

NATIONAL

#### Portland Decides Not to Flush Urine-Tainted Reservoir Water

Danielle Wiener-Bronner | 56 Min Ago

ortland has backtracked on a decision to flush 38 million gallons of drinking water from a reservoir, made last month after security footage showed a teenager apparently urinating





### MODEL EFFICIENT IRRIGATION AND LANDSCAPE DESIGN GUIDELINES



#### LAWN AND YARD CHECKLIST:

- EFFICIENT IRRIGATION UPGRADES
- PROPER INSTALLATION AND MAINTENANCE
- SEASONAL ADJUSTMENTS
- NATIVE AND DROUGHT TOLERANT PLANTS



### Irrigation Design Criteria Distribution Uniformity

Sprinklers are efficient when the spray heads are matched, properly spaced and designed to spray head to head.

Below is an image of poor distribution uniformity. If an irrigation system is 50% efficient (common for most systems) it will take twice as much water to keep a lawn looking green and healthy.





#### LANDSCAPE DESIGN

Lawns are thirsty and require a lot of water to grow in our climate and require time- consuming maintenance. Consider installing a water wise landscape to save water, time and money.

#### **IDAHO WASHINGTON AQUIFER COLLABORATIVE**



- DO YOU REALIZE THAT 50% TO 70% OF AVERAGE SUMMER USE IS ATTRIBUTED TO OUTDOOR USE SUCH AS MAINTENANCE, RECREATION, BUT MOSTLY IRRIGATION?
- HOW DOES THIS AFFECT YOUR BOTTOM LINE?



### Rain-soaked Seattle has nation's highest water bills

#### California wants our water - but probably not our bills

Among 30 large U.S. cities, Seattle has the highest total monthly water bill for a typical family of four with each person using 50 gallons of water per day.



#### **New Monthly Water Rates**

Beginning April 1, 2019 and yearly thereafter

Residential	2018	2019	2020	2021	2022	2023
Block 1 (0-30,000 gallons)	\$0.94	\$0.95	\$0.98	\$1.01	\$1.05	\$1.09

(1 unit=1,000 gallons) 30,000 gallons = \$29.40 + \$9.09

#### City of Issaquah 2019 Water Rates

All Utilities Are Billed Bi-Monthly

1 ccf = 748 Gallons

#### Single Family Residential

Meter Size	Fixed Charge			Block Three 15 - 30 ccf		
3/4"	\$31.66	\$2.05	\$4.86	\$9.04	\$14.73	\$21.17

(1 unit=748 gallons) 30,000 gallons = \$354.43 + \$31.66



Turf: 20,000 Sq' - Shrubs: 5,000 Sq'



- 1. Start by entering your landscape and water use information.
- 2. Choose a Hunter product calculator to see how much you can save.

These Water Savings Calculators were created as tools to demonstrate just how much water can be conserved when the most efficient Hunter innovations are put to use in any given landscape. To get started calculating your optimal water use, click the 'Water Use Information' button below.

#### Start Here: Water Use Information

#### Calculators

Solar Sync

MP Rotator

MP Rotator Pressure Regulation

Conventional Spray Nozzle Pressure Regulation

Sprinkler Check Valve



Use this tool to see how much water your irrigation system uses, and what you could save by incorporating more efficient products. Start by entering your landscape area and then your water use information from your water bill.

Your peak season monthly water use is 141,790 gallons of water, which costs \$148.



**Show Results** 

Back



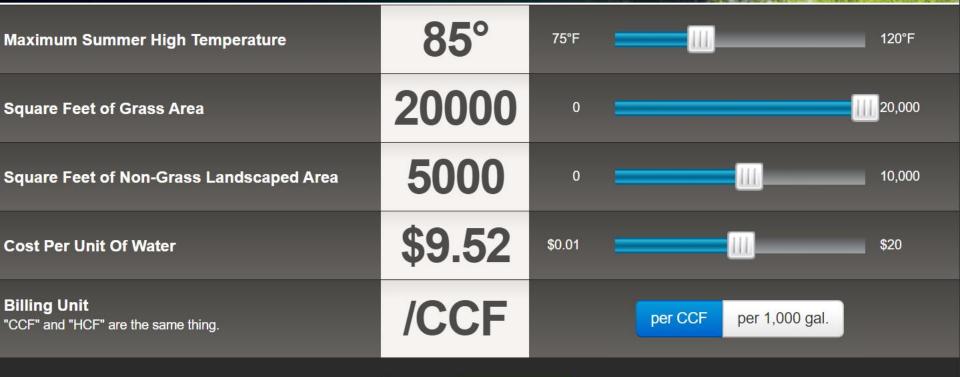
Turf: 20,000 Sq' - Shrubs: 5,000 Sq'



#### **Water Use Information**

Use this tool to see how much water your irrigation system uses, and what you could save by incorporating more efficient products. Start by entering your landscape area and then your water use information from your water bill.

