Today’s Topics

• The Water Situation Today

• Smart Water Platform

• Components

• Who is WeatherTrak?

• Who has adopted so far?
Why SMART Irrigation Matters

- National Studies show irrigation consumes over 50% of urban water
  - Up to half of that usage is avoidable waste

- Traditional irrigation technology “timers / clocks” lead to over watering
  - No reliable or cost effective method to constantly adjust to changing needs

- Over-watering costs millions of wasted $$ each year in:
  - Water bills
  - Run off fines and damages
  - Liabilities and costs to address mold, puddles, plant disease, erosion etc.
  - Landscape replacement
  - Unplanned maintenance costs
  - Over watering by 30 - 300% !!!!!
Hidden Costs and Liabilities of Mismanaged Water

**Plant Disease**
Over-watering: 80% of plant problems

**Moldy Foundations**
Mold-related claims up 300% since 1999

**Jury $$ awards up 116%**

**Liability Exposure**

**Hardscape Damage**
Repair costs up 32% in last 5 years

**Clean Water Act:**
$10K fines per day

**Pollution Runoff**

WeatherTRAK
The proven leader in smart water management.
What Mismanaged Water Does to Properties
Seen around?
Water Waste Is Costing Your Properties More Than Just Water
True Cost of Mismanaged Water

- Sewer Overcharge: 15%
- High Water Bills: 15%
- Injury and Liability: 15%
- Landscape Replacement & Maintenance: 11%
- Hardscape Damage: 36%
- Brand Degradation: 8%
Why Are We Here
Requirements Have Changed

• Irrigation no longer just a tool to keep plants alive
• New issues are forcing changes on all water use
  – Increasing Water, Labor and Fuel Costs
  – Water Fines
  – Usage Regulations
  – Property Damages
• **Shifting requirement to Resource Management**
  • Water as a resource
  • Landscape as a resources
  • Property as a resources
  • People as a resources
• **Spotlight on technology and best practices to meet new requirements**
Today’s Property Mgmt Executives: Under Pressure

How do we find a low-risk, green initiative that makes economic sense?

Where are we exposed to multi-million dollars of uncontrolled risk?

Where can we find a new, untapped area of >20% cost savings?

How can we capitalize these savings to increase valuation?
Today’s Reality: “Traditional” Water Management

Traditional Timer

15 Minutes Everyday

Fails to consider...

Precipitation Rate

Rainfall

Solar Radiation

Temperature

Humidity

Wind

Soil Type

Sprinkler Type

Slope

Plant Type

Exposure
The Answer: Smart Water Management

Smart Water Management

6 Minutes

Zone:1 Zone:2

6 min 8 min

No Water

Zone:1 Zone:2

4 min No Water

Zone:1 Zone:2

3 min 3 min

2 cycles

Applies...

Precipitation Rate

Rainfall

Solar Radiation

Temperature

Humidity

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Soil Type

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Plant Type

Exposure

WeatherTRAK®
The proven leader in smart water management.
WeatherTRAK Smart Water Network
How it Works

Collects data from over 40,000 stations

Micro-manages each property based upon weather conditions, soil conditions

Weather Stations

Smart Water Network: Always-on, continuous monitoring

Climate Center

ET Everywhere: analyzes ET data

Scheduling Engine

Smart Controller

WeatherTRAK Central

ET Everywhere:
analyzes ET data

The proven leader in smart water management.
HydroPoint Smart Water Management Solution

WeatherTRAK Central

SAAS Management Application Suite
- Remote Management and Set Up
- Measurement and Verification
- Monitoring and Alert Notification
- “Water Grid” management

WeatherTRAK Climate Center

High Resolution Weather Data
- Virtual Weather Station every 1 square KM
- Evapotranspiration calculation and distribution
- Weather Data Products

Smart Controller

Programmable On-site Management & Collection Computer
- 2-way wireless enabled
- Irrigation Scheduling Engine
- Activity Database
- Water Use Collection

The proven leader in smart water management.
ET Everywhere Process
Collect Weather Data

• **Daily collection of global weather data**
  – Approximately 40,000 weather stations in US

• **Daily validation of data integrity**
  – Error discovery
  – Anomalies flagged for investigation by in house meteorologists
  • Provide feedback to weather station maintainers and data providers

• **Final analysis and authorization of data set**
  – Heuristic and trend analysis
ET Everywhere Process Model Calculation Methodology

- **Methodology**
  - ET Everywhere Model Weather Data
    - High precision 0.01 degree Latitude - Longitude resolution
    - 24 hourly outputs based on a 3 second time slice
  - ET Everywhere Model Output
    - Temperature, Wind Speed, Relative Humidity, Solar Radiation, Rain, and Air Pressure for ET calculation
  - Calculate ASCE Penman-Monteith hourly ET data from that weather data
    - Calculate daily ET values based on summing of the hourly data

- **Patented approach**
  - Patent #7,337,042
  - Allows for control of an irrigation system through calculated ET values
WeatherTRAK ET Everywhere Service

What is ET? (Evapotranspiration)

The total amount of water transferred from the earth and plants to the atmosphere as a result of local weather

- Humidity
- Solar Radiation
- Temperature
- Wind

ET 0.25” Measured in inches per day
SAME ZIP CODE

Microzone ET Map
Petaluma, CA
July 7, 2009

CIMIS = .24"
Downtown = .19"
Coast = .04"

21% to 84% Difference
Impact on watering: Overwatering

In this example, between 9% & 37% more water is improperly applied if using CIMIS ET Values, WeatherBug Data or Zip ET data.

