK's Mobile Application / Remote Control

- Central Control platform shall include a Free Mobile Application
- Mobil App must operate on both Apple IOS and Android devices
- Mobile App shall not be a web page accessed on mobile device but must be a native mobile app
- Mobile App shall have ability to run stations manually 1 at a time or in sequence
- Mobile App shall have the ability to manually operate multiple stations at the same time
- Mobile App shall have the ability to adjust ET% on a station-by-station level
- Mobile App shall have the ability to view all alerts per controller
- Mobile App shall have the ability to program each station according to specific landscape variables such as:
  - Plant Type
  - Root depth
  - Soil Type

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- Sprinkler Type
- Precipitation Rate
- Slope factor
- Location of sprinklers on Slope
- Sun Exposure
- % Adjust for ET values applied to station
- Allow Usable Rainfall
- Mobile App shall have the ability to learn flow at each station
- Mobile App shall have the ability to create site assets, and “pin” them to a cloud-based site map

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## **WeatherTRAK Reporting**

The Central Irrigation Control System must include flexible and robust reporting.

All reports must have the ability to be “subscribed” by our users, and delivered automatically to our users over email and customizable times and dates.

The Central Irrigation Control System must be able to produce the following reports:

### **Account Compliance Report**

Report must show all sites within our account, and if they comply water window matrix rules set by our users on the Drought Management application. Usually water window rules reflect the water agencies’ restrictions. This report must be able to be exported to Excel or PDF

### **Controller Inventory Report**

Report must provide an inventory and analysis of all the controllers for our sites. Data must include Site Name, Controller Name, S/N, Firmware version, Flow Mode, Total # of stations, Station Operation Mode, Status, Rain Pause and Alert Status. This report must be able to be exported to Excel or PDF

### **Controller Setting Change History Report**

Report must provide the ability to track all programming changes made to a controller. This report must show all the individual setting programming changes made to a controller for any selected date range. The report must include information on who made the setting change, the change date and time, the old setting value and the new setting value. This report must be able to be exported to Excel or PDF

### **Controller Settings Detail Report**

Report must provide a detailed list of a controller's current settings. We must be able to optionally create a report of the controller's settings for a selected date. The controller settings report must include settings in the following sections: setup, communication, flow, days/times, station, and crop coefficients. This report must be able to be exported to Excel or PDF

### **Controller Topology Report**

Reports must provide a visual representation of controller’s current flow threshold, day/time configuration settings. Report must also provide configuration showing multiple points of connection and mainlines. Our users must be able to choose to include station information in this report. This report must be able to be exported to Excel or PDF

### **Single Controller Settings Difference Report**

Report must show the differences between two sets of controller program settings. The program settings are from a single controller (two different dates). This report supports configuration settings after September 1, 2014. This report must be able to be exported to Excel or PDF

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### **Multi-Controller Change Analysis Report**

Report must provide the ability to track all programming changes made to all the controllers for which our users, or any of our contractors, have access. This report must be able to be exported to Excel or PDF

### **Multi-Controller Settings Change Report**

Report must provide the ability to track all section level programming changes made to multiple controllers. This report must have a graphical chart and a summary table of all the setting changes made to the user-selected set of controllers for the selected date range. The report includes the number of changes made to each settings section per controller. This report must be able to be exported to Excel or PDF

### **Water Window Compliance Report**

Report must graphically highlight if the sites within selected accounts comply with water window matrix rules set by the user as a report option. This report must be able to be exported to Excel or PDF

### **Controller Estimated Usage Report**

Report must use Runtime and Station Reference Flow information to provide Estimated Water Usage for a selected controller. The report must graphically depict water usage by plant type, and also by water delivery method. This report must be able to be exported to Excel or PDF

### **Multi-Controller Measured Usage Report**

Report must provide water usage per controller allowing multiple controller monitoring, leak and unauthorized usage analysis. This report must have a graphical chart, and easy to read data table, of total water usage for the user-selected set of controllers. This report must also include the total water usage (CCF, Kgal, Gal) collected by the controller's flow sensor for the selected date range. The water usage must be segmented irrigation category and/or Calendar Quarter. This report must be able to be exported to Excel or PDF