Your peak season monthly water use is 114,123 gallons of water, which costs \$1,452.



**Show Results** 

Back

#### **Use What You Got!**





#### Your recommended watering schedule is below.





Please keep in mind that these run times are based on your area's hottest month. You will need to adjust water usage as temperatures cool and heat up. You can either do this manually, through your seasonal adjustment feature on your controller (select models only) or through a weather sensor, such as the Solar Sync.

Seasonal Adjustment for September: 61% (What's this?)

Portland, OR · Prepared by daniel motylewski on September 3, 2013

# Program A Turfgrass Days to Water: Monday, Thursday, and Saturday Program Start Times: 9:00 pm, 9:45 pm, 10:30 pm Station 1: Front Grass EDIT 12 minutes Station 3: Back Grass EDIT 14 minutes Station 5: Back Grass - Corner EDIT 14 minutes

Pro Options View Door Card

Documentation X-CORE Website Owner's Manual (PDF) Door Card (PDF) Brochure (PDF)

Videos: X-CORE Programming (1 of 2) X-CORE Programming (2 of 2) X-CORE Solar Syno Installation and



WATER-SAVING DEVICE

#1111 1

# WATER YOUR PLANTS DEEPLY BUT LESS FREQUENTLY TO ENCOURAGE DEEP ROOT GROWTH AND DROUGHT TOLERANCE.

There are a number of ways to save water, and they all start with you. To learn more visit, wateruseitwisely.com



#### Sensors **OVERVIEW**





WATER-SAVING DEVICE

#102

## APPLY WATER ONLY AS FAST AS THE SOIL CAN ABSORB IT.

There are a number of ways to save water, and they all start with you. To learn more visit wateruseltwisely.com



#### MAXIMUM PRECIPITATION RATES

The maximum PR values listed are as suggested by the United States Department of Agriculture. The values are average and may vary with respect to actual soil condition and condition of ground cover.

	MAXIMUM PRECIPITATION RATES: INCHES PER HOUR								
JOILTEXTUR		0 to 5% slope		5 to 8% slope		8 to 12% slope		12%+ slope	
	Cover		Bare	Cover	Bare	Cover	Bare	Cover	Bare
Course sandy soils	2.00		2.00	2.00	1.50	1.50	1.00	1.00	0.50
Course sandy soils over compact subsoils		.75	1.50	1.25	1.00	1.00	0.75	0.75	0.40
Light sandy Ioams uniform		75	1.00	1.25	0.80	1.00	0.60	0.75	0.40
Light sandy loams over compact subsoils		25	0.75	1.00	0.50	0.75	0.40	0.50	0.30
Uniform silt loams		00	0.50	0.80	0.40	0.60	0.30	0.40	0.20
Silt loams over compact subsoil	//	.60	0.30	0.50	0.25	0.40	0.15	0.30	0.10
Heavy clay or clay loam	٥	.20	0.15	0.15	0.10	0.12	0.08	0.10	0.06



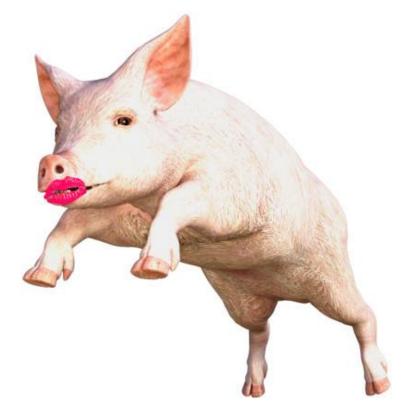
#### MAXIMUM PRECIPITATION RATES

The maximum PR values listed are as suggested by the United States Department of Agriculture. The values are average and may vary with respect to actual soil condition and condition of ground cover.

	MAXIMUM PRECIPITATION RATES: INCHES PER HOUR									
SOILTEXTURE	0 to 5% slope		5 to 8% slope		8 to 129	% slope	12%+ slope			
	Cover	Bare	Cover	Bare	Cover	Bare	Cover	Bare		
Course sandy soils	2.00	2.00	2.00	1.50	1.50	1.00	1.00	0.50		
Course sandy soils over compact subsoils	1.75	1.50	1.25	1.00	1.00	0.75	0.75	0.40		
Light sandy Ioams uniform	1.75	1.00	1.25	0.80	1.00	0.60	0.75	0.40		
Light sandy loams over compact subsoils	1.25	0.75	1.00	0.50	0.75	0.40	0.50	0.30		
Uniform silt loams	1.00	0.50	0.80	0.40	0.60	0.30	0.40	0.20		
Silt loams over compact subsoil	0.60	0.30	0.50	0.25	0.40	0.15	0.30	0.10		
Heavy clay or clay loam	0.20	0.15	0.15	0.10	0.12	0.08	0.10	0.06		







Yup. Still A Pig.

#### NOZZLE COMPARISON CHART

#### A Nozzle for Every Occasion

From the water-saving MP Rotator, to standard sprays and side-stripped specialty nozzles, Hunter provides a solution you can trust for years on end.















