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CASE STUDIES

## Battling drought in California's Ojai Valley with IoT

How The Thacher School uses smart water data to reduce campus-wide water consumption



**“By implementing Banyan’s smart water technology, we’re not only able to conserve water and save money but can and have integrated water insights into our marketing strategy. The ability to closely monitor and save water became a competitive advantage to attract prospective students and families who might have concerns about the school’s future, its sustainability plan or the state of its facilities because of where we’re located.”**

– Ed Bennett, director of facilities for The Thacher School

# A COMPLEX CAMPUS IN A DROUGHT-STRICKEN REGION

The Thacher School is a coeducational, college preparatory independent boarding school in Ojai, California, a particularly drought-susceptible region in Southern California. The constant and pervasive threat of widespread drought combined with the ever-present maintenance requirements of Thacher's sprawling and complex 427-acre campus created troublesome challenges for the school if left unchecked. For Thacher's staff and board of trustees—which view water scarcity as a top threat to the school's operability, sustainability, admission's process, fundraising efforts and to the student body as a whole—doing nothing was not an option.

Prior to Thacher's partnership with Banyan, the school's decision-makers set a target of 85 percent water usage reduction compared to 2013 levels. After making a series of common-sense decisions around water usage—watering later at night, qualitatively reducing water usage, installing sections of natural turf—the school had cut its usage significantly, but not enough to meet its goals. To achieve the rest of its water savings goals, director of facilities Ed Bennett began to examine IoT and data analytics technologies that could provide a total water management solution.

More than  
**24 million**

Californians are  
affected by drought



Thacher's water usage goal, in gallons, compared to 2013 levels

## UNPRECEDENTED ACCESS TO WATER USAGE INSIGHTS

Bennett sought a platform that could monitor and control both indoor and outdoor water usage across the campus's 300,000 square feet and 123 buildings, as well as a data visualization component that enabled him to analyze and control water usage from his mobile phone as he was out and about on campus.

He's now able to do both with Banyan Water Central, Banyan's mobile-friendly water management dashboard. The results, Bennett says, have been great so far, with Banyan contributing significantly to Thacher's overall water savings of 40 percent.

**Located in Ojai, California, The Thacher School is an independent boarding school with dorms, athletic fields, academic buildings, horse stables and more.**

**427**  
acres

**123**  
buildings

# TOP-TO-BOTTOM SUPPORT

The operational savings from which Thacher has benefited following Banyan's implementation have attracted support from the school's stakeholders at all levels, including:

- **The board of trustees, which appreciates the macro-level benefits associated with Banyan's platform, including total water savings, related cost reductions costs and an increase in asset value.**
- **Alumni with an interest in sustainability whose contributions support the school through an annual fund.**
- **Prospective parents concerned about the school's staying power.**
- **Enrolled students, who compete with each other in dorm-wide contests to reduce water usage. Each dorm even has its water usage statistics displayed publicly around campus through Banyan's platform to remind students to build better water usage habits into their daily routines.**

**“Banyan’s flexibility in data presentation and analysis cannot be overstated. Presenting students with micro-trends based on each individual dorm’s usage and showing board members macro-level trends campus-wide from the same tool has been hugely valuable for both the facilities team and the school as a whole.”**

**— Ed Bennett, director of facilities  
for The Thacher School**



## IMT RIATA

Largest multifamily community in Central Texas saves 52 million gallons of water each year.

### THE SITUATION: A LARGE PROPERTY WITH COMPLEX WATER NEEDS

IMT Residential's RIATA is the largest multifamily community in Central Texas and is one of Banyan Water's oldest customers. The property covers 160 acres and has a complex irrigation system. Austin, Texas, where RIATA is located, has only recently recovered from a long-term drought which made landscape maintenance especially challenging for several years.

### A LONG-TERM PARTNERSHIP

IMT Residential partnered with Banyan Water because of their ability to manage large and complex properties while saving water. Banyan Water uses its smart technologies and comprehensive services to provide a turnkey solution: actively managing soil moisture to irrigate only what is required. What's more, Banyan Water's technology monitors water flow across the property and immediately detects leaks or unusual water use. Lisa Soto, Senior Community Manager for RIATA, says, "I don't ever have to worry. Banyan Water does everything and keeps me informed of any repairs that need to be made, and I know that they will always have a solution for us."