<table>
<thead>
<tr>
<th>Microzone #11100726 (park location) compared to CIMIS 78, Lone Star HS &amp; Zip ET</th>
<th>7 Day Cumulative ET Week of 10/14/2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>MZ = 11100726</td>
<td>Total Inches</td>
</tr>
<tr>
<td>ETE Park MZ</td>
<td>.52”</td>
</tr>
<tr>
<td>CIMIS 78</td>
<td>.57”¹</td>
</tr>
<tr>
<td>Lone Hill</td>
<td>.69”¹</td>
</tr>
<tr>
<td>ZIP ET</td>
<td>.71”²</td>
</tr>
</tbody>
</table>

¹ – actual data, ² – estimated value
Smart Water Manager
Product Details
WeatherTRAK Pro² Smart Water Manager
Easy Enclosure Installation and Use

• 12-48 stations in same mechanical footprint
• Fits into any existing commercial controller width
  – 12” wide x 17” tall
• Fits easily into existing large enclosures such as VIT
• Available in multiple materials
  – Stainless Steel 18 gauge for industrial applications
  – Powder-Coated Cold Rolled Steel 18 gauge
• Key-Lock Entry
• Easily converts to a pedestal model
• Larger field wire knockout for higher station count and corresponding field wires
WeatherTRAK Pro² Smart Water Manager
Mounting Styles

Wall Mount

Pedestal Mount
WeatherTRAK ET Pro² Smart Water Manager
Easy Field Wire Installation

- **Easy field wire installation**
  - Station outputs on one horizontal plane
  - Two wire inputs (12-22 gauge) per station
  - Four common’s per 24 stations
  - Robust push-in type connector

- **Terminal blocks made for irrigation industry uses**
  - Reinforced lever

- **Visual station on indicator**

- **Remote Compatible**
WeatherTRAK Central Internet Management
Real Time Control Over Your Network

Internet Central Control allows you to manage your network of WeatherTRAK controllers in real time, from any Internet-enabled computer anywhere in the world

• Programming / Schedule Changes
• Manual valve control
• Event shut-off
• Program Review
• Water Budgeting
• Instant alerts including controller and valve issues
• User defined reports (flow, runtimes, alerts …)

NO WIRES OR PHONE LINES NEEDED
WeatherTrak

- Based in Petaluma, CA
- Established in 2001
- Privately held and funded
- Focused on Smart Water Management Solutions
- Notable investors: JFShea- CitiGroup-Rockport Capital- Firelake Capital-Chyrsalix Energy-The Toro Company
- Serving over 21,000 Customers
HydroPoint Data Systems

- Smart water management company
  - Over 21,000 subscribers in our network
  - The most powerful green initiative with the fastest payback
  - In 2009 alone our current subscribers saved:
    - 11.3 billion gallons of water,
    - 45 million kilowatt hours\(^1\),
    - 60 million pounds of CO\(_2\)\(^2\)
    - > $75 million in expenses

1. 4 watts to 1 gallon water saved: EPA
2. 1.34 pounds of CO\(_2\) are emitted with the production of every kilowatt hour of power: DOE
The Most Powerful Green Initiative with The Fastest Payback

- **Green multiplier effect**
  - Protect precious resource
  - Save energy
  - Eliminate runoff pollution
  - Reduce carbon footprint

- **LEED™ points**

- **Low risk**
  - Leverage existing infrastructure

- **Complies with emerging laws**

- **Water agency rebate $$**

<table>
<thead>
<tr>
<th>Green Initiative</th>
<th>Time to payback:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar Roof Panels</td>
<td>10 yrs</td>
</tr>
<tr>
<td>Low Flow Toilets</td>
<td>4 yrs</td>
</tr>
<tr>
<td>Lighting Retrofits</td>
<td>1-2 yrs</td>
</tr>
<tr>
<td>Smart Water Management</td>
<td>1-2 yrs</td>
</tr>
</tbody>
</table>
23 Independent Agency Studies

- CA EPA Study: 71% runoff reduction
- LADWP – 95% savings of potential water waste
- Irvine Ranch Water District: 20% savings, 97% customer sat
- Santa Barbara Water– 26%-59% savings
- Bend, Oregon – 41% savings in city landscapes
- University of Nevada, Reno – 27% savings compared to manual
- University of Nevada, Las Vegas – 22% avg. savings
- Utah Dept. of Water – 27% avg. savings
- University of Florida – Most accurate weather over 1-year period
- IA SWAT – 100% Adequacy – 0% Excess
National Corporations
Smart Controller Success

Kohls  McDonald's  Coca-Cola  Lockheed Martin
Google  Target  AT&T  Panasonic
Amazon.com  Safeway  AMD  Apple
Other Recent Agencies/Customers

• City of Santa Clarita
• County of Los Angeles
• Los Angeles Unified School District
• Major Retailer Spec
• Largest religious landlord
THANK YOU

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