	MP ROTATOR	MP ROTATOR SR	PRO ADJUS- TABLE NOZZLES	PRO- SPRAY FIXED ARC NOZZLES	SIDE STRIP	SHORT RADIUS	BUBBLERS
QUICK SPECS							
Nozzle Types	High Efficiency Rotator Nozzle	Short Radius High Efficiency Rotator Nozzle	Adjustable Spray	Fixed Spray	Side Strip	Specialty Nozzle	Specialty Nozzle
Radius (ft.)	8-35	6-12	4-17	5-17	9 x 18 / 5 x 15 / 5 x 30	2, 4, 6	1-1.5
Warranty	2 Years	2 Years	2 Years	2 Years	2 Years	2 Years	2 Years
FEATURES							
Arc	45-360	90-210	0-360	45-360	Rectangle	90 or 180	45-360
Precipitation Square	Approx. 0.40 in/hr	Approx. 0.8 in/hr	1.60-6.45 in/hr	1.53-2.08 in/hr	N/A	5.24-10.29 in/hr	N/A
Precipitation Triangle	Approx. 0.45 in/hr	Approx. 0.9 in/hr	1.84-2.18 in/hr	1.63-2.08 in/hr	N/A	6.03-12.23 in/hr	N/A









#### Your recommended watering schedule is below.





Please keep in mind that these run times are based on your area's hottest month. You will need to adjust water usage as temperatures cool and heat up. You can either do this manually, through your seasonal adjustment feature on your controller (select models only) or through a weather sensor, such as the Solar Sync.

Seasonal Adjustment for September: 61% (What's this?)

Portland, OR · Prepared by daniel motylewski on September 3, 2013

# Program A Turfgrass Days to Water: Monday, Thursday, and Saturday Program Start Times: 9:00 pm, 9:45 pm, 10:30 pm Station 1: Front Grass EDIT 12 minutes Station 3: Back Grass EDIT 14 minutes Station 5: Back Grass - Corner EDIT 14 minutes

Pro Options View Door Card

Documentation X-CORE Website Owner's Manual (PDF) Door Card (PDF) Brochure (PDF)

Videos: X-CORE Programming (1 of 2) X-CORE Programming (2 of 2) X-CORE Solar Syno Installation and



#### Narrow Planting Bed Next to a Structure: Sparse Planting





#### **Narrow Planting Bed Next to a Structure: Dense Planting**



#### Your recommended watering schedule is below.





Please keep in mind that these run times are based on your area's hottest month. You will need to adjust water usage as temperatures cool and heat up. You can either do this manually, through your seasonal adjustment feature on your controller (select models only) or through a weather sensor, such as the Solar Sync.

Seasonal Adjustment for September: 61% (What's this?)

Portland, OR · Prepared by daniel motylewski on September 3, 2013

# Program A Turfgrass Days to Water: Monday, Thursday, and Saturday Program Start Times: 9:00 pm, 9:45 pm, 10:30 pm Station 1: Front Grass EDIT 12 minutes Station 3: Back Grass EDIT 14 minutes Station 5: Back Grass - Corner EDIT 14 minutes

Pro Options View Door Card

Documentation X-CORE Website Owner's Manual (PDF) Door Card (PDF) Brochure (PDF)

Videos: X-CORE Programming (1 of 2) X-CORE Programming (2 of 2) X-CORE Solar Syno Installation and



Daniel.Motylewski@HunterIndustries.com

# SLOW the FLOW











#### **MP Rotator**

#### **Rotating Streams Make Every Drop Count**

Rather than simply "spray" water, MP Rotators emit multiple streams of water at a slow, steady rate. This revolutionary water delivery method can reduce water use by 30% or more. To see the difference MP Rotators can make if you upgrade your existing spray head system, use the slider to enter your information.

Annually, MP
Rotators Could
Save You
236,018 gallons
of water (31% of
what you're using
now), and \$1359.

Percentage of Grass Area changing from sprays to MP Rotators

100%

100

Back

Show Results



Replace these...



