



## Service Requirements & Product Specifications for Sprinkler System Rebates

### Disclaimer

*The City of Seattle, the Saving Water Partnership, and participating water utilities do not regulate or endorse irrigation or landscape products or companies. The irrigation equipment manufacturers listed on the following pages are presented as a reference for irrigation control technologies that meet Saving Water Partnership program rebate specifications. Equipment from other manufacturers may also qualify. The list is provided as a service to customers and contractors, and is not intended to comprise a complete list of products meeting performance specifications, nor a complete list of desirable controller features. **This listing is updated and published on March 30, 2011 and may not be current as you read it.** For more information, please call (206) 684-5955.*

The Saving Water Partnership offers rebates for in-ground automatic sprinkler systems. To qualify for any of these rebates, customers' properties must be located within the Saving Water Partnership service area. For a list of participating water utilities, see [www.savingwater.org/about.htm](http://www.savingwater.org/about.htm). All rebates require installation by an irrigation or landscape contractor licensed to do business in Washington. For a list of equipment manufacturers and distributors, see the chart at the end of this document.

Below are the service requirements and product specifications for Sprinkler System Rebates:

### A. Professional Three-Point Inspection

#### 1) Point of Connection (POC)

The POC is the supply line for the irrigation system. It tees off the city's water main or other water supply to the user's property. This connection should include a cross-connection device (also known as a backflow device). Some systems have a master valve to contain mainline breaks and a pressure-reducing valve (PRV) to deliver the correct pressure to the system. The contractor must check the master valve, pressure-reducing valve and all fittings for leaks and for proper operation.

*Note: Do not confuse this inspection with a backflow inspection, which is not included in this program and must be completed separately by a certified backflow technician.*

#### 2) Sprinkler Valves

Sprinkler valves open and close to allow the operation of each zone as programmed into the controller. Malfunction of these valves can lead to excessive run times and flooding, or decreased run times and under-watering of the landscape. The contractor must:

- Start all valves and observe the time it takes each to open and close. Excessive opening or closing times may indicate possible problems.
- Look for signs of constant weeping from the lower heads in each zone. This may indicate a valve that is not closing properly (not to be confused with low head drainage).
- Check for signs of low pressure or soggy areas in each zone that may indicate a line break.
- Inspect drip valve manifold filters, which should be cleaned at least once a year.

#### 3) Sprinkler Heads

Four factors are critical for efficient irrigation coverage: correct product type and application, proper alignment and spacing, matched precipitation rates of irrigation heads, and correct pressure. The contractor must:

- Inspect heads for proper type and application for the area.
- Inspect all heads for proper adjustment to maximize coverage and minimize overspray.

- Check head alignment; heads should be perpendicular and flush with the grade.
- Check for any foliage that interferes with the spray pattern.
- Check for plugged nozzles.
- Check for signs of high pressure or misting at the heads during operation.
- Check for low head drainage.

As part of the irrigation inspection, the contractor should identify necessary repairs and possible upgrades needed to ensure that the irrigation system is operating at maximum efficiency.

## **B. Rain Sensor Specifications**

A rain sensor (or rain switch) catches moisture and prevents the sprinkler system from watering in the rain. The sensor automatically interrupts the watering schedule but returns it to its normal schedule after it dries out. To qualify for the program, a rain sensor must:

- Automatically break the circuit to the solenoid valves of the sprinkler system after a rain.
- Have replaceable absorptive disks or an anti-splash catchment system.
- Be adjustable to shut off at different amounts of rainfall.
- Be mounted above ground in an unobstructed location, well suited for gauging rain, and according to the manufacturer's specifications.

## **C. Conservation Controller Specifications**

Controllers/Clocks with all of the following features qualify for rebates to help you manage a sprinkler system's watering schedule with maximum efficiency.

**Multiple Programs.** This means that the controller is capable of retaining separate watering schedules for differing landscape needs. For example, one program for shrubs and a separate program for lawns. Different programs might also be used for drip zones or slopes.

**Non-Volatile Memory.** This feature protects a system's settings when the power fails and the back-up battery is dead. With a Non-Volatile Memory the watering scheduling program is kept indefinitely and the program is reinstated when the power returns.