### **Multi-Controller Runtime Report**

Report must provide runtimes per controller, allowing multi-controller monitoring and estimated water usage impact analysis by station mode or program. This report must also have a graphical chart and easy to read data table of total runtime for the user selected set of controllers. This report must also include the total number of minutes the controller ran for the selected date range. The runtimes must be segmented by station mode (Auto, User ET and User no ET), Program or Calendar Quarter. This report must be able to be exported to Excel or PDF

### **Single Controller Measured Usage History Report**

Report must provide daily water usage and ET for troubleshooting, monitoring water budgets and historical trending of actual water usage. Report must have a graphical chart and easy to read data table of water usage information for the selected controller. This report must also include the water usage (CCF, KGal or Gal), the ET, alerts, events and the runtime for the selected date range. Water usage must be

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subtotaled by day, week, month or year. The report can be capable of being segmented by either irrigation category or Calendar Quarter. This report must be able to be exported to Excel or PDF

### **Single Controller Runtime History Report**

Report must provide daily station specific runtimes and ET for troubleshooting, monitoring and historical trending. This report must also have a graphical chart and easy to read data tables of station level runtime information for the selected controller. This report must include the number of minutes each station ran, the ET, alerts, events and the water usage for the selected date range. The runtimes must be subtotaled by day, week, month or year. This report must be able to be exported to Excel or PDF

### **Multi-Controller Alert Report**

Report must provide the ability to track, troubleshoot and verify site issues and events such as valve or flow alerts. This report must have an easy to read table of the alerts and events that occurred to the user-selected set of controllers in the selected date range. The report must also include detailed information about each alert, including when the alert occurred, when it was cleared, the alert duration, alert category, alert severity, information about the affected controller and alert description. This report must be able to be exported to Excel or PDF

### **Budget Account Report**

Report must show the selected water budget vs. selected actual data usage for the selected account. Actual data usage could be from Water Bills, Measured Usage from billing period or calendar month, Estimated Usage from billing period or calendar month. This report must be able to be exported to Excel or PDF

### **Budget Comparison Report**

Report must allow us to compare multiple sites, or multiple accounts, at budgetary or actual data usage levels. Actual data usage could be from Water Bills, Measured Usage from billing period or calendar month, Estimated Usage from billing period or calendar month. This report must be generated as bar chart or line chart. This report must be able to be exported to Excel or PDF

### **Budget Monitoring Report**

Report must show the water budget, and actual data usage, for selected time periods and unit types for each selected account. This report must allow us the choice to show all data or partial data. This report must be able to be exported to Excel or PDF

### **Budget Site Report**

Report must show the Budget vs. Actual usage data for selected time periods and unit type for the selected site(s). This report also must allow us to enter cost per flow unit, and use this data to calculate the estimated cost per plant type for the site. This report must be able to be exported to Excel or PDF

### **Site Usage Report**

Report must show the overall water usage from multiple water usage type data, for selected time periods, for the selected site(s). This report must be able to be exported to Excel or PDF

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**Account Security Report**

Allow users to review active users with ID/PW settings

**All reports must be exportable to MS EXCEL**

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### WeatherTRAK's Field Equipment

- The controller must be a complete controller. It must be a self-contained functioning device. It may not be an add-on device, or require another control board or device to be present.
- The controller must be Underwriters Laboratory (UL) listed. No alternate electrical, testing, safety or reliability standard is acceptable.
- The controller shall be manufactured in the USA
- The controller must be EPA WaterSense Approved.
- The controllers must be FCC Approved.
- The controller must have built-in 4G/LTE cellular radio for cloud-based communications.
- The controller must have a modular cellular radio for easy component replacement, if needed.
- The controller must have successfully passed the Irrigation Association Smart Water Application Technology (SWAT) testing protocol, and must have registered perfect scores of 100% Adequacy / 0% Excess.
- The controller must be capable of fully automatic, semi-automatic, and manual operation using a keypad that is an integrated part of the controller.
- The controller shall be capable of storing irrigation schedules, monitoring and managing flow information all without the Central System. Loss of communication to cloud server must not impair these functions.
- The controller must be able to be programmed in the field, while standing in front of the controller.
- If the Central System is turned off, removed, or if communication from/to the Central Computer fails, the field controllers must still continue to perform scheduling and flow management functions.
- The controller shall have at least a 3.0 amp 24VAC transformer.
- The controller must be able to run at least eight (8) programs / valves simultaneously, as well as a manual irrigation event, operation of a master valve, flow sensor and pump start. Valve doubling is not an acceptable method of accomplishing this.
- The controller must utilize large screw-less terminal blocks, that can accommodate field wire in size from 12 to 22 gauge wire, including two inputs per station.
- The Controller must be expandable up to 96 stations
- The controller must deliver station modularity, in 6 station increments, through the installation of station "keys".
- The controller must utilize non-volatile memory to retain all programming information during a power outage for up to 10 years.
- The controller must have a built in Ohm reader for field wire diagnostics.
- The controller terminal output must be able to draw up to 1 amp before being considered "over current".
- The controller must support a System-Over Current feature, which automatically delays one stations' irrigation if the activated stations are drawing too much current.
- The controller must have a 5 line backlit display, and must have a minimum of three (3) lines by twenty four (24) characters so that scrolling through menus is minimized.
- The controller display shall allow the user to easily move from screen to screen through an intuitive, self-prompting interface so that it is easier for the user to program, read and understand