...With these



WATER-SAVING DEVICE

## #112

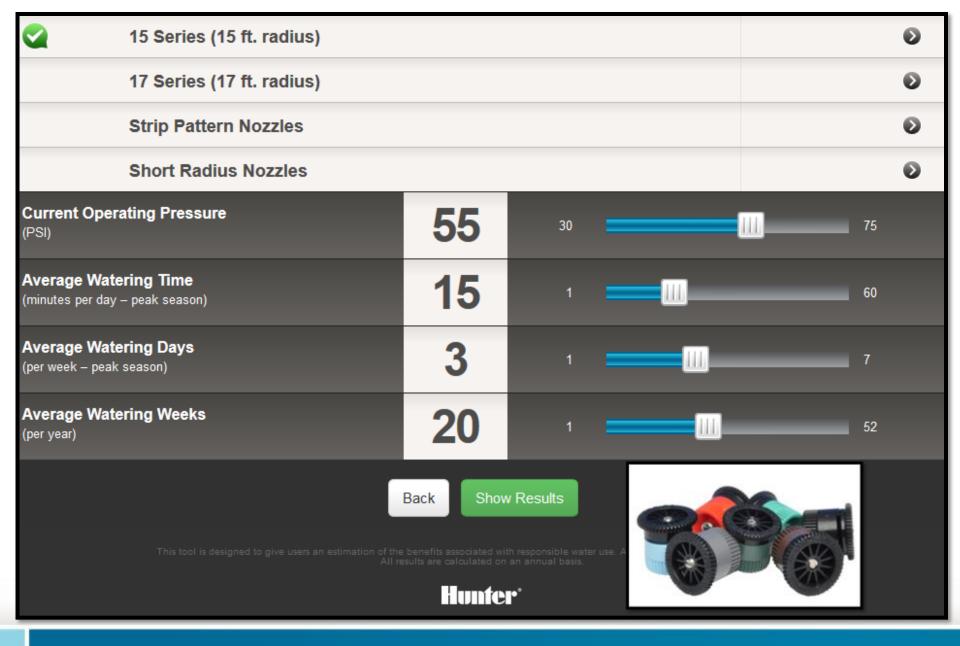
USE SPRINKLERS THAT DELIVER BIG DROPS OF WATER CLOSE TO THE GROUND. SMALLER DROPS AND MIST OFTEN EVAPORATE BEFORE HITTING THE GROUND.

There are a number of ways to save water, and they all start with you. To learn more visit wateruseltwisely.com











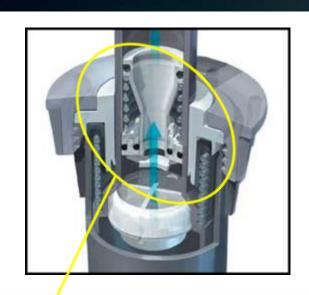
#### Conventional Spray Nozzle Pressure Regulation

#### Regulating Water Pressure For Spray Applications

An important element of efficient irrigation is regulating water pressure. To ensure optimal pressure in spray applications, Hunter offers the PRS30. The PRS30 uses the Pro-Spray body with a built-in 30 PSI regulator to ensure spray nozzles operate at optimum pressure. To see how the PRS30 can upgrade your existing system, enter your information in the fields below.















WATER-SAVING DEVICE

## #115

REMEMBER TO PERIODICALLY CHECK YOUR SPRINKLER SYSTEM VALVES FOR LEAKS, AND TO KEEP SPRINKLER HEADS IN GOOD SHAPE.

sees where and they all shirt with you. In hours more wint





#### Outdoors:

- An irrigation system should be checked each spring before use to make sure it was not damaged by frost or freezing.
- An irrigation system that has a leak 1/32nd of an inch in diameter (about the thickness of a dime) can waste about 6,300 gallons of water per month.



# Drain Check Valve (CV) Available either factory-installed or field-installed

- Factory-installed: come with check valve ID on body cap
- Field-installed: snap into riser





#### **Sprinkler Check Valve** Annually, Check Valves could Drain Check Valves in sprinklers are a simple and economical way to guard against water save you 20,559 draining from the piping system after sprinklers irrigate. Water draining from the lowest gallons of water heads in a system each time it is operated, can add up over time. Most Hunter rotors and \$177. feature Check Valves, and spray heads feature them as either factory or field-installed options. Fill out your information below to see how Check Valves can impact your water use. **Start Times** 8 **Average Watering Days** (per week - peak season) Average Watering Weeks 20 52 (per year) Gentle Moderate Steep Flat Landscape Slope (0-2%)(2-5%)(5-10%) (>10%)



#### WATER-SAVING DEVICE



# TIMING IS EVERYTHING WHEN IT COMES TO IRRIGATION. LEARN HOW TO SET YOUR CONTROLLER PROPERLY.

There are a number of maps to nave water, and they at start with you. To leave more your woteruseltwisely com











#### Hunter's Run Time Calculator

Available 24 hours a day, 7 days a week. It's easy and best of all, it's free.



#### Water With Confidence

In order to get the most out of your irrigation system, you need to have your controller programmed with the correct run times for each of your zones. This calculator can automatically generate an irrigation schedule for your landscape and help protect you from wasting water. Get started today >>



Hunter\*

**RUN TIME CALCULATOR** 

# WITH CONFIDENCE

Generate your perfect irrigation schedule

Sign up now to set up a run time schedule that you can access from anywhere, anytime.

**First Name** 

Last Name

**Email Address** 

CREATE ACCOUNT

Hunter\*



ADJUST YOUR
WATERING SCHEDULE
EACH MONTH TO
MATCH SEASONAL
WEATHER CONDITIONS
AND LANDSCAPE
REQUIREMENTS.

