

# A National Leader in Energy Conservation, But What About *Water*?



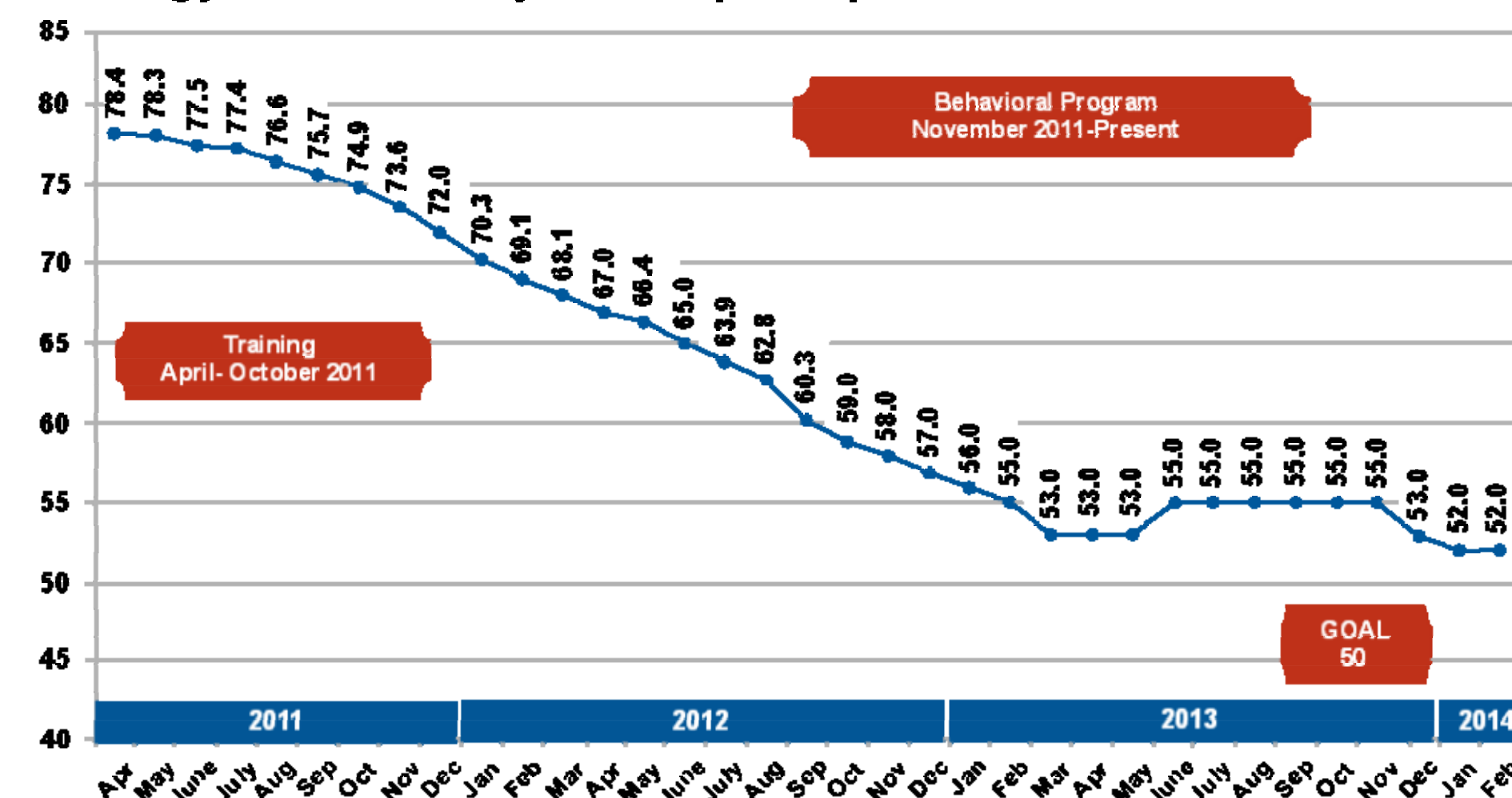
## VALENCIA AT A GLANCE

- Orlando, Florida
- >60,000 students
- Five campuses
- 66 buildings constructed between 1971 and 2012
- Six buildings, 25% of total the college's 2.1 million square feet, were built to LEED Gold
- Cut energy usage per square foot nearly in half over the past five years
- \$6.5M saved since 2009 (\$2.6M from behavioral change program alone)
- Shut down procedures, evaluation of unoccupied classrooms and offices, energy audits, oversight of comfort complaints, adoption of college-wide guidelines for energy efficiency, publicity of savings achieved and recognition of "energy heroes," and engaging communication with faculty and staff have all contributed to this dramatic cost reduction.
- Key partnerships (Cenergistic and Automated Logic Controls) and staffing (dedicated Operation Mangers for Energy Efficiency and Energy Education)

