



# Making the Business Case for Water Savings

May 16, 2017

3:45 to 5 p.m.

# 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



**Bob Valair**

**Staples**



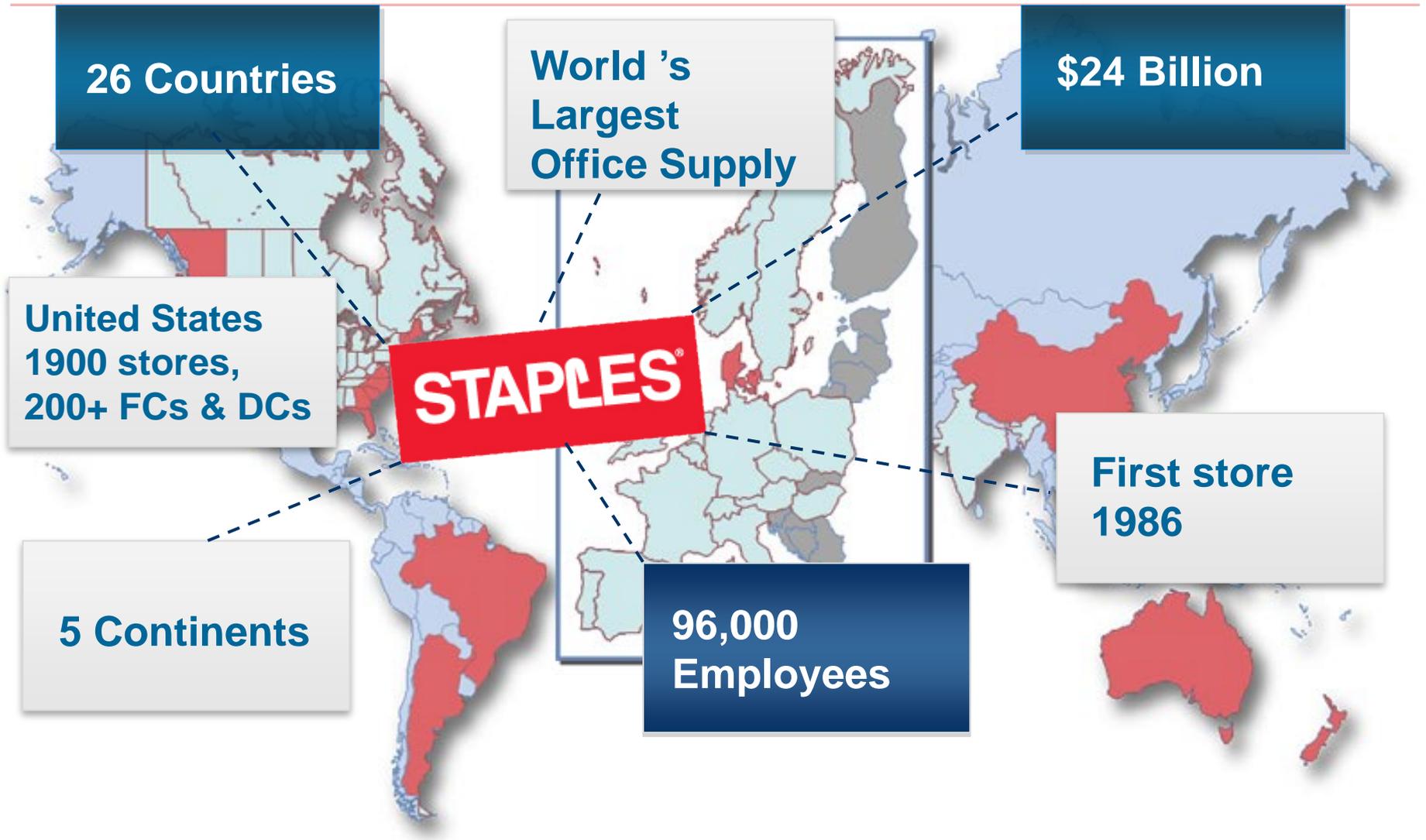
# Staples National Water Program

**Bob Valair**

**Director of Energy & Environmental Management**

**STAPLES®**

# Staples is a Global Company



# Staples Water Program

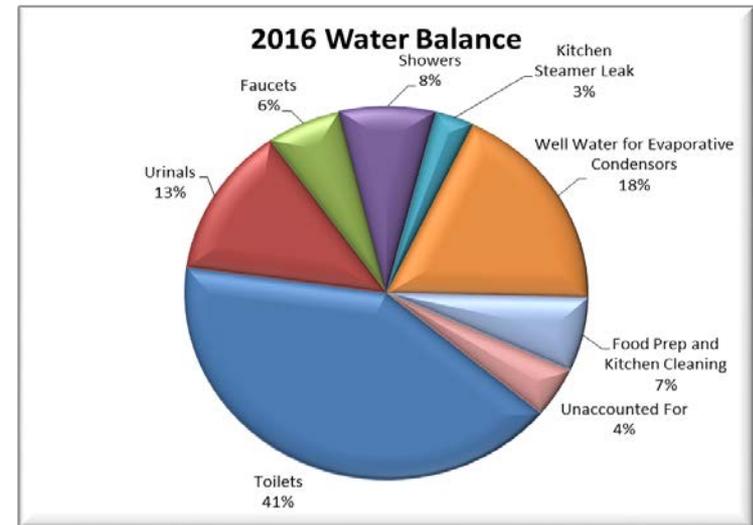
---