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the controller.

- There shall be a minimum of eight (8) regular irrigation start / stop programs
- Individual station cycle and soak times must be automatically calculated for each hydrozone by the controller scheduling engine
- Second start times for each program must be available to support syringe/propagation events.
- The controller must be programmable at the field controller, as well as being capable of being programmed from any Internet enabled PC, Laptop or tablet device with proper login credentials. It is NOT acceptable if controller is not programmable from the field location
- Programming shall be based on a station level calculated depletion with up to 28 days between irrigation cycles or shall be able to irrigate in minutes and as a % of ETo
- The controller shall have flow management capability as a standard feature whereas the controller shall learn each station's expected GPM flow rate, and operate up to eight (8) valves at the same time plus the master valve to shorten the water window
- Alerts shall be able to be processed and responded to at both the field controller location and at the remotely via a web browser
- The controller software must be Cloud-Enabled; auto updates are part of the controllers' service.
- Controller shall have models with both traditional wire and fully-integrated 2-wire capability.
- Controller must be expandable up to 96 stations, for either conventional wire or 2-wire design, in a single controller. (No use of relay's)
- The controller shall have built-in amperage meter to accurately measure and diagnose valve solenoid electrical problems such as *no current*, *station short*, *under current*, *over current*, etc.
- The controller must be capable of allowing the user to make changes to the irrigation program via either a web-enabled Internet device, or at the field controller without requiring the user to go back to the Internet management portal to accept the change.
- The controller shall allow for operator-set water window, which prevents irrigation from continuing beyond a set end time. Remaining run-times shall be carried in a hold-over table and shall be applied at the next scheduled irrigation with the system prioritizing which valve to operate based on accumulated ET and the hold-over time.
- The controller shall have the ability to track and report on when an "individual" user is logged into the controller via the Internet, what changes were made while there, and when a user logged out of the controller. These shall be date and time stamped. Changes made at the controller must also be logged.
- The controller shall be able to display for the user a detailed water usage report categorizing for each month the usage during scheduled irrigation, test and manual key operation, and for non-controller usage such as bleeding valves on manually, using quick couplers or hose bibs.
- The controller must be able to support a wired or wireless rain sensor.
- The system must also allow manual irrigation via Internet-enabled tablet or via a true smart-phone app for both iPhone and Android operating systems.
- The field controller(s) shall be capable of utilizing cellular wireless modem application as communication links to the central management system. The field controllers shall be capable of directly receiving, storing, and operating commands downloaded from the central management system. The cellular modem must utilize a 4G/LTE network for system performance, reliability and expanded cellular vendor coverage.
- The field controller shall come with a minimum of five (5) year Warranty from the manufacturer; however ten (10 or fifteen (15) year Warranty options must be available from the manufacturer

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### WeatherTRAK's Flow Sensing

