

Please submit this completed application, the supplemental budget spreadsheet, and any relevant supporting documentation by the deadline indicated in your Step 1 notification letter to Sustainability-Committee@illinois.edu. The Working Group Chairs will be in contact with you regarding any questions about the application. If you have any questions about the application process, please contact the SSC at Sustainability-Committee@illinois.edu.

General Information

Project Name: Higher Efficiency Lighting (LED) in Illini Union Rooms 104 and 222

Total Amount Requested from SSC: \$46,000.00

Project Topic Area(s): Energy Education Food & Waste
 Land Water Transportation

Contact Information

Project Lead

Applicant Name: Hannah Price
 Unit/Department: Illini Union Board
 Email Address: hlprice2@illinois.edu
 Phone Number: (309) 791-2640

Financial Contact *(Must be Full-time University of Illinois Staff Member)*

Contact Name: Julie Jervis
 Unit/Department: Illini Union
 Email Address: jjervis1@illinois.edu
 Phone Number: (217) 244-3201
 Organization Code: 301658389003 172370 389002

Facilities Management Contact *(If Applicable)*

Contact Name: Dave Guth
 Email Address: dcguth@illinois.edu

Primary Project Team

Name	Department	Email
Hannah Price	Illini Union Board	hlprice2@illinois.edu
Laurence Uphoff	Illini Union	luphoff@illinois.edu
Dave Guth	Illini Union	dcguth@illinois.edu
Julie Jervis	Illini Union	jjervis1@illinois.edu

Project Description

Please provide a brief background of the project, the goals, and the desired outcomes:

The Illini Union currently has two rooms that are using very outdated lighting fixtures. Rooms 104 and 222 of the Illini Union are utilized extensively throughout the day. Both rooms maintain a high level of foot traffic and visibility within the building. An assessment team concluded that transitioning the old lighting fixtures to LED would have a overwhelmingly positive impact on energy consumption and unnecessary waste. The overarching goal of this project is to promote and exude sustainability from within the Illini Union. The smaller scope of this project is to reduce carbon emissions and save energy by utilizing LED lighting fixtures within rooms 104 and 222 in the Illini Union.

How will the project improve the sustainability of the Illinois campus and how will the project go above and beyond campus standards?

Following an assessment of the light fixtures it was found that there would be a dramatic reduction in CO₂ and unnecessary energy consumption by switching to LED lights. 40,488 kWh's a year would be saved by making the transition to LED light fixtures. As well as, 66,431 pounds of CO₂ reduced-equal to the energy of 3.3 homes annually. The transition from outdated light fixtures would allow the Illini Union to conserve energy and work towards reducing the carbon footprint of the campus.

Where will the project be located? Will special permissions be required to enact the project on this site? If so, please explain and submit any relevant letters of support with the application.

The project will be located within Illini Union rooms 104 and 222. This proposal has been compiled through the combined efforts of the Illini Union Board and the Illini Union Senior Leadership Team. The project has been approved for both locations within the Illini Union. Special permissions are not needed due to the location and scope of the project.

Other than the project team, who will have a stake in the project? Please list other individuals, groups, or departments affiliated directly or indirectly by the project. This includes any entity providing funding (immediate, future, ongoing, matching, in-kind, etc.) and any entities that will be benefitting from this project. Please attach letters of commitment or support at the end of the application.

In addition to the project team, the Illini Union Board and Illini Union staff hold stake in this project. The IU Board is comprised of 12 undergraduate student leaders and over 100 student committee members. Room 222 serves as a meeting space for all sectors of the organization. By taking accountability for the environmental impact of the facilities utilized by the IU Board every member has a stake in the implementation

of this project. The Illini Union staff holds a similar interest in this project. Both rooms 104 and 222 have been identified as excellent locations for potential LED upgrades. The Union Staff are responsible for the efficient management of a highly visible campus landmark. Through this project they are able to dramatically decrease unnecessary waste while cutting energy costs for the building.

Please indicate how this project will involve or impact students. What role will students play in the project?

