

SGEF PROJECT PROPOSAL

ROADWAY & PARKING LOTS LED
LIGHTING PROJECT

Principal Investigators

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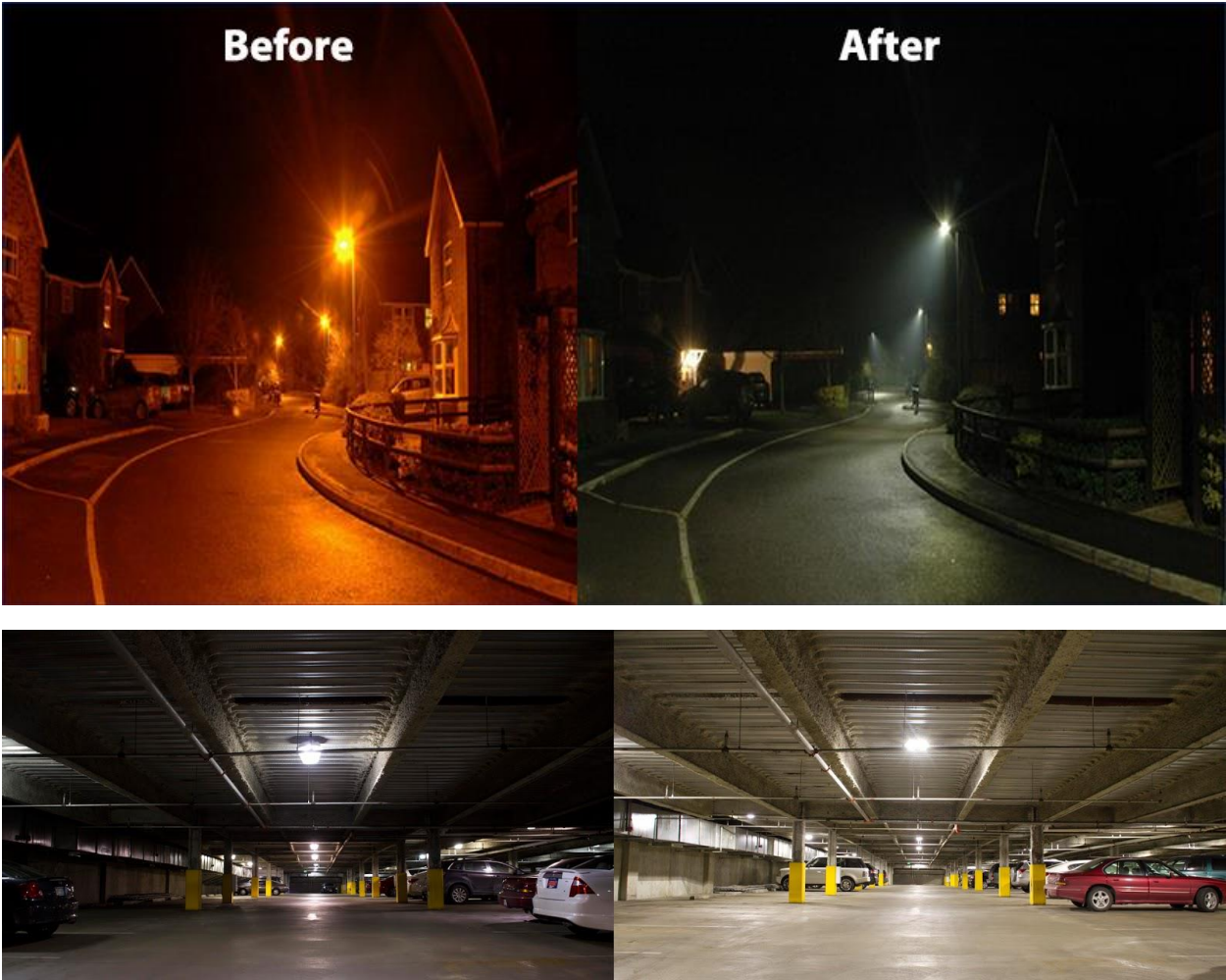
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Project Summary