- There shall be no added charge for flow capabilities on the Central Control System.
- The controller shall have the built-in capacity for sensing flow data; a flow meter input and utilizing a master valve without the addition of sensor boards, decoders, or other pieces of equipment.
- The controller must be able to support up to four (4) separate flow sensors and four (4) separate master valves, without the use of third party equipment or additional Central service costs.
- Up to nine (9) controllers must be able to connect to a single Point of Connection
- The controller, once connected to a flow sensor, must be able to learn flow for each station line based on the resolution of the flow sensor
- The controller must be able to learn flow from both the field controller, a Mobile App, AND/OR from the Central Control interface/ internet
- The control platform must have an automatic Learned Flow capability
- The controller must be able to detect System High Flow / Mainline break.
- When a mainline break occurs, the controller must be programmable to either Alert-Only or Alert and Shut Down the master valve.
- An alert notification must immediately be sent to the central internet management portal via wireless, as well as a text message to the system operator(s)
- When an alert, such as High Flow is indicated on the controller, the station with the High Flow shall still have an option to come on and then shut off, rather than having the alert keep the station off until someone clears the alert from the central computer or at the field controller
- Central Control System must have the ability to shut down valves when pre-determined flow thresholds have been exceeded
- The controller must be configured to support either a normally open or normally closed master valve
- The controller must be able to be set to System Shutdown, which will immediately close a normally open or normally closed master valve and suspend all irrigation until the controller is returned to the normally operating mode ("controller is on")
- The controller must be able to detect single or multiple overlapping station high flow faults.
- When the controller determines a station or set of stations are exceeding the cumulative station high flow threshold all active stations will be immediately turned off and faulted. An alert notification must immediately be sent to the central internet management portal via wireless as well as a text message to the system operator
- The controller must be able to detect Low Flow/ No Flow conditions. When a low flow / no flow fault occurs, the controller must turn off all active stations and move to the next set of stations in the queue
- If 3 consecutive low flow / no flow faults occur then a no flow alarm is raised on the master valve and all irrigation stops until the alert is cleared.
- An alert notification must immediately be sent to the central internet management portal via wireless as well as a text message to the system operator
- The controller must support the ability to exclude individual stations from low flow / no flow testing
- The controller must support the ability to track leaks, such as water running when the system is not irrigating. An alert notification must immediately be sent to the central internet management portal via wireless as well as a text message to the system operator

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- The leak detect threshold must be user configurable either at the controller or from the central internet management portal
- The controller must support the ability to track extended leaks by tracking how long the flow rate has exceeded the leak detect threshold.
- If the flow rate has exceeded the user configurable leak detect threshold for longer than the user configurable time (leak delay + extended leak delay), the controller will close the normally open master valve
- The extended leak timer will automatically reset when the flow rate drops below the leak detect threshold. The controller will still allow normal scheduled irrigation to occur. At the end of normal scheduled irrigation, the controller will recheck the leak alert condition and clear or close the master valve appropriately
- This extended leak capability must allow maintainers to set a much lower leak detect threshold without interfering with normal site operations requiring a pressurized irrigation line.

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## Flow Sensors

- The controller must have tested compatibility with a wide range of Photo Diode or Reed Switch based flow sensors (ex: Badger Meter, Data Industrial, Creative Sensor Technologies, Netafim Hydrometer or other compatible devices)
- The flow sensor shall use two #14 AWG; one red, and one black in 1" PVC conduit to connect to the irrigation controller.
- The maximum wire run between flow sensor and controller shall be 2,000 ft.
- The flow sensor shall send low voltage digital pulses back to the controller and therefore all electrical connections must be waterproof and shall resist any moisture entry.
- It is intended that all wire runs between the controller and flow sensor shall be direct pulls and shall have no splices. If wire splices are unavoidable, they shall be installed in a valve box with a sealing pack water proof wire connectors, with valve boxes properly labeled.
- Each flow sensor shall have the following characteristics:
  - Housing to be a Sch 80 polyvinyl chloride tee or bronze tee
  - Have a pulsing output that operates at 9VDC and a pulse rate that is proportionate to the GPM
  - Fully compatible with the internal interface at each field controller
- A field controller shall be able to interface and read up to two flow meters varying in size. The controller shall be able to read and monitor all flow rates and detect individual station problems regardless of the range of flow (GPM) on the project, as measured by the accuracy of the flow sensor.
- Manufacturer of Central Control System must also offer flow retrofit technology that allows master valve and flow data to be carried over an existing irrigation valve wire. Such technology must be capable of reading and alerting on shorts and no connects.

