

# Case Study – Santa Fe College



Santa Fe College is located in Gainesville Florida and serves a little over 18,000 students per semester. Over the years, the College has been very progressive with their energy conservation efforts.

Recently, the college signed a sole source agreement with **Resource Efficiency Solutions, Inc. (RES)** to provide them with quick payback energy conservation technologies.

The College typically purchases the products from RES and installs them with their in-house operations staff. The following pages describe some of these energy conservation technologies.

## Parking Lot Lighting Induction Retrofit Kits

The College's parking lot lots originally used 390 watt pulse start metal halide lamps and ballasts. The existing fixtures were heat tested and a custom 200 watt induction retrofit kit was developed for the existing fixtures.

The induction fixture retrofit kits represent an **energy savings of 48%** when compared to the original metal halide system. Also, the induction lighting has a much higher Color Rendering Index (CRI) than the existing metal halide lighting and provides a whiter light with reduced glare, helping to improve security.

The following page summarizes the project in an article that was written in the College Newspaper by Erik Anderson, SFC Director of Operations.



## Parking Lot Lighting Induction Retrofit Kits



## News & Information

### New Parking Lot Lights Save Energy and Earn SFC a GRU Rebate

**Erik Anderson**, SFC Director, Facilities Operations, writes:

"Using funding from rebates of previous energy-saving projects, the Santa Fe Facilities staff hatched another energy-saving idea.

"While induction lighting is not a new technology in Europe, it is in the United States, so we set out to find a vendor who could retrofit our parking lot lights. The old lights were a total wattage of 390 per light. We found an induction light that requires 200 watts.

"We then ordered 117 retrofit fixture heads (that maxed out our rebate money) and our electricians **David Diefendorf**, Supervisor, **Jason Head**, Senior Electrician, **Seth Florio**, Journeyman Electrician, and **Chris Carey**, Electricians Helper, went about changing out the lighting.

"If you come here after dark you can tell which lights have been changed. The induction lighting is brighter and produces better color rendering, an important security feature (for example, it makes it easier for police to create accurate descriptions of vehicles).

"Facilities collected a \$21,750 rebate check from Gainesville Regional Utilities on July 29. We will continue to search for more ways to save energy and research newer technologies."

**Dan Clark**, GRU Key Accounts Representative, said GRU applauds SFC's accomplishments in the energy conservation realm.

"They use the projects to educate people, to lead the way in the community," Clark said. "No one else has done parking lot induction lighting in the community. It gives us the opportunity to educate other businesses in town, to bring them out here so they can see the lights. You're not just educating your students and staff, you're making it real for the community."

Representatives from **Indian River Community College**, **Manatee College**, **Polk Community College**, **South Florida Community College**, and **St. Johns River Community College** have looked to SFC to learn more about our energy conservation projects, Anderson said.

Induction lighting lasts for 100,000 hours, which is equivalent to 10 years, full-time. Since the parking lot lights are on at night until around midnight, the new lights should be good for 20 to 25 years.

"Think of what we're going to save on maintenance," said Diefendorf. "We'll most likely never have to touch them again.



**Induction Retrofit Kit**



## Memorial Flag Pole LED Lights

The College was illuminating their 110 ft tall Memorial Flag Pole with three 460 watt (with ballast) metal halide lamps. The lamps were replaced with three 38 watt LED fixtures for an **energy savings of 92%**.

Students have commented on how better illuminated the Memorial Flag is, making it much more visible from I-75.



## Sidewalk Pole Lights Induction Retrofits



The existing cube style walkway fixtures pictured to the left originally used a 100 watt metal halide system (120 watts with the ballast). ←

The metal halide system was retrofitted with a 23 watt screw in induction system resulting in an **energy savings of 80%**.

David Diefendorf, SFC Supervisor, remarked that the light provided by the induction retrofit looked “cleaner” than the old metal halide system.