**Cycling, Cycle Soak or Stackable Start Times.** This feature allows for slopes or run-off prone areas to be watered in short runtime increments. For example, for an area that needs to be watered for 40 minutes this feature enables programming four cycles of 10 minutes each, providing time for the water to soak in between cycles.

**Water Budgeting or Water Percent Adjust. Sometimes called the Seasonal Adjust key,** this feature allows the user to change runtimes globally and/or by program by a percentage, instead of having to go in and individually changing the station runtimes one at a time. Typically this feature is used in accordance with information collected from local weather stations that calculate how much water plants are using each day. The Irrigation Water Management Society's web site at [www.iwms.org](http://www.iwms.org) lists the Seattle area Watering Index percentage in either a monthly historical, daily real-time or weekly forecasted amount. The index reflects the changing water needs or plants using solar radiation, wind speed, humidity and temperature.

**Interval or "14 day" Scheduling.** This feature allows for watering in even/odd intervals of every day, every other day, every third day, etc, to easily customize scheduling.

Conservation Controller Models – Check with a local distributor for models that have all of the features outlined in Section C above.

## **D. Evapotranspiration (ET) Controller Specifications – "Smart" Controllers**

Rebate-eligible evapotranspiration control technologies fall into two categories based on the source of weather data:

1. Real-Time ET Controllers are fed data from off-site weather stations via telephone, wireless, or internet connections;
2. Real-Time Stand Alone ET systems have on-site weather monitors.

Like Conservation Controllers, ET Controllers manage a sprinkler system’s watering schedule with multiple start times and programs to customize watering schedules for different landscape areas. ET Controllers must have the same features as described under “Conservation Controllers” above. In addition, ET Controllers must automatically adjust sprinkler run-times to real-time weather data. For qualified models see the list of tested smart Climate-Based controllers and their performance reports at:  
<http://irrigation.org/SWAT/swat.aspx?id=298>

**E. Soil Moisture Sensor Specifications – “Smart” Controllers**

Soil Moisture Sensors augment Conservation Controllers with real-time data on the moisture available to plants. Because they are in contact with plant root zones, they provide more accurate control than rain sensors alone. A soil moisture system must:

- Automatically break the circuit to the solenoid valves of the sprinkler system
- Have an interface module between the sensor and the controller
- Have the ability to finish an irrigation cycle after activation
- Be adjustable to shut off at different soil moisture levels
- Be installed by a professional trained in soil moisture technology

For qualified models see the list of tested smart Sensor-Based controllers and their performance reports at:  
<http://www.irrigation.org/SWAT/swat.aspx?id=298>

**Evapotranspiration (ET) Controllers, and Soil Moisture Sensors**

Manufacturer	Conservation Controller	ET Real-Time Off-site Data Feed	ET Real-Time On-site Monitor	Soil Moisture Sensor
Acclima <a href="http://www.acclima.com">www.acclima.com</a>				•
Alex-Tronix <a href="http://www.alex-tronix.com">www.alex-tronix.com</a>			•	
Aquaconserve, Inc <a href="http://www.aquaconserve.com">www.aquaconserve.com</a>			•	
Baseline Irrig Mgmt Solutions <a href="http://www.baselinesystems.com">www.baselinesystems.com</a>				•
Calsense <a href="http://www.calsense.com">www.calsense.com</a>			•	•
Cyber-Rain <a href="http://www.cyber-rain.com">www.cyber-rain.com</a>		•		
Dynamax, Inc <a href="http://www.dynamax.com">www.dynamax.com</a>				•
ET Water Systems <a href="http://www.etwater.com">www.etwater.com</a>		•		
Hunter Industries <a href="http://www.hunterindustries.com">www.hunterindustries.com</a>	•		•	
Hydropoint WeatherTRAK <a href="http://www.hydropoint.com">www.hydropoint.com</a>	•	•		
Hydrosaver <a href="http://www.hydrosaver.net">www.hydrosaver.net</a>			•	
Irrrometer Watermark <a href="http://www.irrometer.com">www.irrometer.com</a>				•
Irritrol Systems <a href="http://www.irritrol.com">www.irritrol.com</a>	•	•		
Nelson <a href="http://www.lnelson.com">www.lnelson.com</a>	•			•
Rain Bird International <a href="http://www.rainbird.com">www.rainbird.com</a>	•	•	•	•
Rain Master Irrigation Systems <a href="http://www.rainmaster.com">www.rainmaster.com</a>	•	•		
Superior Controls <a href="http://www.superiorcontrolsco.com">www.superiorcontrolsco.com</a>	•	•		
The Toro Company <a href="http://www.toro.com">www.toro.com</a>	•	•		
Weather Reach <a href="http://www.irrisoft.net">www.irrisoft.net</a>		•		
WeatherMatic <a href="http://www.weathermatic.com">www.weathermatic.com</a>	•		•	
Weathermiser <a href="http://www.weathermiser.com">www.weathermiser.com</a>			•	
WeatherSet Co <a href="http://www.weatherset.com">www.weatherset.com</a>			•	