## **Controller Enclosure Cabinets**

- The enclosure shall be manufactured to be vandal and weather resistant, made entirely of 18 gauge cold rolled steel.
- Enclosures must come pre-assembled with a low profile vandal resistant antenna for communication to the Central Internet Service

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## Installation Services

# WeatherTRAK Professional Services Scope of Work

## Project Management

### Status Updates

HydroPoint project managers provide e-mail updates to all provided customer contacts:

- Project kickoff & wrap-up
- Weekly status updates

### Escalations

In the case of any issue or obstacle requiring customer attention, HydroPoint project managers will escalate to the appropriate provided customer contacts and HydroPoint account managers, and track the case until resolved.

## Controller Installation

### Site Specific

- Authorization & access: check-in with the site manager before beginning any work and shall check out with the site manager when work is complete.
- Issue escalation: any urgent or significant issues found during the installation will be escalated to the site manager and to HydroPoint Project Manager before departing the site AND thoroughly documented in the Controller Installation Report (CIR); for example: a mainline break.
- Safety standards: installer will review the customer's Safety Standards (where applicable) and ensure compliance with those standards while on site.

### Installation

- Recording existing controller data: station start times, station programs, station run times, and day-of-week programming.
- Labeling wires: identify no-connects and shorts, verify active station wire counts, label each wire before disconnecting.
- Removal of existing controller: disconnecting power, removing the controller, capping electrical wires that will not be used, and returning controller to on-site contact.
- Installing new WeatherTRAK controller: electrical grounding, ensure 120v is in conduit and meets local code, connect all 24v station field wires to station ports.

### Wet Check

Installer will walk the property while manually operating stations in order to:

- Document head count, flow rate estimation and verification
- Record location of key assets in WeatherTRAK map

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### Controller Programming

- Verify controller online: check for correct microzone (for weather data) and subscription start date.
- Initial set-up: program date, time, time zone, max active stations, master valve setting.
- Initial schedule: program water day, start times, water windows to meet site needs.
- Station Programming: record landscape settings during wet check and program for each station (usable rainfall, sprinkler type, precipitation rate, sprinkler efficiency, soil type, plant type, root depth, microclimate, slope, and location on slope). All stations are given names and set to "Automated by WeatherTRAK" mode.

### Account Activation

- Cellular: activate all modems on ATT network and validate connectivity.
- WeatherTRAK Central: set up and name account, sites and controller names as well as user logins and passwords and user rights and access according to customer instructions.

### Final Inspection

- Test system: ensure all stations active, run a valve test and make note of shorts/no-connects, troubleshoot active alerts, verify controller activated and online
- Controller Installation Report: document controller installation with photos, document any issues discovered during the wet check, including water waste, landscape health, and equipment issues.

## Training & Support

### Technical Support

- Support Hours:
  - Mon-Fri 5:00 am – 5:00 pm PT
  - Sat 9:00 am – 2:00 pm PT
- For troubleshooting, give our bilingual team a call at 1-800-362-8774
- For faster service on all other customer service matters, email us at [support@hydropoint.com](mailto:support@hydropoint.com)
- [Forgot your username or password?](#)

### Virtual Training Webinars

All provided customer contacts receive instructions for accessing HydroPoint University virtual training webinars at no additional cost. More information on webinar content is available here: <https://www.hydropoint.com/weathertrak/resources/training/>

### Online Resources

- HelpJuice: Find articles on everything from installation to programming to troubleshooting.
- Product Documents: Browse our library of tech sheets, installation information, owner's manuals and more.
- Design Specifications
- Informational Videos: Watch videos that cover WeatherTRAK Central alerts.
- Drought Resources: Browse resources to help you manage drought conditions.

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**Appendix A – Pricing Summary**

(Per attached hardware & installation quotes)

