Panelists

- Vance Merolla, Colgate-Palmolive
- Bob Valair, Staples
- Moderator: Andre de Fontaine, US DOE
Better Buildings Water Savings Initiative

- 35 Partners
- 8 Goal Achievers (including Staples!)
- 4 billion in cumulative water savings
- 20 proven water saving solutions
Staples National Water Program

Bob Valair
Director of Energy & Environmental Management
Staples is a Global Company

26 Countries

World’s Largest Office Supply

United States
1900 stores, 200+ FCs & DCs

5 Continents

$24 Billion

96,000 Employees

First store 1986
Staples Water Program

• **2020 Goals**
  - Reduce Water Consumption by 20%
  - Reduce Carbon Footprint by 50%

• **Staples Water Portfolio**
  - 1500 Retail Stores
  - Distribution Centers and Fulfillment Centers
  - Home Office, Framingham, MA
Water Management

- Prototypes
- Landlords and Leases
- Policies and Procedures
- Landscaping Irrigation
  - Partner with Landscapers
  - Look for issues
- Water towers and chillers
  - Water and Sewer Charges
- Bathrooms Fixtures
- Maintenance
  - Proactive, aging fleet, work orders
- Managing bills and payment
  - Monthly, quarterly, bi-annually

Leaking Valve

Broken Head with Leaking Water

Drip Line Growing into the Tree
Apply

Energy Management Strategy
to

Water Management
Understand the Details

- Understand Water Usage
  - Standard water usage by facilities
  - Understand tolerance, red flags
  - Identify outliers, high water users
  - Understand water rates
    - Growing 8-10% per year
THE PRICE OF WATER: 2015
Combined water, sewer and stormwater prices for households in 30 major U.S. cities.

Seattle and Atlanta have the highest total monthly bills. Each is building costly underground storage facilities and treatment plants to comply with federal requirements to reduce raw sewage that is dumped into lakes and rivers.

Santa Fe has the highest water prices in the survey. The small city of 70,000 recently completed a $US 187 million pipeline from the Rio Grande.

Baltimore has stormwater fees that are mandated by state law as part of a program to keep polluted runoff from entering the Chesapeake Bay.
Regulations

• Regulations
  • Mandated by States
  • Water Restrictions
  • Odd even days
  • Fines
• Systems Compliance?
• EMS Systems
• Rain Sensors
• Process for Spring start up and Fall Shut Downs
• Geographical Climate Zones
Rialto, CA

- Staples designed and built, 1M square feet, 16 years old
- Energy Strategy is now being applied to Water Strategy
- Use of nearly 14 million gallons of water
- Identified broken heads, lateral line leaks, broken valves, and miscellaneous zones that were operating independently of the controller.
- Smart meters allowed for remote control, EMS

Rialto DC Monthly Water Usage

- Gallons
- Irrigation
- Domestic
Rialto, CA Resolutions & Business Case

- EMS Systems are now being applied to Water Systems
  - Weather-based controller and programing - 20-40% Savings
  - High efficiency nozzles
  - Lower precipitation rate
  - Maintenance and repairs on drip lines, heads, leaks
  - Alarms
- Benefits
  - Better turf quality
  - Lowered operating expense
  - Maintaining beautification of the landscape
  - Compliance with local and state regulations
## Retail Store – City of Industry, CA

<table>
<thead>
<tr>
<th>Water Violations Found</th>
<th>Number of Broken Heads</th>
<th>Number of Broken Valves</th>
<th>Number of Lateral Line Leaks</th>
<th>Estimated Gallons Saved</th>
<th>Estimated Savings/Benefits</th>
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<tbody>
<tr>
<td>Watering outside of restriction, waters every day.</td>
<td>41</td>
<td>1</td>
<td>2</td>
<td>499,996</td>
<td></td>
<td>571 spray head retrofits. Sprinklers along one side spraying in opposite direction, system should be redesigned</td>
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## Dentco Irrigation Services

### Retail Store – Tampa, FL

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<td>Watering outside of restriction, waters every day.</td>
<td>8</td>
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<td>1</td>
<td>0</td>
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<td>105 spray head retrofits. 3 Broken drip lines flooding area</td>
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### Images

- **Dentco Serviced**
  - **Broken Spray Head**
  - **Poor Landscape Aesthetics & Dying Turf**
  - **Drip Line Growing INTO the Tree**
## Retail Store - Mira Mesa, CA

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<td>3 programs watering multiple times per day...over 1000 min/week over watering</td>
<td>16</td>
<td>5</td>
<td>5</td>
<td>600,000</td>
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222 spray head retrofits. Many areas of pooling water, oversaturation and asphalt damage. Need to install submeter

---

Asphalt Damaged Caused by Continual Leakage/Over Spray

Flood Irrigation – Leaks and Over Watering
## Retail Store - Apple Valley, MN

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<td>44</td>
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**Images:**
- **Broken Head at Entrance**
- **Leaking Valve/Broken Head**
- **Lateral Line Leak**
- **Leaking Blow Out Port**
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<tr>
<th>Site Name</th>
<th>Total Cost of Repairs</th>
<th>Estimated Gallons Saved</th>
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<tr>
<td>City of Industry, CA</td>
<td>$6,800</td>
<td>499,996</td>
</tr>
<tr>
<td>Tampa, FL</td>
<td>$4,500</td>
<td>250,000</td>
</tr>
<tr>
<td>Yorba Linda, CA</td>
<td>$1,587</td>
<td>196,000</td>
</tr>
<tr>
<td>Mira Mesa, CA</td>
<td>$3,500</td>
<td>600,000</td>
</tr>
<tr>
<td>Apple Valley, MN</td>
<td>$2,145</td>
<td>400,000</td>
</tr>
<tr>
<td>Aurora, CO</td>
<td>$750</td>
<td>320,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$18,520</strong></td>
<td><strong>2,270,000</strong></td>
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## Site Findings Summary

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<td>Yorba Linda, CA</td>
<td>None</td>
<td>10</td>
<td>5</td>
<td>1</td>
<td>Zones underwatering with significant amount of stressed/dead plants. Some watering areas with no plant material.</td>
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<tr>
<td>Aurora, CO</td>
<td>Usage is in line with turf needs. 8 zones that are not running and turf stress is apparent</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>5 broken heads (out of 939). Currently watering close to turf needs.</td>
</tr>
</tbody>
</table>
Thank you

Bob Valair
Director of Energy & Environmental Management
Thank You

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