The existing 175 watt (210 watts with ballast) walkway fixtures were replaced with new 85 watt induction fixtures.

The new fixtures represent an **energy savings of 60%**. Also, the induction lighting has a much higher Color Rendering Index (CRI) than the existing metal halide lighting and provides a whiter light with less glare, helping to improve security. →



## Racquetball Court Induction Retrofit Kits



The existing 400 watt (480 watt with ballast) metal halide fixtures were retrofitted with 200 watt induction retrofit kits. The retrofit has an **energy savings of 58%**. The photo to the left shows the induction retrofit next to the existing metal halide fixtures.

Since induction lighting turns on instantly, there is also the opportunity to save significantly more energy by turning off the lights when the courts are not in use. This was not possible with the metal halide lighting that had a 10-15 minute warm up time.

The induction lighting also provides a better environment for the racquetball players:

- ✓ Whiter/brighter light
- ✓ No ballast hum, flickering or noise
- ✓ Easier to see the ball



## Building Accent Lighting LED Retrofit

The existing 175 watt (210 watt with ballast) metal halide fixtures were retrofitted with 13 watt LED fixtures that are IP65 rated (weatherproof).

This retrofit has a resulting **energy savings of 93%** and solved a major problem of frequent metal halide lamp burnout whenever moisture/water made its way into the in-the-ground fixtures.

A typically fixture is pictured to the left with the LED retrofit installed. David Diefendorf, SFC Supervisor, remarked that even with the moisture buildup, the LED retrofit is putting out plenty of light without the failures the College was having with the metal halide system.



Other LED fixtures RES retrofitted for Santa Fe College were in the President's office. These included screw-in lamps, recessed cans in the ceiling, and the fan lamps.



## Energy Miser Controllers

The College installed Vending Misers® on their refrigerated vending machines. The Vending Misers® save the College about \$200 in electric costs per machine per year, or about 45% of the cost to operate the machines.

The Vending Misers® use an occupancy sensor to power down the machines when there is no one in the vicinity of the machine. An ambient temperature sensor that is built into the controllers will automatically power up the machines periodically to maintain the correct product temperature.



## New Induction Flood Lights



The existing 400 watt (480 watt with ballasts) metal halide fixtures were replaced with 100 watt induction flood lights on the College's Facilities Services, Building U.

This has a resulting **energy savings of 79%**. The College's operations staff commented that the new 100 watt induction flood lights are providing more light in the parking lot than they were getting from the 400 watt metal halide fixtures.



## New Induction Canopy Fixtures



Every two existing 175 watt mercury vapor recessed fixtures were replaced with one 40 watt induction canopy light.

The light spread of the new fixtures is so great that the college was able to remove two 175 watt poles from the court yard, seen below.

This yields an **energy saving of over 90%**. At the same time improving security and greatly reducing maintenance costs.

The walkways in-between the buildings had their 175 watt mercury vapor fixtures replaced with 80 watt induction canopy lamps with a deeper lens.

This is to compensate for the two story height of the walkway ceiling, as seen below.



## New Induction Half Moon Wall Packs



The 100 watt metal halide lamps around the stair well were replaced with twelve 40 watt half moon wall packs. This is an **energy savings of 60%** per fixture.

With low luminous decline these induction fixtures will last up to 100,000 hours, compared to the metal halide that have severe luminous decline resulting in only 12,000 hours life. The higher CRI creates a whiter, crisper light, giving students a safer passage on the stair wells at night.



## New Induction Wall Packs



The existing 175 watt (210 watt with ballasts) and 100 watt metal halide wall pack fixtures were replaced with 80 watt and 40 watt induction wall packs.

This retrofit has a resulting **energy savings of 62%**. The new induction fixtures have greatly increased visibility around the campus at night, improving security. Plus, with a 100,000 rated life, the induction lights will last **5 times longer than the metal halide lighting**, resulting in significant maintenance savings as well.