The LED lighting conversion reduces the electricity consumption thereby resulting in reduced greenhouse gas emissions, carbon footprint and move towards campus wide sustainability. The proposed Roadway and Parking Lots LED lighting conversion project along with other SGEF initiatives together aid in meeting the GHG reduction goals set by the American College and University President’s Climate Commitment in 2008. The project proposes to convert 316 existing lights in roadway and parking lot to LED resulting in energy savings and energy cost savings of about 178,224 kWh and \$15,149 annually with a total budget of \$1,496,450. The conversion reduces CO₂ emissions by 107 metric tons (US Environmental Protection Agency, 2015) annually. The sustainability benefits of the project also improve the University’s score in STARS sustainability rating system. The funding request from SGEF is a total of \$152,200 that covers the LED fixtures and student engagement cost.



Project Costing

Student Engagement

In the first phase of this project, three students will be engaged to carry out the project along with USF Facilities Management (FM). The student activities include

- Develop specifications for labor and materials working with FM engineers and staff,
- Issue and analyze bids,
- Managing product inventory,
- Create work schedules for contractor work,
- 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.

Capital Investment

The total funding requested from SGEF is only for the fixtures and student engagement. All additional costs of the project will be borne by the Facilities Management.

Items	Cost
LED Fixture cost (A)	\$ 142,200.00
Lamp Pole Assembly W/O fixture cost (B)	\$ 1,354,250.00
Recycling cost	\$ 1580.00
Student engagement (C)	\$ 10,000.00
Total materials cost (A+B)	\$ 1,496,450.00
Funding request from SGEF (A+C)	\$ 152,200.00

Sustainability Benefits

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 in an annual energy savings of 178,224 kWh and reducing emissions by 107 metric tons of CO₂ annually.

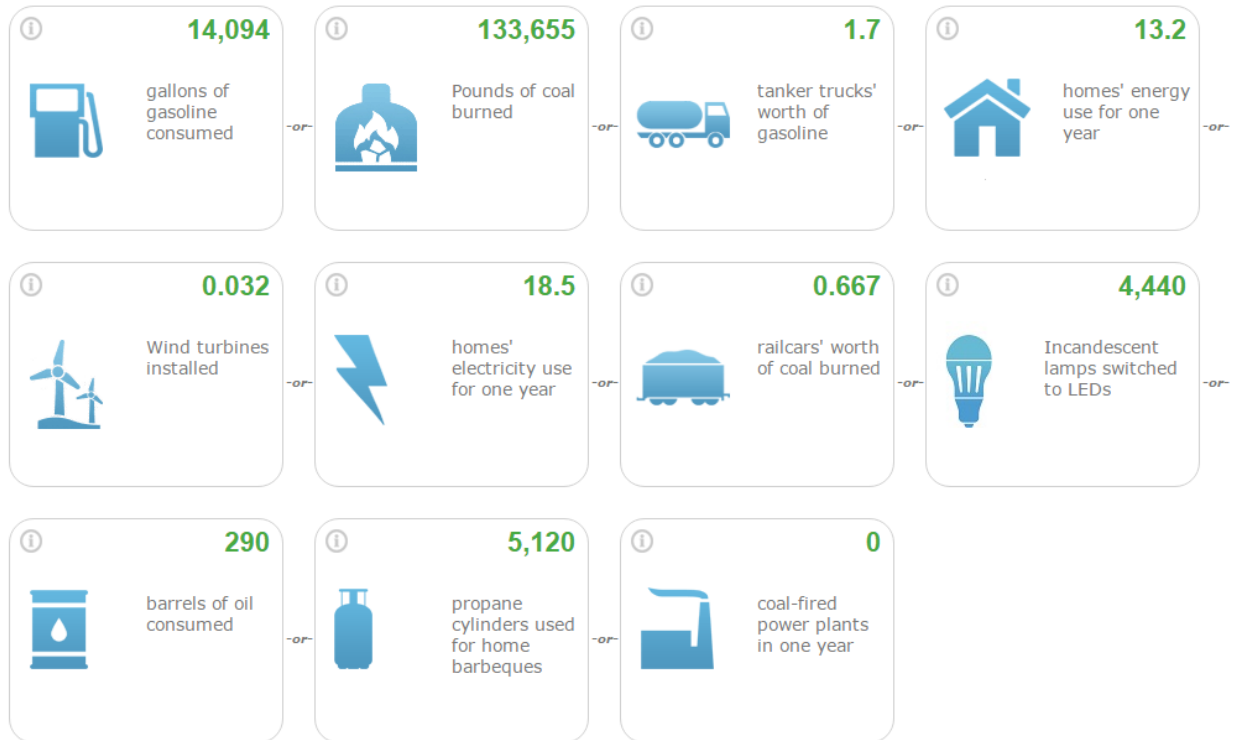
- CO₂ emissions reduction: 107 metric tons per year
- Annual energy savings: 178,224 kWh
- Annual energy cost savings: \$ 15,149