## **F. Flow Sensor Specifications**

A flow sensor, installed with a compatible controller and pressure regulating master valve, will monitor the flow of water through an irrigation system and shut it down in case of major leaks or breaks. To qualify for the rebate, the flow sensor must be installed on the mainline with a pulse transmitter (if required) and compatible firmware/software and controller to record flows by zone. In addition, a high flow condition must result in the controller closing the master valve or zone valves. A master valve and controller with flow monitoring capabilities must be installed with the flow sensor. The system mainline must be at least 1½" in diameter. The installation must include all wiring from the flow sensor and master valve to the controller. The master valve can be normally open or closed as needed.

## **G. Pressure Regulating Master Valve**

Master valves with pressure regulators lower the pressure at the POC to acceptable levels, which can result in significant water savings. To qualify for a rebate, a commercial-grade master valve with a pressure regulator capable of maintaining outlet pressure between 15 and 100 psi must be installed on the mainline. The installation must include all wiring from the valve to the controller. The master valve can be normally open or closed as needed. The installation must include onsite adjustment of the regulator to the lowest pressure that still ensures proper system operation.

## **H. Pressure Regulating Zone Valves**

The purpose of pressure regulating zone valves is to provide the correct pressure and to reduce pressure on zones at sites with excessive psi or excessive psi variations between zones, or sites that have wide psi requirements between zones. To qualify for a rebate, a commercial-grade valve with a pressure regulator capable of maintaining outlet pressure between 15 and 100 psi must be installed on the mainline. The installation must include onsite adjustment of the regulator to the lowest pressure that still ensures proper system operation.

## **I. Retrofit Pressure Regulators for Zone Valves**

For irrigation systems with existing, commercial-grade master or zone valves that don't have pressure regulators, conversion kits can qualify for a rebate. Pressure regulator conversion kits must be compatible with the valve and must regulate outlet pressure between 15 and 100 psi. The installation must include onsite adjustment of the regulator to the lowest pressure that still ensures proper system operation.

## **J. High Uniformity, Low Precipitation Rate, Multi-Stream Spray Head Rotor Nozzles**

Conventional spray heads with poor distribution uniformity contribute to overwatering. Retrofitting existing spray heads with new, high-uniformity, low precipitation rate, multi-stream spray head rotor nozzles can cut water use by significantly increasing system uniformity. To qualify for a rebate, all spray heads in a zone must be replaced with high uniformity, low application rate, matched precipitation, multi-stream nozzles that fit conventional spray head bodies.

## **K. Pressure Regulating Spray Heads**

Pressure regulating spray heads maintain uniform and correct pressure and flow within a zone, increasing system uniformity. If a zone has major sprinkler head pressure differences, all heads in a zone must be replaced with spray heads with built-in pressure-regulating devices to qualify for a rebate. The pressure regulating spray heads must have matched precipitation rate nozzles with adjusting screws.

## **L. Spray & Rotor Heads with Check Valves**

Low head drainage is caused by water draining out of the lowest heads in a sprinkler zone after the controller has shut off. Spray and rotor heads with check valves will eliminate or reduce water wasted from low head drainage. To qualify for a rebate, the replacement spray or rotor heads must be compatible with other heads in the zone and have integrated check valves capable of holding against a minimum of 10' of head. Only replace heads with drainage issues to qualify for a rebate. Not all heads will qualify for rebates unless there is a leakage issue.