## VALENCIA'S ENERGY JOURNEY

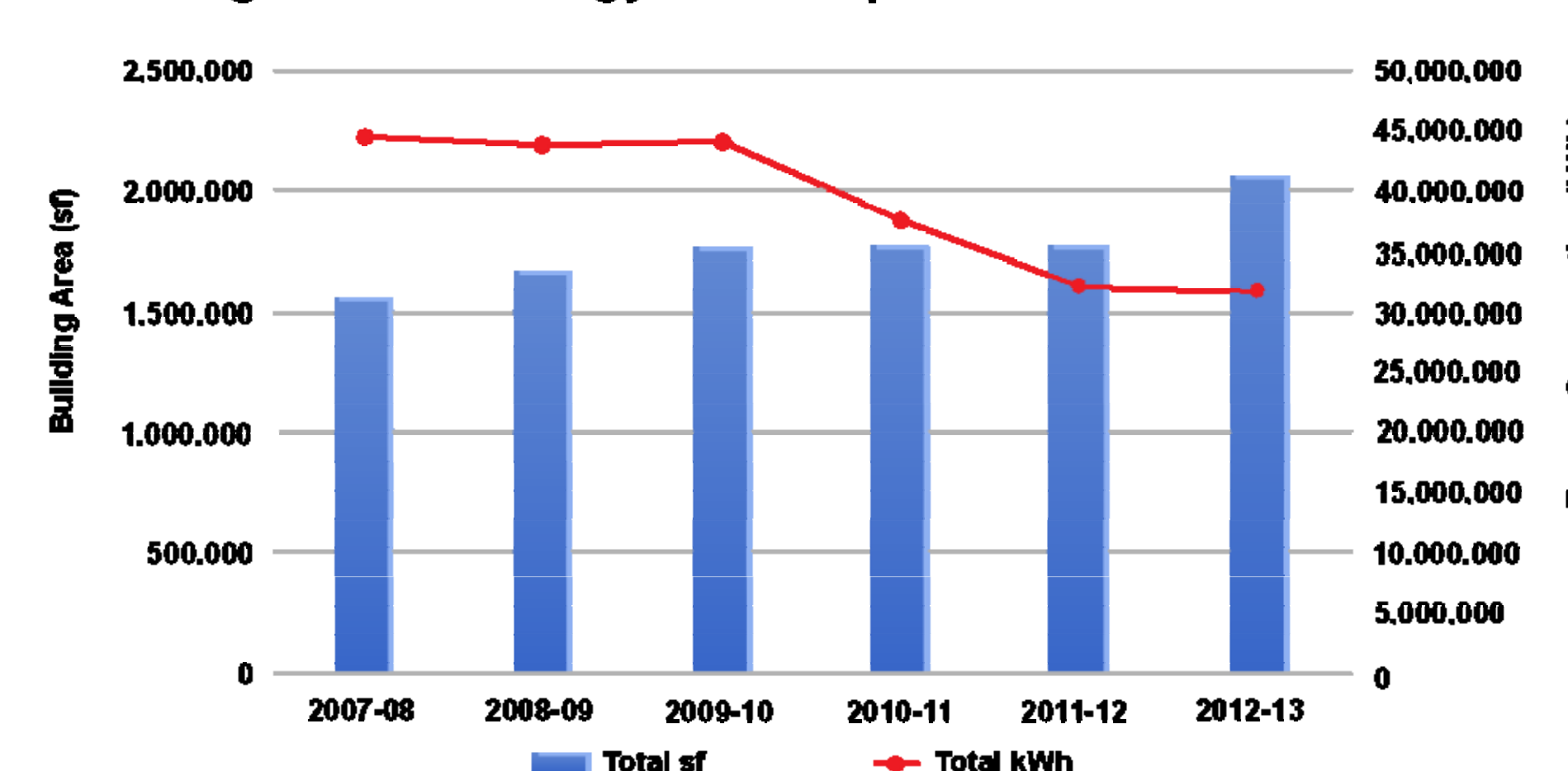
### OUR FOCUS ON BEHAVIORAL CHANGE

Energy Use Intensity – kBtu per square foot trend



### SUSTAINABILITY AND ENERGY MANAGEMENT

Building Area vs. Energy Consumption



## VALENCIA'S WATER SAVINGS

\*All of the following actions reduce costs related to utility, labor, and/or purchasing

