

Proposal Details

G Hendrix \$281,700.00
 * Requested SGEF Funds (\$): \$281,700.00
 * Matching Funds (\$): \$0.00
 * Proposed Starting Date: 1/23/2017
 PI Graduation Date (if applicable): 12/16/2017

Section 2: Applicant Information

| | Full Name | Unit/Department | Phone | Email |
|--------------------------|-----------------------|-----------------------------------|------------------|----------------------|
| * Principal Investigator | Lauren Reilly | Global Sustainability | 727-420-07 | lreilly@mail.usf.edu |
| Investigator 1 | Jeffrey Lowe | Engineering | | jlowe2@mail.usf.edu |
| Investigator 2 | Rajeev Kamal | Engineering Science | | rajeev@usf.edu |
| Investigator 3 | Arun Kumar Narasimhan | Chemical & Biomedical Engineering | | arunkumar@usf.edu |
| Investigator 4 | Antonio Lourenco | Facilities Management | alourenc@usf.edu | 813-917-93 |

Section 3: Project Description

* Project background and purpose (reasons motivating request) (Max 500 words)

Currently, there are a variety of roadway and parking lot poles that are fiberglass, wood, aluminum, and concrete with either 250 watt or 400 watt high pressure sodium (HPS) fixtures, and under 100103 or 154-watt LED. The purpose of this proposal is to request funding to replace the 250/400-HPS fixtures to LED campus wide. Facilities Management will provide the aluminum poles where necessary such as, to replace fiberglass poles. Last semester, a Roadway and

Overall, with all 942 roadway and parking lot light fixtures converted to LED campus wide, the energy demand is reduced by 531,288 kWh, \$45,159 is saved every year, and about 319 metric tons of carbon never emits into the atmosphere bringing USF closer to our 2070 carbon neutral goal. This project directly satisfies the Carbon Commitment, previously known as the American College and University President's Climate Commitment which was signed in 2008, and beautifies the campus as all the illumination will be uniform campus-wide. An initial investigation to determine how many other universities in the state of Florida and countrywide where 100% roadway LED was started. Using phrases such as "100% LED University" and "Green University 100% LED" brought up examples such as university buildings or residence halls that were 100% LED, but did not mention roadway and parking lot lights on campus. With further research, it is possible that USF will gain national recognition for having all the roadway and parking lot lighting as 100% LED.

* Outcomes of the project (Max 250 words)

This project aims to reduce the energy consumption on campus by targeting energy efficient lighting. Utilizing LED lighting throughout the campus will reduce the lighting energy demand by about 40%. Thus, the project will enable the University to reduce GHG's along with its total electricity consumption. The upgrade of existing lighting to LED lights in the parking lot and roadway would result the following CO2 emissions reduction: 319 metric tons per year • Annual energy savings: 531,288 kWh • Annual energy cost savings: \$45,159 • Payback period: 10 years • Total fixtures to be changed: 942

| | |
|----------------------------------|-------------|
| * Annual Energy Savings | 531,288 kWh |
| Annual Cost Savings | \$58,441.68 |
| Return of Investment in % | 0.21 |
| Annual Green House Gas Reduction | 0.00 |

* Project Sustainability (Max 200 words)

Installation, Operation, and Maintenance will be carried out by Facilities Management.

Section 4: Workplan and Budget Details

* Detailed work plan/schedule of activities (Max 250 words)

- Develop specifications for labor and materials working with FM engineers and staff
- Issue and analyze bids
- Managing product inventory
- Create work schedules for contractor
- Inspect contractor's work
- Prepare interim status reports for SGEF
- Assist in troubleshooting issues through the project execution
- Prepare final project completion report for the stakeholders

* Budget breakdown

| Category | Request from SGEF | Applicant contribution | Total |
|---|---------------------|------------------------|---------------------|
| Personnel (include all involved) | \$0.00 | \$0.00 | \$0.00 |
| Equipment | \$0.00 | \$0.00 | \$0.00 |
| Supplies/Materials | \$219,100.00 | \$0.00 | \$219,100.00 |
| Contractual | \$0.00 | \$0.00 | \$0.00 |
| Construction | \$62,600.00 | \$0.00 | \$62,600.00 |
| Other (specify in budget justification) | \$0.00 | \$0.00 | \$0.00 |
| Total Project Cost | \$281,700.00 | \$0.00 | \$281,700.00 |

* Budget justification (Max 250 words)

As the survey of every light pole and fixture has already been completed by students during winter break 2016, the additional budget being requested \$281,700 is solely for 626 fixtures at \$450 each. SGEF has already funded \$152,200 previously for the conversion of 319 fixtures. With this data mapped out, the light conversions will be conducted by the electrical contractors.

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