Roadway and Parking Lot LED lighting project

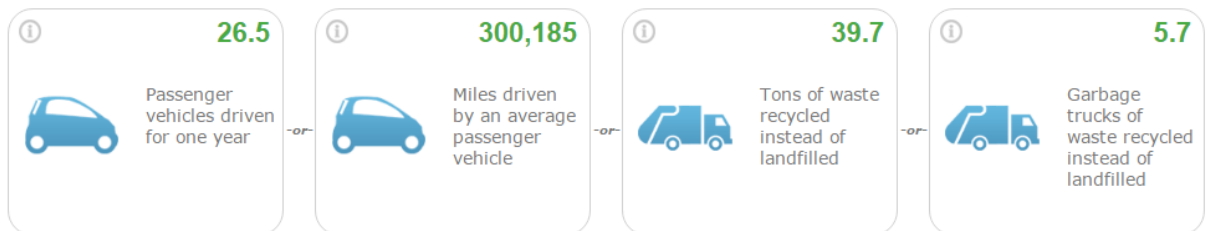
- Payback period: 10 years
- Total fixtures to be changed: 316 (250 on parking lots and 66 on roadways)
- Budget request from SGEF: \$ 152,200

Equivalent Benefits (US Environmental Protection Agency, 2016)

CO₂ emissions from



Greenhouse gas emissions from



Carbon sequestered by



Roadway and Parking Lot LED lighting project

Sustainability of the Project

Facilities Management and Parking & Transportation Services has agreed to maintain the LED lights on ongoing basis.

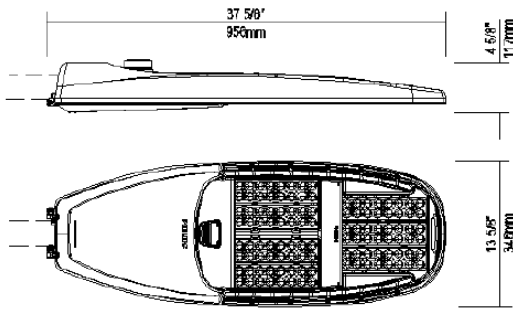
Bibliography

US Environmental Protection Agency, 2016. Greenhouse gas equivalencies calculator [WWW Document]. <https://www.epa.gov>. URL <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

US Environmental Protection Agency, 2015. eGRID 2012 GHG output emissions rate [WWW Document]. www.epa.gov. URL <https://www.epa.gov/energy/egrid> (accessed 9.14.16).

Annexure

Sample Fixture Head to be purchased for installation



EPA: 0.92 sq ft / weight: 27.3 lb (12.4 kg)
Note: 3D image may not represent color or option selected.
Logos above include link, click to access.

Qty	1	Luminaire	RFL-145W64LED4K-T-R3M-HVU-DMG-RCD-SP2-GY3
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