

By Kayli Hanley

Between the rugged mountains in the north and the sand-swept beaches in the south, sits California's San Luis Coastal Unified School District. The district consists of 17 schools serving more than 7,500 students: two adult schools, three high schools, two junior high schools and 10 elementary schools.

With drought ravaging the California countryside in 2011, the district saw a need to re-evaluate the school's water usage.

Conserving water while being able to offer quality grounds for students are top priorities. In 2012, the Cachuma Resource Conservation District conducted an irrigation audit for the school district. The audit revealed great potential for additional savings, provided the correct system was installed to address their unique challenges. And so their search for a system to help them reach their goals began.

## Finding an irrigation champion

The school had three standards the new system needed to meet. It had to be easy to program, affordable and compatible with the district's existing Wi-Fi.

After much research, and with the help of a grant provided by the Cachuma Resource Conservation District, the school district found their champion. They partnered with Ewing Irrigation & Landscape Supply to help them upgrade to the Baseline Irrigation System.

By the summer of 2014, four of the 17 schools had been converted. It was at this time that Joe Carrera, current Irrigation Water Resource Specialist for the San Luis Coastal Unified School District, stepped on scene.

Although new to the jobsite, Carrera and irrigation systems were not strangers. He began working in the irrigation field at just 19 years old and had experience ranging from hands-on installation to owning his own irrigation company.

"I like to describe myself as an irrigation geek," Carrera said. "I love the science of irrigation."

Despite his vast knowledge of irrigation systems, Carrera had some reservations about being able to effectively manage 17 irrigation systems across 17 campuses.

"Being the only irrigation person, I spent a lot of my time being reactive to day-to-day maintenance when there were



so many proactive things I wanted to be doing to make the system more efficient," Carrera said.

He hoped to find a solution—fast.

## Implementing a water-efficient system

Carrera had never worked with Baseline before his job with the district, but the results he witnessed after all 17 schools had started the conversion (January of 2015) made his mouth drop.

When his facility director approached him to report the savings they were experiencing in just six months, Joe simply stated, "I don't believe it."

The water bill had been cut by more than one-third.

With positive change already in motion, Carrera started pushing for the district to expedite installing the remaining phases of the conversion for the other schools. The main products used included Baseline 1000 controllers, moisture sensors and nanobridges.

"The original plan was to convert all the play fields, football fields and large grass areas," Carrera said.

Things were going smooth. As they started installing systems on sports fields, however, they encountered a problem: some sports fields were located so far from the school that the Wi-Fi signal couldn't reach the controllers.

The school district found a solution in a piece of technology called a nanobridge, also known as a point-to-point link. A nanobridge provides a communication link between two systems. In Carrera's case, it amplified the Wi-Fi signal far enough for it to reach controllers on sports fields, far away from the Wi-Fi's original source.



The more Baseline controllers Carrera installed, the more he realized that the system wasn't just saving water and money—it was providing him the assistance he needed.

"The thing most people overlook is how efficient the system makes me in terms of labor," Carrera said. "By being able to operate the controllers from my iPad, it saves me a lot of time because I don't have to run back and forth to the controller to test things after a repair."

The system also sends him text messages when things like a solenoid go out so he knows exactly when and where the problem is happening.

"The Baseline system is kind of like my virtual assistant," he said.



## Successful Savings

The district's work to implement a more efficient water system is the kind of narrative you can call a success story despite only reaching the mid-way point in the book.

"Over the last two years, we've cut our water bill in half and kept things green, just by being more efficient with our water," Carrera said.

What does that kind of savings look like in gallons of water?  
**14,233,651 gallons in just two years.**

That amount of water would fill approximately 14-football field size pools at 10-feet deep each.

The system has helped the district go from using around 81 million gallons of water in 2012, to 43 million in 2017, (their fiscal year ends in July of each year).

Carrera emphasized the success he's experiencing would not be possible without the support of the school district and his contacts at Ewing.

"This wouldn't have been possible without the grounds department, our onsite plumber and my contacts at Ewing, Phil Chan and Levi Marks. The whole administration is dedicated to water savings and conservation," he said. "The school and Ewing's support has been incredible. This is a group effort."

The next step in the process is to implement Baseline hydrometers. Six are already up and running.

"The hydrometers will shut the mainline down if there is an unexpected flow," Carrera explained. "They can prevent thousands of dollars of water from going to waste if there's a leak."

## Endless work equals endless rewards

For Carrera, keeping up with the industry's ever-changing technology is a never-ending job that takes a lot of time and often-unnoticed effort.

"When I first took this job, I wasn't sure it would be the right fit," Carrera said. "Then one of the other grounds persons told me, 'Every job in this school district is all working toward getting these kids through 12 years of school. All of our jobs are important.'"

Those words stick with Carrera and motivate him to keep moving forward toward his goal of pristine school grounds ran by a water efficient system.

"We are only scratching the surface of what these controllers can do for us," he said. "Investing in the Baseline system is not only accomplishing saving water, it's saving money and labor for the school as well."

Watching the school grounds grow healthy and stay playable while knowing he's being efficient with water usage makes Carrera proud of what the school district is accomplishing.

"Working with irrigation systems may be a never-ending job, but it's a rewarding job," Carrera said. "It's a great career for me."