There are a number of ways to save water, and they all start with you. To learn more wait wateruseltwinely.com





WATER-SAVING DEVICE

#100



# LOOK FOR WATERSENSE® LABELED IRRIGATION CONTROLLERS.

There are a number of ways to save water, and they all start with you. To learn more visit wateruseltwisely.com







### **BUILT TO CONSERVE**

Hunter's Lineup of Smart Controllers

LEARN MORE

























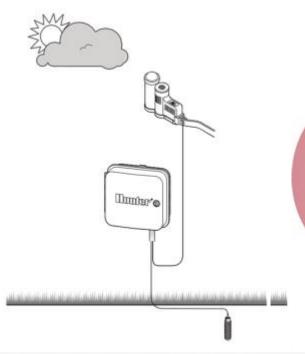


## **Real-Time Sensing & Remote Control**

 3 Sensor Inputs to Monitor Flow, Weather and Soil Moisture ... No Computers Needed!

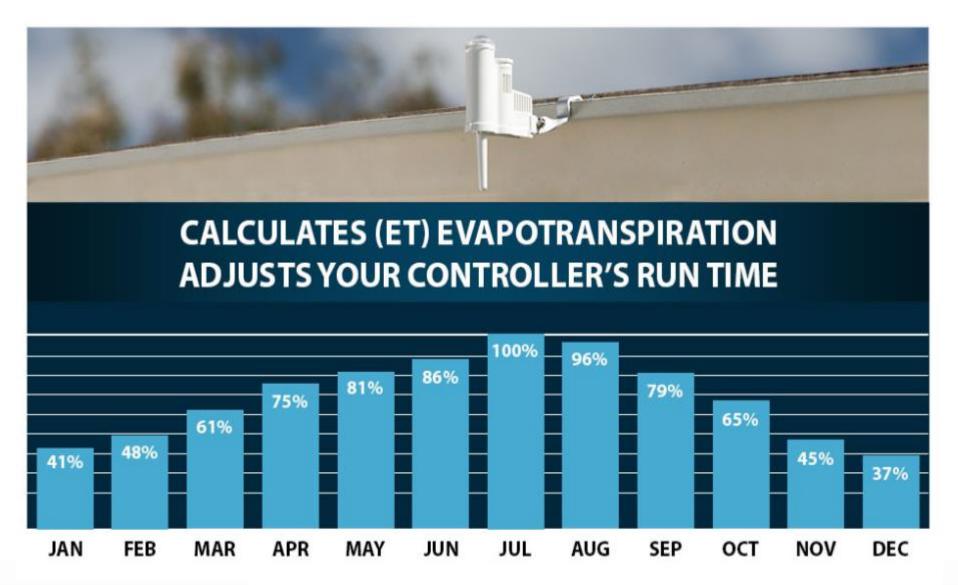
SmartPort® Input for Remote Control Use











Water Budget, Seasonal Adjust or Percent Adjust: This is a very convenient feature that allows you to change your watering times by a percentage across all zones. Set your controller with peak watering schedules and use the percent adjust feature to decrease and increase watering run times as the weather changes. Plants need different amounts of water during the irrigation season. The longer the days the more water a plant will need. As the days grow shorter, a plant's need for water decreases. Visit <a href="http://iwms.org/seattle\_area.asp">http://iwms.org/seattle\_area.asp</a> to sign up for the Seattle area Watering Index email service to receive the real time percentage.

HUNTER INDUSTRIES
Built on Innovation







# Any Hunter Controller with SOLAR SYNC



## Late Spring Run-times





Hunter<sup>®</sup>

# Early Summer Run-times





**Hunter**\*

## Peak Week Run-times (End of July, First of August)





Hunter\*

# Late Summer Run-times





Hunter<sup>®</sup>

## **Early Fall Run-times**







### **Solar Sync**

#### **Automatically Adjusting for Seasonal Changes**

The Solar Sync is an advanced weather sensor that adjusts controller run times based on daily weather conditions and greatly enhances system efficiency. To see just how much of an impact the Solar Sync will have on your system, select the months your landscape requires watering on the calendar.

Annually, Solar Sync Could Save You 467,908 gallons of water (34% of what you're using now), and \$2696.