### Property

- Located in Austin, Texas
- Multifamily residential
- 2,044 units
- 160 Acres

### 2018 Highlights

- 52 million gallons of water saved in 2018
- Annual savings for 350 households
- 79% reduction in irrigation water use in 2018

## WATER SAVINGS AND NOI IMPACT

By saving over 52 million gallons of water in 2018, IMT RIATA exemplifies how easily businesses can implement Banyan Water's technologies and expertise to make considerable impacts on operating budgets and natural resources.

With Banyan's help, RIATA was able to enroll in the City of Austin's Alternative Irrigation Compliance Pilot Program, allowing them more flexibility in watering schedules even during drought-related water restrictions. As that program has changed and developed, RIATA and Banyan Water have provided

regular feedback to Austin Water. Being an active partner and contributing regular feedback have not only helped RIATA to stay in compliance during times of drought but has also created a positive partnership between the three organizations.

Along with the financial and environmental benefits, Soto appreciates that Banyan Water's team takes its job to heart and makes her staff feel like they really care. "It's not just about the company or technology, but the people that work for Banyan, too. We trust them completely."

"I don't ever have to worry. Banyan Water does everything and keeps me informed of any repairs that need to be made, and I know that they will always have a solution for us."



## COMMUNITY IMPACT

The ongoing need for water conservation and recent legislation in Texas, such as the State Water Plan, continue to highlight the need for real water sustainability solutions. With Banyan's

technologies and services, RIATA is doing its part to conserve water every day. Their annual water savings are equivalent to the total water needs of over 350 households.

A wide-angle photograph of the Lincoln Centre office building in Dallas, Texas. The building is a large, modern structure with a glass facade that reflects the sky and surrounding environment. It consists of several interconnected rectangular volumes. The sky is a clear, bright blue. In the foreground, there are some green trees and a clear view of the building's base.

## LINCOLN CENTRE

**Banyan Water provides turn-key water savings to North Texas property.**

### THE SITUATION: RISING WATER COSTS & LACK OF VISIBILITY

Lincoln Centre is one of Dallas, Texas' premier office properties featuring a 32-acre, park-like landscape. Cushman & Wakefield, who manages the property, was faced with quickly rising water costs, which could have significantly increased their operating costs. What's more, Texas was facing an historic drought, causing the Cushman & Wakefield team to seek solutions that made their property not just more profitable, but also more sustainable.

Prior to working with Banyan Water, the Lincoln Centre team lacked water-use visibility and was unable to verify or forecast water bills. It was also challenging for them to gather the right data to make informed water-saving decisions.

Cushman & Wakefield partnered with Banyan Water and was immediately able to monitor, adjust, and optimize the environmental and financial impacts of water use in real time. Banyan Water's expert water managers constantly tracked and controlled water on the property ensuring that it was used efficiently. This combination of technology and active water management allowed the Cushman & Wakefield team to focus on other priorities while knowing that water use was being carefully managed.

**“Water savings and financial savings are the biggest benefits, and the landscape hasn't suffered at all.”**

### Property

- Located in Dallas, Texas
- Commercial property
- 108 tenants
- 32 acres
- LEED Silver O&M Certified
- BOMA 360 Designation
- Energy Star Certified

### Partnership Highlights

- Over 81.7 million gallons of water saved
- \$350,000 increase in net asset value
- 58% reduction in water use
- Environmental Leader's 2017 Project of the Year

## MEASURABLE RESULTS

In 2018, Banyan Water saved 10.6 million gallons of water at Lincoln Centre, which meant that Cushman & Wakefield was able to save \$25,543 from its operating budget. Though water rates in the region have increased by 16% since Banyan and Lincoln Centre partnered, the property has maintained consistently low water bills, positively impacting their NOI.

Banyan Water monitors water movement on the property in real-time so they have also detected and reported two to four major leaks each year, saving between 125,000 - 550,000 gallons of additional water per year.

When asked what the biggest benefits for Lincoln Centre have been, Scott Grissom, Chief Engineer for Cushman & Wakefield, said, "Water savings and financial savings are the biggest benefits, and the landscape hasn't suffered at all."