- Low Maintenance Native Landscaping**
  - Moisture sensors
  - Planting trees (reduces evaporation and increases soil moisture)
  - Changeover from St. Augustine grass to drought-tolerant Bahia grass
- Water Refill Stations**
- Rainwater Harvesting and Reclaimed Water**
  - Osceola Campus: 10,000 gallon rainwater cistern for flushing toilets
  - West Campus the Special Events Center: 9,000 gallon rainwater cistern for flushing low-volume toilets
  - Reclaimed wastewater for irrigation on largest campuses
- Stormwater Management**
  - Retention ponds, vegetated swales, integrated pest management for water quality
- Indoor Water Use Efficiency**
  - Maximum Performance (MaP) testing for toilets and EPA WaterSense labeling program
  - Dual-flush toilets and others using no more than 1.28 gallons per flush for new installations and retrofits
  - 0.25 gallons per flush urinals compared to older 3 gallons per flush
  - Faucet aerators flowing at the rate of .5 gallons per minute or less
  - ENERGY STAR labeled air-cooled ice machines
- Cooling Towers**
  - Most chillers converted from air-cooled to water-cooled to increase energy efficiency. A low water usage chemical treatment program was implemented to offset spike in water usage

WATER USAGE AND COST PER ZEROTEK FISCAL YEAR													
	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	TOTALS
2007-2008													
kgal	1,983	2,268	2,031	2,272	2,495	2,244	2,214	1,537	2,210	1,115	900	761	22,030
\$1.25/cost	11,634	12,784	11,809	12,856	13,986	12,976	13,272	9,335	12,933	6,854	5,532	6,701	130,673
2008-2009													
kgal	2,096	2,418	2,404	2,433	3,273	2,440	1,341	1,399	1,450	1,558	2,941	2,737	26,490
\$1.25/cost	12,222	13,625	13,579	13,768	17,776	14,247	9,483	9,638	9,828	10,595	16,922	16,531	158,214
2009-2010													
kgal	2,827	3,100	2,777	2,762	3,186	2,366	1,423	628	1,399	1,192	2,081	2,220	25,961
\$1.34/cost	17,141	18,338	16,969	16,951	20,573	16,480	11,935	7,964	11,563	10,640	14,764	15,373	178,692
2010-2011													
kgal	1,614	1,856	1,900	1,776	1,953	1,636	1,140	385	1,007	880	1,219	1,226	16,592
\$1.54/cost	6,121	6,957	7,180	6,533	8,034	7,886	6,605	3,543	6,098	5,226	6,207	5,555	75,945
2011-2012													
kgal	1,827	1,540	1,484	1,275	1,765	1,437	1,149	613	1,220	1,024	1,482	1,416	16,232
\$1.54/cost	7,943	6,031	5,286	4,721	8,348	7,871	6,792	5,175	8,036	6,879	8,480	8,322	83,884
2011-2012													
kgal													102,763
\$1.54/cost													158,214

Water		Dollars	
Annual Water Usage for 2009-2010:	25,961,000	Annual Water Cost for 2009-2010:	\$178,691.78
Annual Water Usage for 2010-2011:	16,592,000	Annual Water Cost for 2010-2011:	\$75,944.64
Savings:	9,369,000	Savings:	\$102,747.14
Annual Water Usage for 2009-2010:	25,961,000	Annual Water Cost for 2009-2010:	\$178,691.78
Annual Water Usage for 2011-2012:	16,232,000	Annual Water Cost for 2010-2011:	\$83,884.32
Savings:	9,729,000	Savings:	\$94,807.46
Two (2) Year Accumulative Savings:	19,098,000	Two (2) Year Accumulative Savings:	\$197,554.60

NOTES:  
 2007 Old Plant 1,200 Tons  
 2008 Jan-May Central Plant Renovation; 500 Ton Temporary Air Cooled Chiller in Place  
 2008 October: Rate increase to \$1.34  
 2008 June: Building 10 On-Line  
 2008 November: Building 8 On-Line  
 2009 March: Rate increase to \$1.54  
 2009 April: Building 11 On-Line  
 2010 January: Make-up water turned off for two weeks during repairs  
 2010 February-May: Reduced water consumption as a result of repairs  
 2010 June: Zero bleed system on line  
 2011 October: Broken line; sewage rate increase  
 2012 February-March: Tower repairs and added value