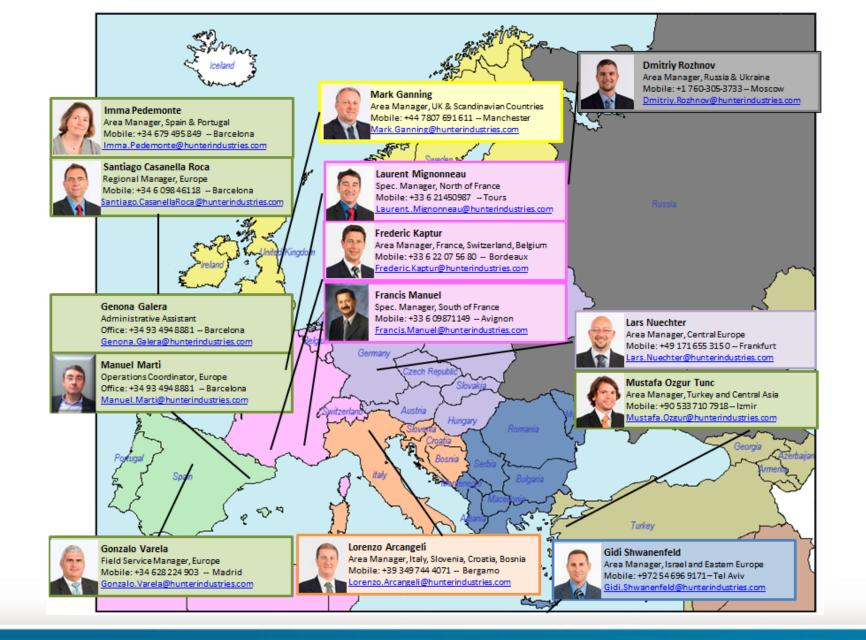
March April

May June July August

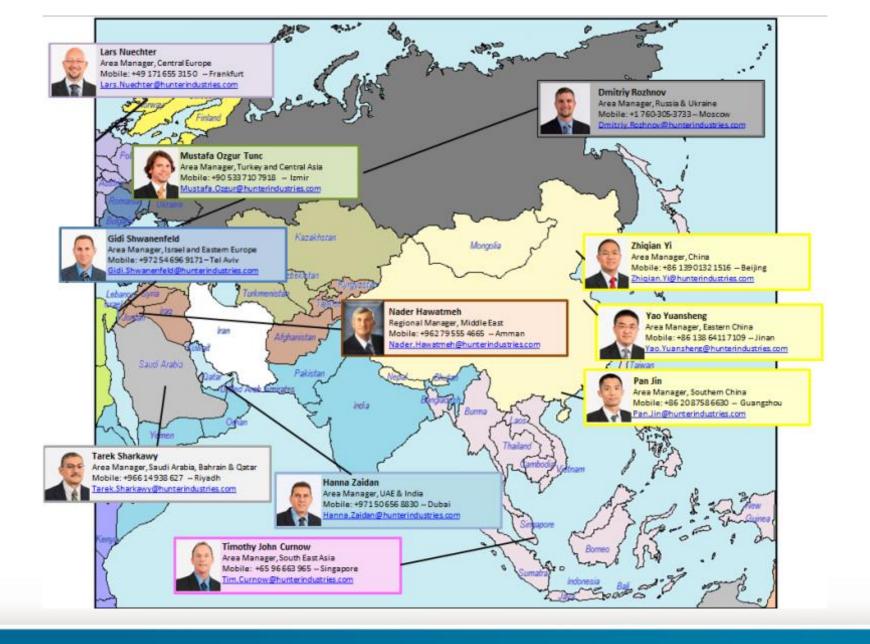
September October November December

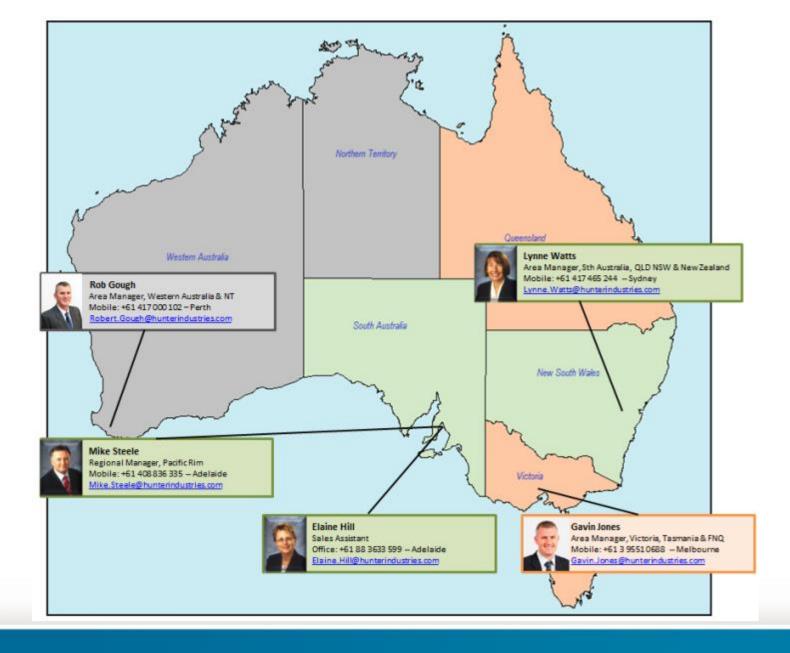
Back Show Results

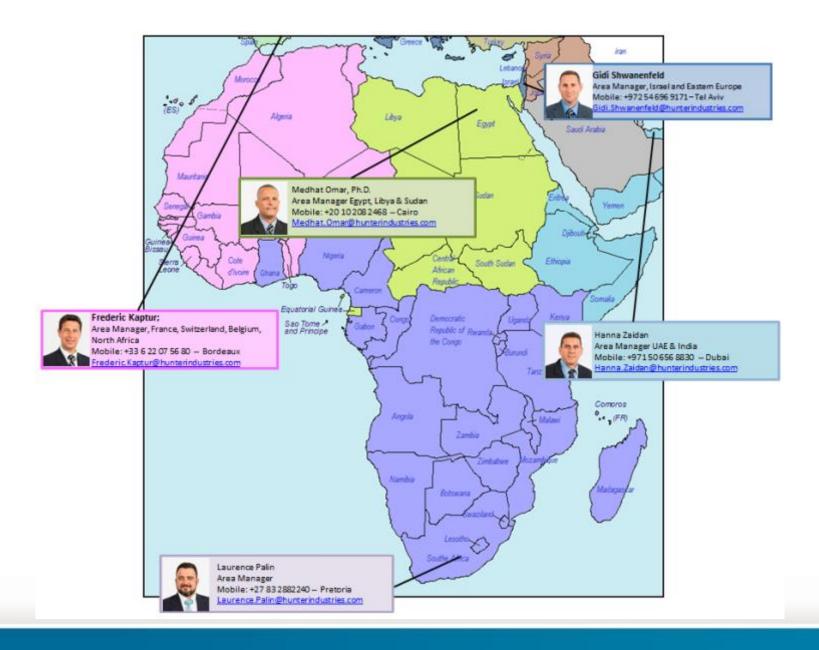


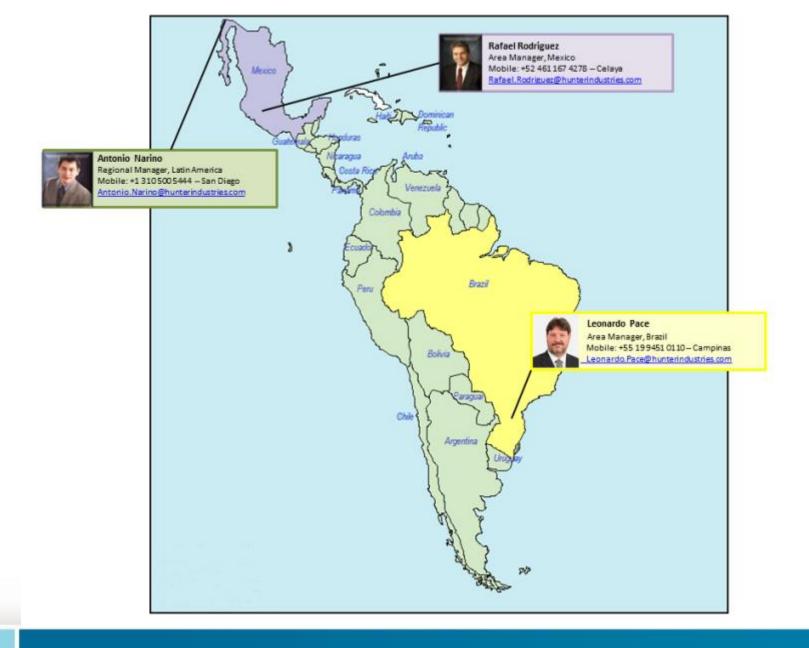
















# Environmental Harvesting / Sustainable Design Hunter Industries, San Marcos, California

Hunter Industries a premier manufacturer of high quality irrigation systems demonstrates their commitment to the environment by incorporating many cutting edge technologies in their new 139,270 square foot office and warehouse building. The LEED registered, SCA designed, building incorporates both solar and daylight harvesting techniques on a massive scale for the largest private employer in San Marcos, CA.

Two independent photovoltaic (pv) systems generating a total of 180-280 kilowatts (kw) of power will be located on the building's roof.



The Leadership in Energy and Environmental Design (LEED) Green Building Rating System is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings. LEED gives building owners and operators the tools they need to have an immediate and measurable impact on their buildings' performance. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.







# Leveraging the sun to power our business

Our new solar shade structure powers 35% of the LEED Silver Drip and Sprays Manufacturing facility. The panels also power 4 electric vehicle charging stations available to employees.