## M. Convert Beds with In-Ground Systems to Drip and Micro-Sprinklers

Many established, in-ground irrigation systems utilize inefficient spray heads to water shrub and flower beds. Converting permanent beds to drip and micro-sprinklers will increase irrigation uniformity. To qualify for a rebate, the conversion must be done by replacing and/or capping all sprinklers on a zone and converting to point source or line source drip or micro sprays.

## Wholesale Irrigation Equipment Distributors

<b>Berkey Supply <a href="http://www.berkeysupply.com">www.berkeysupply.com</a></b>		
Bill Blue, Technical Sales Manager 15500 Wood-Red Rd, Bldg C-100 Woodinville, WA 98072 Phone: 425-487-3310 Email: <a href="mailto:bill@berkeysupply.com">bill@berkeysupply.com</a>		
<b>Ewing Irrigation <a href="http://www.ewing1.com">www.ewing1.com</a></b>		
Marshal McCabe, Manager 2901 S Tacoma Way Tacoma, WA 98049 Phone: 253-476-9530 Email: <a href="mailto:branch136@ewing1.com">branch136@ewing1.com</a>	Brad Thompson, Manager 8710 Willows Rd NE, Suite C Redmond, WA 98052 Phone: 425-867-9530 Email: <a href="mailto:branch139@ewing1.com">branch139@ewing1.com</a>	Cory Kalteich, Manager 1805 Pike St NW Auburn, WA 98001 Phone: 253-333-9530 Email: <a href="mailto:branch164@ewing1.com">branch164@ewing1.com</a>
<b>HD Fowler Co <a href="http://www.hdfowler.com">www.hdfowler.com</a></b>		
Bob Koehler, Irrigation Sales Mgr 13440 SE 30th St Bellevue, WA 98005 Phone: 425-746-8400 Email: <a href="mailto:bobk@hdfowler.com">bobk@hdfowler.com</a>	Mark Berry, Outside Sales 1417 Thornton Ave SW Pacific, WA 98047 Phone: 253-863-8600 Email: <a href="mailto:mberry@hdfowler.com">mberry@hdfowler.com</a>	
<b>Horizon <a href="http://www.horizononline.com">www.horizononline.com</a></b>		
Eric Rippe, Sales Manager 11135 NE 33rd Pl Bellevue, WA 98004 Phone: 425-864-1186 <a href="mailto:eric.rippe@horizononline.com">eric.rippe@horizononline.com</a>	Jeff Drake, Manager 955 Lind Ave SW Renton, WA 98055 Phone: 425-864-1023 <a href="mailto:jeff.drake@horizononline.com">jeff.drake@horizononline.com</a>	Martin Munoz, Outside Sales 2425 39 <sup>th</sup> St Everett, WA 98201 Phone: 425-864-1024 <a href="mailto:mmunoz@horizononline.com">mmunoz@horizononline.com</a>
<b>John Deere Landscapes <a href="http://www.johndeerelandscapes.com">www.johndeerelandscapes.com</a></b>		
Mike Scanlan, Branch Manager 1740 NW Maple St Issaquah, WA 98027 Phone: 425-557-3400 <a href="mailto:wscanlan@johndeerelandscapes.com">wscanlan@johndeerelandscapes.com</a>	Rob Ferrel, Branch Manager 8724 S 222nd St Kent, WA 98031 Phone: 253-395-0180 <a href="mailto:rferrel@johndeerelandscapes.com">rferrel@johndeerelandscapes.com</a>	Sandy Hendry, Branch Manager 13930 NE 190th St Woodinville, WA 98072 Phone: 425-485-6167 <a href="mailto:chendry@johndeerelandscapes.com">chendry@johndeerelandscapes.com</a>
<b>United Pipe &amp; Supply Co <a href="http://www.unitedpipe.com">www.unitedpipe.com</a></b>		
Candy Doherty, Turf Sales 16516 Ash Way Lynnwood, WA 98037 Phone: 425-745-5700 <a href="mailto:cdoherty@unitedpipe.com">cdoherty@unitedpipe.com</a>	Bob Jones, Turf Sales 201 R St NW Auburn, WA 98001 Phone: 253-272-8445 <a href="mailto:bjones@unitedpipe.com">bjones@unitedpipe.com</a>	Ken Cheek, Store Manager 14515 NE 87th St Redmond, WA 98052 Phone: 425-882-0244 <a href="mailto:kcheek@unitedpipe.com">kcheek@unitedpipe.com</a>