**Lithia Park - Hardware & Installation Breakdown**

Type	Item	Qty	Unit Price	Total Price
Equipment	WTOXR-C-12-CWM WEATHERTRAK OPTIFLOW XR WALL MOUNT WeatherTRAK OptiFlow XR Wall Mount (12 stations)	7	\$ 3,473.55	\$ 24,314.85
Equipment	WTOXR-C-18-CWM WEATHERTRAK OPTIFLOW XR WALL MOUNT WeatherTRAK OptiFlow XR Wall Mount (18 stations)	2	\$ 3,801.73	\$ 7,603.46
Equipment	WTOXR-C-24-CWM WEATHERTRAK OPTIFLOW XR WALL MOUNT WeatherTRAK OptiFlow XR Wall Mount (24 stations)	1	\$ 4,129.91	\$ 4,129.91
Equipment	WTOXR-C-36-CWM WEATHERTRAK OPTIFLOW XR WALL MOUNT WeatherTRAK OptiFlow XR Wall Mount (36 stations)	1	\$ 4,786.27	\$ 4,786.27
Equipment	WT-MV-300G-SNO MASTER VALVE Master valve (NO, 3-inch, globe-style, brass)	3	\$ 2,453.60	\$ 7,360.80
Equipment	WTFLOWHD-I-300 WEATHERTRAK FLOWHD (3-INCH, FLANGED) WeatherTRAK FlowHD flow sensor and submeter	3	\$ 3,016.69	\$ 9,050.07
Equipment	1" AIR/VACUUM RELIEF VENT 65ARIB1 NETAFIM	3	\$ 150.05	\$ 450.15
Installation	WeatherTRAK Flow Sensor Installation, 3-inch	3	\$ 6,048.90	\$ 18,146.70
Installation	WeatherTRAK Controller Installation, 1-18 stns	9	\$ 1,648.90	\$ 14,840.10
Installation	WeatherTRAK Controller Installation, 24-48 stns	2	\$ 2,418.90	\$ 4,837.80
Installation	WeatherTRAK Master Valve Installation	3	\$ 1,978.90	\$ 5,936.70
Installation	OptiFlow Site Optimization	3	\$ 165.00	\$ 495.00
Lithia Park Detail	Total Cost			\$ 101,951.81

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North Mountain Park - Hardware & Installation Breakdown

Type	Item	Qty	Unit Price	Total Price
Equipment	WTOXR-C-48-CWM WEATHERTRAK OPTIFLOW XR WALL MOUNT WeatherTRAK OptiFlow XR Wall Mount (48 stations).	1	\$ 5,442.64	\$ 5,442.64
Equipment	WTOXR-C-30-CWM WEATHERTRAK OPTIFLOW XR WALL MOUNT WeatherTRAK OptiFlow XR Wall Mount (30 stations).	1	\$ 4,458.09	\$ 4,458.09
Equipment	WT-MV-300G-SNO MASTER VALVE Master valve (NO, 3-inch, globe-style, brass)	2	\$ 2,453.60	\$ 4,907.20
Equipment	WTFLOWHD-I-300 WEATHERTRAK FLOWHD (3-INCH, FLANGED WeatherTRAK FlowHD flow sensor and submeter (3-inch, flanged).	2	\$ 3,016.69	\$ 6,033.38
Equipment	1" AIR/VACUUM RELIEF VENT 65ARIB1 NETAFIM	2	\$ 150.05	\$ 300.10
Installation	WeatherTRAK Controller Installation, 24-48 stns	2	\$ 2,418.90	\$ 4,837.80
Installation	WeatherTRAK Flow Sensor Installation, 3-inch	2	\$ 6,048.90	\$ 12,097.80
Installation	WeatherTRAK Master Valve Installation	2	\$ 1,978.90	\$ 3,957.80
Installation	OptiFlow Site Optimization	2	\$ 165.00	\$ 330.00
NMP Detail	Total Cost			\$ 42,364.81

Lithia + NMP	Total Project Cost (Hardware & Installation)			\$ 144,316.62
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*Note: Controller type and quantity, flow sensor type and quantity determined during site surveys with APRC on 10/5/2021*

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Subscription - Option 1				
Lithia	Annual WeatherTRAK Central and OptiFlow Service (1st year included)	11	\$ 335.00	\$ 3,685.00
NMP	Annual WeatherTRAK Central and OptiFlow Service (1st year included)	2	\$ 335.00	\$ 670.00
Lithia + NMP	Annual WeatherTRAK Central and OptiFlow Service (1st year included)			\$ 4,355.00

Subscription - Option 2				
Lithia (CIM+OFS-9YA)	9 Years Additional WeatherTRAK Central and OptiFlow Service 10% Savings	11	\$ 2,713.50	\$ 29,848.50
NMP (CIM+OFS-9YA)	9 Years Additional WeatherTRAK Central and OptiFlow Service 10% Savings	2	\$ 2,713.50	\$ 5,427.00
Lithia + NMP	9 Years Additional WeatherTRAK Central and OptiFlow Service 10% Savings			\$ 35,275.50

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