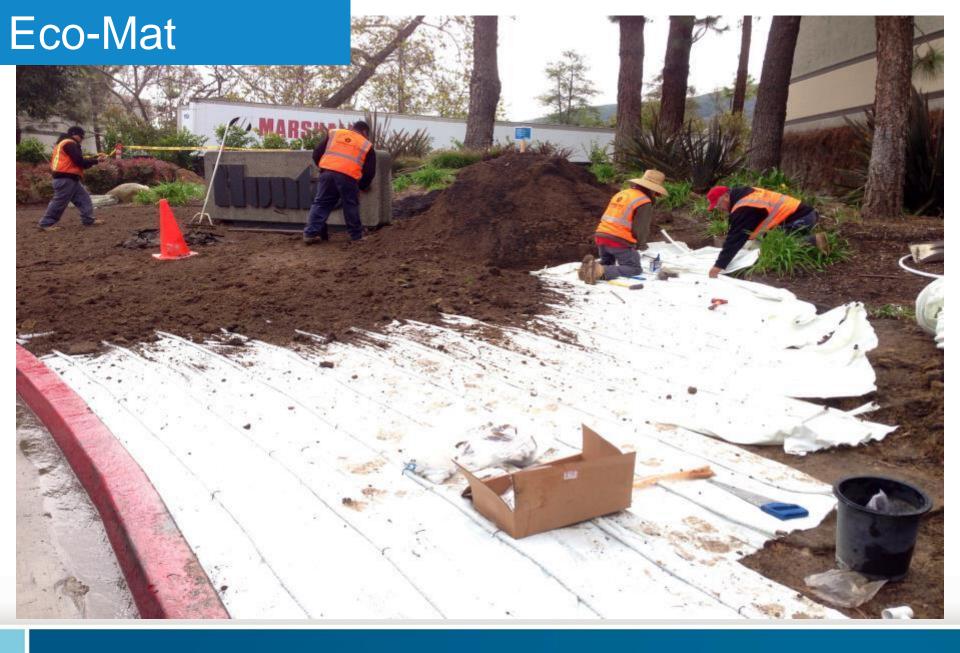
Last Opclated: Mar 12, 2014 10:15AM PDT

DC Capacity 144 kW AC Capacity
120 kW

SITE IMAGE

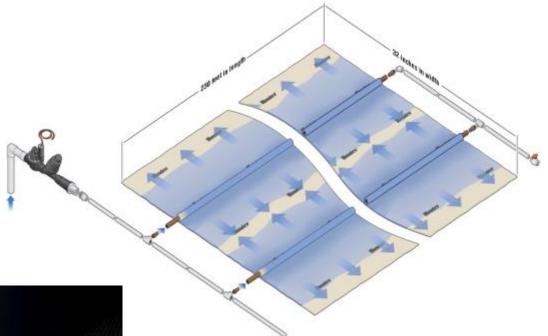








## **Eco-Mat**





- 32" wide x 230' roll
- 613 sq. ft. of coverage/roll
- Connect just like regular PLD
  - Header/Exhaust lines
- 17mm
- All Hunter Drip Products are made in CA, USA

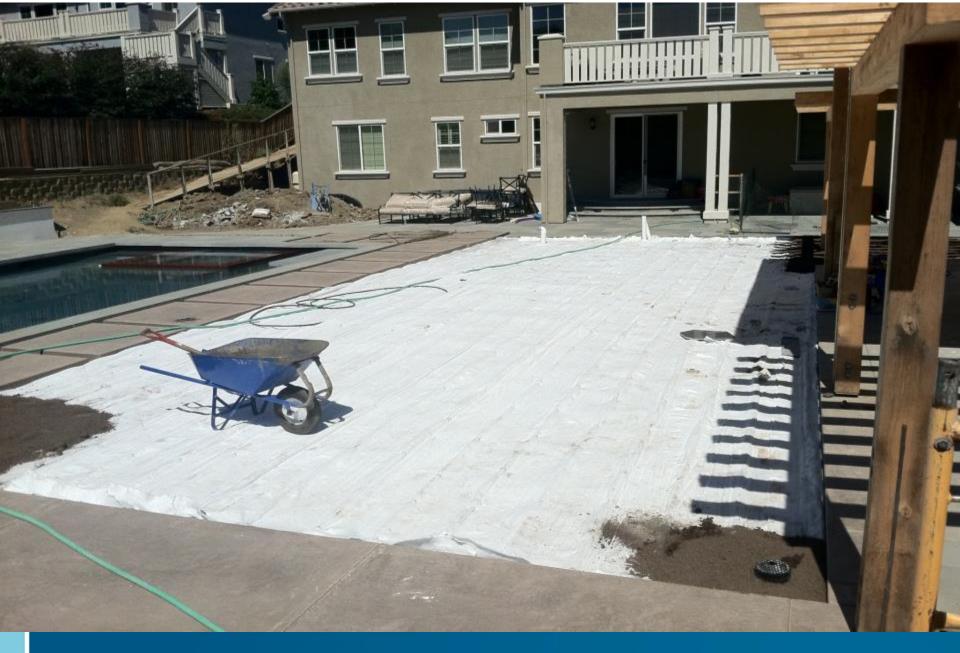




 Narrow or irregularly shaped areas, including turf, less than eight (8) feet in width in any direction shall be irrigated with subsurface irrigation







HUNTER INDUSTRIES
Built on Innovation

**Hunter**°







# Water Usage Benefits

- No water loss due to wind
- Minimal water lost through evaporation
- Almost 100% even water distribution
- No run-off
- Ability to water any time of day
- No overspray on hardscape