By delivering water management as a turnkey service, Banyan also frees up operational capacity for Cushman & Wakefield. Grissom has an expert water manager at Banyan who he can depend on to notify his team of any water-related risks or anomalies that need to be addressed.

"Banyan makes it easy for us to continue making a positive impact on our operations budget and on the surrounding community's natural resources"



## CONSERVATION, CONVENIENCE & SAVINGS

By using Banyan Water Central, Cushman & Wakefield is taking the lead in helping to protect precious water resources. As a premier property management company, Grissom says, "Cushman & Wakefield is always looking for ways to save money and increase property values and tenant satisfaction. Irrigation is one of the easiest ways to impact water usage without requiring the tenants to act. Banyan makes it easy for us

to continue making a positive impact on our operations budget and on the surrounding community's natural resources." Lincoln Centre has won several awards and certifications related to their work with Banyan Water. In 2017 Lincoln Centre and Banyan Water were awarded Environmental Leader's prestigious "Project of the Year" award for their achievements in water savings. Lincoln Center has also received a LEED Silver O&M Certification, a BOMA 360 Designation, and an Energy Star Certification.



## LIVCOR

National real estate asset management firm uses Banyan Water to increase net operating income across its portfolio.

### OVERVIEW

LivCor, LLC is a real estate asset management firm formed in 2013 as a portfolio company of Blackstone. As a hands-on asset manager of multifamily properties, LivCor looks to Banyan Water to deploy smart water management solutions that increase net operating income across its portfolio of properties while maintaining its beautiful landscapes.

### SMART WATER MANAGEMENT

With over one hundred Class A and B multifamily properties throughout the United States, LivCor closely manages its portfolio to maximize return for investors while offering best-in-class service to residents.

Since water has become the fastest rising utility cost in the United States, it has also become a potential expense liability. Without adequate oversight, water can easily become a significant and unpredictable operating expense.


“We’re always looking for ways to improve our properties and our bottom line,” says Ralph Pickett, President and CEO of LivCor. “Water efficiency is a great way to simultaneously add value for our investors and our residents, and Banyan’s solutions accomplish that and more.”

### Portfolio

- Industry: Real estate asset management
- Locations: Texas, Tennessee, California, Colorado, North Carolina, Washington, Kentucky, Oregon, Arizona
- Properties: 53
- Water Managed: 288 Million Kgals

### Highlights

- Over 147 million gallons of water saved in 2018
- Expected payback: ~1 year



“We quickly saw the value of expanding the Irrigation Insight solution to other properties throughout our portfolio.”

To date, Banyan Water has deployed its Smart Irrigation solution to forty-six of LivCor’s properties in Texas, California, North Carolina, Washington, Oregon, Arizona Tennessee, Kentucky and Colorado to reduce unnecessary

use of irrigation water. In addition to the savings realized by water use reductions, increases in net operating income and asset value support LivCor’s mission in those areas.

## BENEFITS

Instead of simply providing irrigation hardware, Banyan provides water management as a service to the LivCor portfolio. Through Banyan Water Central, a proprietary web platform, and on-the-ground monitoring and control hardware, Banyan has dramatically reduced irrigation water use by watering only when necessary and quickly pinpointing and resolving water-wasting system issues. Throughout the process, LivCor remains apprised with regular performance reports that provide full transparency. “Our relationship with Banyan began with just three sites, and we quickly saw the value of expanding the Irrigation Insight solution to other properties throughout

our portfolio to achieve significant and verified savings,” says Pickett. One of the challenges with owning multiple properties throughout the United States is maintaining consistency across properties and property management partners. By working with Banyan as a water expert and solution provider, LivCor has created a consistent water management strategy that stabilizes its water budget and allows for accurate budget forecasting. As LivCor adds properties to its portfolio, it can factor water conservation opportunities into its decision-making to more clearly understand investment opportunities.

## IMPACT

Banyan’s Irrigation Insight solution has provided benefits throughout the LivCor portfolio. Executive users are able to understand water-use across their portfolio and easily prioritize properties in need of water-saving improvements. The system has also saved over 147 million gallons of water in 2018, and demonstrated a strong return on investment.