- **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

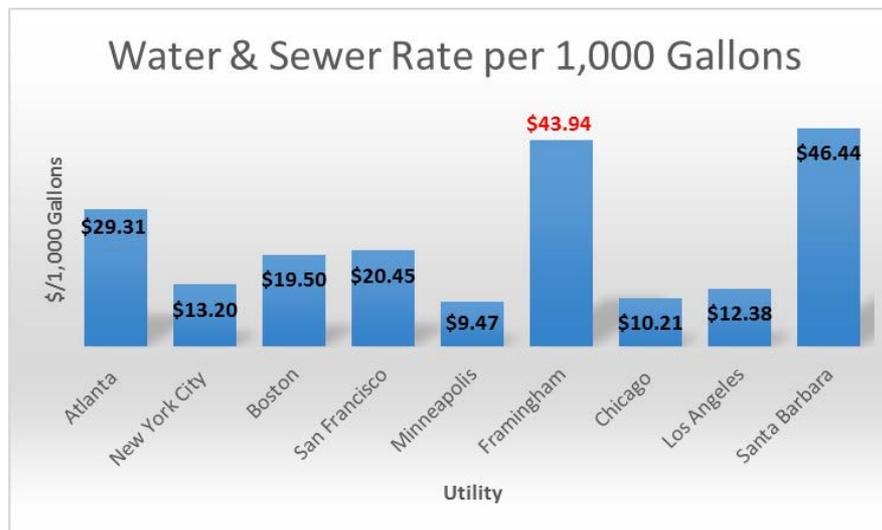
---

Apply  
Energy Management Strategy  
to  
Water Management

# Understand the Details

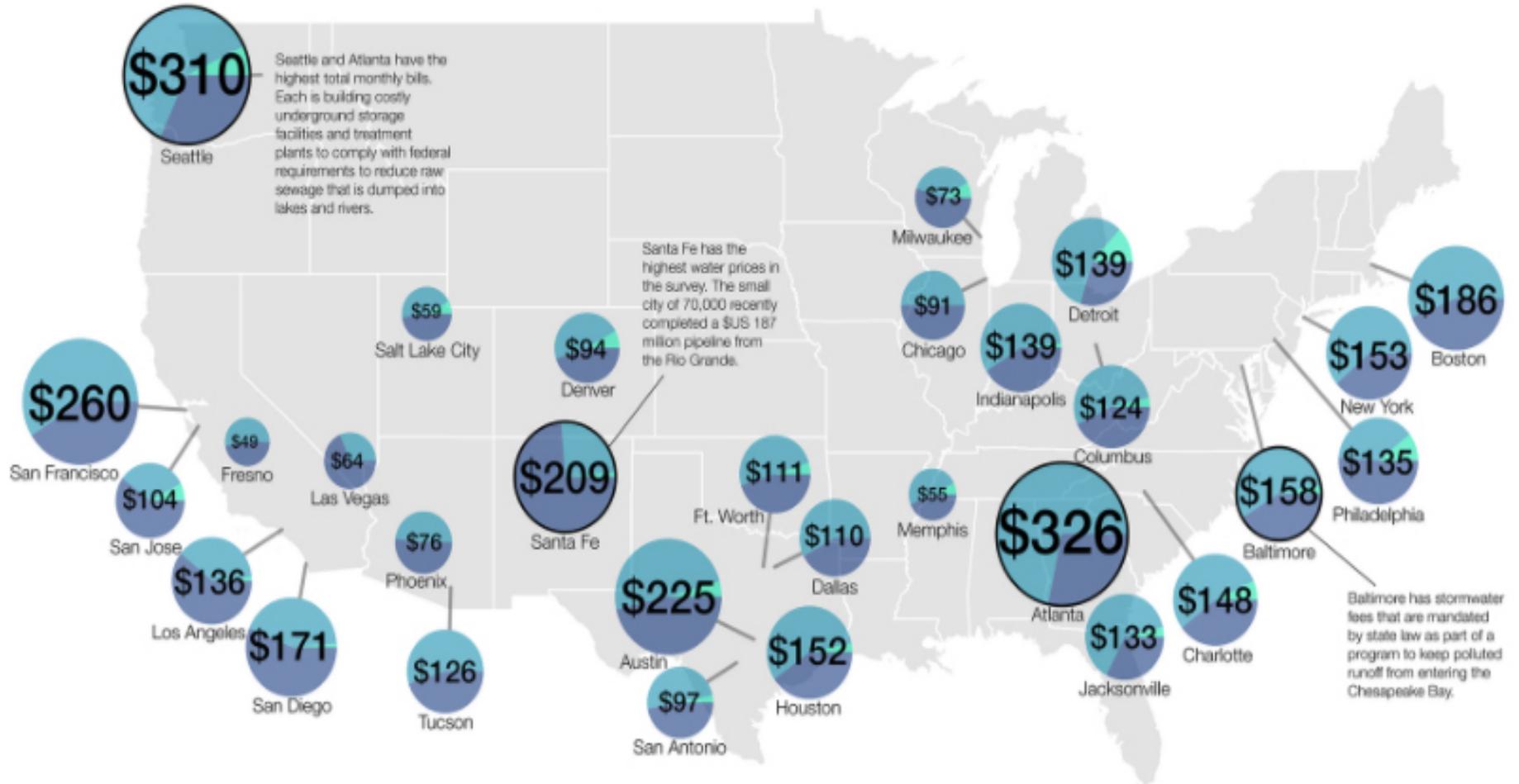
---

- 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.



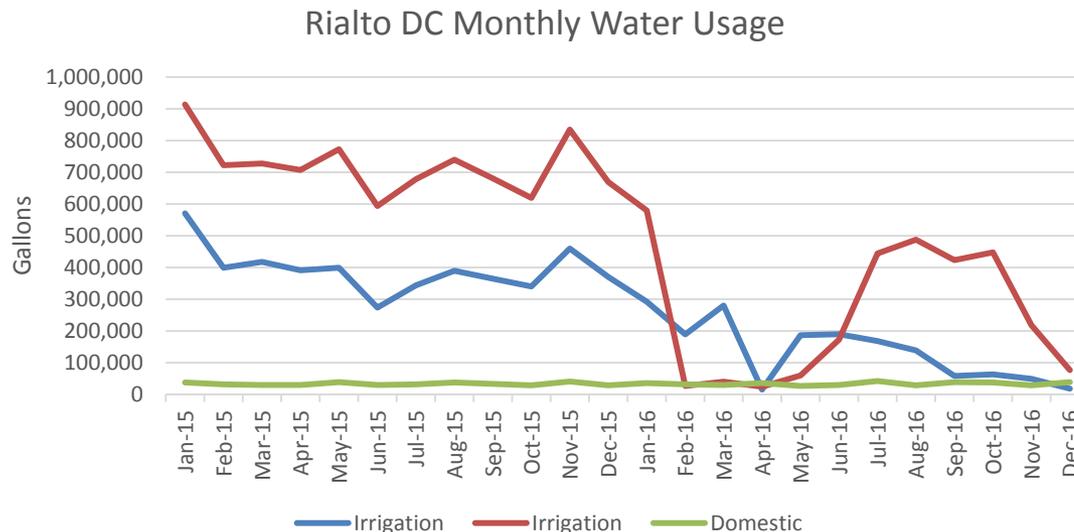
# Regulations

---

- 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, CA Resolutions & Business Case

---

- EMS Systems are now being applied to Water Systems
  - Weather-based controller and programming - 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

Water Violations Found	Number of Broken Heads	Number of Broken Valves	Number of Lateral Line Leaks	Estimated Gallons Saved	Estimated Savings/Benefits	Notes
Watering outside of restriction, waters every day.	41	1	2	499,996		571 spray head retrofits. Sprinklers along one side spraying in opposite direction, system should be redesigned



