



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 May 19, 2010 and may not be current as you read it. For more information, please call (206) 684-5955.

The Saving Water Partnership offers three 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.

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. This feature allows for the user to change the 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. This is an integral part of Saving Water Partnership programs. This correct current percentage can be obtained by going to the Irrigation Water Management Society's web site at www.iwms.org.

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

The conservation controller models listed below meet the specifications described above. Note that this list is not exhaustive; any controller that meets the specifications described above qualifies for the conservation controller rebate.

Manufacturer	Models
Hunter	XC Series; Pro-C Series; ICC Series
Irritrol	Total Control; MC Plus; Rain Dial; IBOC; PC Control
Nelson	EZ Pro, EZ Pro Jr.
Rain Bird	ESP-MC; ESP-LX+; ESP Modular
Rain Master	Sentar II; Eagle
Toro	Custom Command Series; Turf Pro Series; Sentinel
WeatherMatic	SL 800; SmartLine

D. Evapotranspiration (ET) Controller Specifications – “Smart” Controllers

Rebate-eligible evapotranspiration control technologies fall into two categories based on the source of the 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 additional information on available models, see the table on the next page.

List of tested “smart” controllers and their performance reports:

<http://irrigation.org/SWAT/Industry/ia-tested.asp>

Evapotranspiration (ET) Controller Models

The following ET Controller models meet the specifications described above:

Manufacturer	Models
Alex-Tronix	Universal Smart Module; Enercon Plus; Smart Clock
Aqua Conserve	Aqua ET
Calsense	ET1; ET2000
Cyber-Rain XCI	Cyber-Rain XCI
ET Water	SC 100; SC 200
Hunter	Hunter ET System; Solar Sync
HydroPoint	WeatherTRAK; WeatherTRAK Plus; WeatherTRAK Pro
Hydosaver ETIC	ET-9
Irritrol Systems	Smart Dial
Rain Bird	IM Controller; ET Manager & ESP-SMT (can be added to existing controller)
Rain Master	Eagle RME
Superior	Sterling
Toro	Intelli-Sense Series
Weather Reach	WR-1, WR-7
Weathermatic	SmartLine Series with Weather Monitor
Weathermiser	RSFI, RSFIS
WeatherSet	WSR

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

Soil Moisture Sensor Models

The following Soil Moisture Sensor models meet the specifications described above:

Manufacturer	Models
Acclima	Sensor TDT, Interface RS500, Controller (SC 6-12, 24, & 36, CS3500)
Baseline	Sensor (Bi-5', 1.5', 1.0'), Interface (TEC S100, S200, DSP 100), Controller (2000, 5000, 6000)
Calsense	Sensor 1000-s, Controller (ET 2000, 2100)
Dynamax	Sensor IL2, Interface (ILS MS, ILS MC)
Irrrometer	Sensor 200ss, Interface (WEM, MHS, WEM-R, WEM DC)
Nelson	Sensor Digital TDT, Interface Nelson 8701 EZ Pro Xtra Controller, 8710 EZ Pro Max
RainBird	Sensor & Interface SMRT-Y

Manufacturers of Conservation Controllers, 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 www.acclima.com				•
Alex-Tronix www.alex-tronix.com			•	
Aquaconserve, Inc www.aquaconserve.com			•	
Baseline Irrig Mgmt Solutions www.baselinesystems.com				•
Calsense www.calsense.com			•	•
Cyber-Rain www.cyber-rain.com		•		
Dynamax, Inc www.dynamax.com				•
ET Water Systems www.etwater.com		•		
Hunter Industries www.hunterindustries.com	•		•	
Hydropoint WeatherTRAK www.hydropoint.com	•	•		
Hydrosaver www.hydrosaver.net			•	
Irrrometer Watermark www.irrometer.com				•
Irritrol Systems www.irritrol.com	•	•		
Nelson www.lnelson.com	•			•
Rain Bird International www.rainbird.com	•	•	•	•
Rain Master Irrigation Systems www.rainmaster.com	•	•		
Superior Controls www.superiorcontrolsco.com	•	•		
The Toro Company www.toro.com	•	•		
Weather Reach www.irrisoft.net		•		
WeatherMatic www.weathermatic.com	•		•	
Weathermiser www.weathermiser.com			•	
WeatherSet Co www.weatherset.com			•	

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.

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.

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.

J. High DU Retrofit Rotary Nozzles

Conventional spray heads with poor distribution uniformity contribute to overwatering. Retrofitting existing spray heads with new, low precipitation rate, high-uniformity 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. For sprinkler systems without pressure regulating spray heads, 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, replacement spray or rotor heads compatible with other heads in the zone must have integrated check valves capable of holding against a minimum of 10' of head.

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

Berkey Supply www.berkeysupply.com

Bill Blue, Technical Sales Manager
 15500 Wood-Red Rd, Bldg C-100
 Woodinville, WA 98072
 Phone: 425-487-3310
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Ewing Irrigation www.ewing1.com

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HD Fowler Co www.hdfowler.com

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United Pipe & Supply Co www.unitedpipe.com

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 16516 Ash Way
 Lynnwood, WA 98037
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