Old Non-Weather Based Controller



Leaking Valve



Broken Head with Leaking Water

# Retail Store – Tampa, FL

Dentco Irrigation Services	Water Violations Found	Number of Broken Heads	Number of Broken Valves	Number of Lateral Line Leaks	Estimated Gallons Saved	Estimated Savings/Benefits	Notes
Dentco Serviced	Watering outside of restriction, waters every day.	8	0	1	0		105 spray head retrofits. 3 Broken drip lines flooding area



Broken Spray Head



Poor Landscape Aesthetics & Dying Turf



Drip Line Growing INTO the Tree

# Retail Store - Mira Mesa, CA

Water Violations Found	Number of Broken Heads	Number of Broken Valves	Number of Lateral Line Leaks	Estimated Gallons Saved	Estimated Savings/Benefits	Notes
3 programs watering multiple times per day...over 1000 min/week over watering	16	5	5	600,000		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

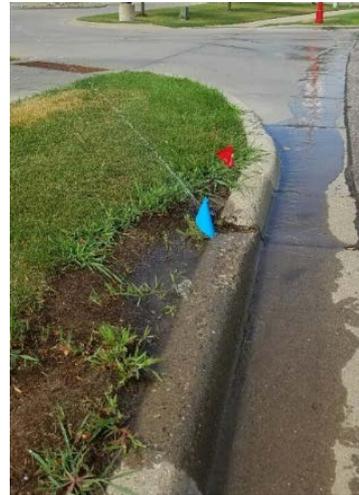
Water Violations Found	Number of Broken Heads	Number of Broken Valves	Number of Lateral Line Leaks	Estimated Gallons Saved	Estimated Savings/Benefits	Notes
None	44	0	26	400,000		Runs DAILY, rotors @ 55min, sprays @ 18 min. Lateral lines will continue to break due to mfg defect



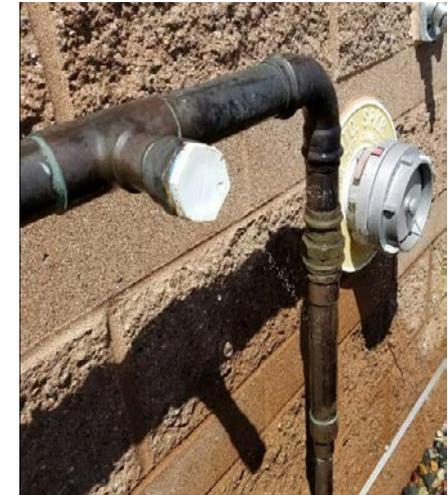
Broken Head at Entrance



Leaking Valve/Broken Head



Lateral Line Leak



Leaking Blow Out Port

# Business Case

---

Site Name	Total Cost of Repairs	Estimated Gallons Saved
City of Industry, CA	\$6,800	499,996
Tampa, FL	\$4,500	250,000
Yorba Linda, CA	\$1,587	196,000
Mira Mesa, CA	\$3,500	600,000
Apple Valley, MN	\$2,145	400,000
Aurora, CO	\$750	320,000
<b>Total</b>	<b>\$18,520</b>	<b>2,270,000</b>



CONFIDENTIAL — FOR INTERNAL USE ONLY

# Site Findings Summary

Site Name	Water Violations Found	Number of Broken Heads	Number of Broken Valves	Number of Lateral Line Leaks	Notes
City of Industry, CA	Watering outside fo restriction, waters every day.	41	1	2	571 spray head retrofits. Sprinklers along one side spraying in opposite direction, system should be redesigned
Tampa, FL	Watering outside fo restriction, waters every day.	8	0	1	105 spray head retrofits. 3 Broken drip lines flooding area
Yorba Linda, CA	None	10	5	1	Zones underwatering with significant amount of stressed/dead plants. Some watering areas with no plant material.
Mira Mesa, CA	3 programs watering multiple times per day...over 1000 min/week over watering	16	5	5	222 spray head retrofits. Many areas of pooling water, oversaturation and asphalt damage. Need to install submeter
Apple Valley, MN	None	44	0	26	Runs DAILY, rotors @ 55min, sprays @ 18 min. Lateral lines will continue to break due to mfg defect
Aurora, CO	Usage is in line with turf needs. 8 zones that are not running and turf stress is apparent	5	0	0	5 broken heads (out of 939). Currently watering close to turf needs.



**Thank you**

**Bob Valair**

**Director of Energy & Environmental Management**

**STAPLES®**

**Vance Merolla**

**Colgate-Palmolive**

# Thank You

Provide feedback on this session in the new Summit App!

Download the app to your mobile device or go to [bbsummit.pathable.com](https://bbsummit.pathable.com)