The IU Board serves as a student led advisory board for the Illini Union. Students would be directly impacted by the work of this project. The organization actively uses room 222 as an office space and often work long hours outside of the regular work day. Additionally, the Illini Union room 104 will serve as a dining hall while the ISR dining hall renovations take place. The presence of a dining facility within the Union will increase daily foot traffic a great deal. This will dramatically increase the usage of space and, if left unchanged, the usage of wasteful light fixtures.

Financial Information

In addition to the below questions, please submit the supplemental budget spreadsheet available on the Student Sustainability Committee website. Submission of both documents by the submission deadline is required for consideration of your project.

Have you applied for funding from SSC before? If so, for what project?

I have not previously applied for funding through SSC prior to this application cycle.

If this project is implemented, will there be any ongoing funding required? What is the strategy for supporting the project in order to cover replacement, operation, or renewal costs?

There will not be any additional funding required following the completion of the initial implementation. The only aspect of this project that has a continual cost is the need for replacement LED bulbs. The cost of replacement bulbs or, if necessary, lamps will be covered by the Illini Union. Routine maintenance of lighting fixtures and bulbs are covered by budgetary allocations within the Illini Union budget. In addition the payback in years for the project as addressed by Facilities and Services is 15 years.

Please include any other sources of funding that have been obtained or applied for. Please attach any relevant letters of support as needed in a separate document.

No additional sources of funding have been obtained or applied for at this time.

Environmental, Economic, and Awareness Impacts

In addition to the below questions, please indicate specific measurable impacts as applicable on the supplemental budget spreadsheet.

Which aspects of sustainability does your project address, and how? Does the project fit within any of the iCAP goals? If so, how does the project go beyond the university status quo standards and policies.

This project addresses the iCAP goal of reducing carbon emissions and improved energy conservation and building standards. iCAP identified LED lighting as a “promising potential strategy” in campus reduction of energy usage and carbon emissions. This project exceeds the university status quo standards by implementing the project in a highly utilized area of campus.

How will the environmental impacts of your project be measured in the near and long term? What specific monitoring and evaluation processes will you be using to track outcomes and progress?

Carbon emission reduction and energy consumption are both noted by building usage. The actual usage will be reported in the assessment of building operations. Following the implementation of the project data will be collected and assessed by the Facilities and Service department and Illini Union Staff. All information will be relayed to SSC if desired.

What is the plan for publicizing the project on campus? In addition to SSC, where will information about this project be reported?

The Illini Union Board in the unique opportunity to reach thousands of students, staff, and alumni through campus programming and an impressive social media presence. The IU Board also serves as an advisory board for many campus entities, such as, the Illini Union Bookstore, Document Services, and all vendors within the Illini Union. This project would be documented and presented at various meetings throughout the year. Additionally, the IU Board would be willing to create marketing materials specifically for student visibility across campus. This would include signage around the Union and in rooms 104 and 222. The marketing would also be distributed in IU Board newsletter and through the various social media outlets. If the SSC so chooses, we would be willing to set up additional outreach projects for the LED transition project.

What are your specific, measurable outreach goals? How will these be measured?

The IU Board would like the information regarding the proposed sustainability project to reach over 2,000 individuals across our social media platforms. This would be focused primarily on Facebook, Twitter, and Instagram. Views, shares, and impressions would be evaluated to determine the extent of outreach through social media activity.

Do you have any additional comments or relevant information to aid in evaluation of this application?

All supporting documents used for the compilation of this proposal have been attached. If there are questions regarding this proposal please do not hesitate to contact any member of the project team.

General lighting upgrade savings	watts/lamp		lamp watt reduction/ Kw's	Fixture Quantity	Energy Saved	Energy per year reduced (kwh's)	Yearly \$ saved
	Original lamp	New lamp					
Mercury vapor to LED	1250	350	0.900	1	0.9	3912	\$ 309.36
Metal Halide to LED	455	150	0.305	1	0.305	1425.5	\$ 111.54
Metal Halide to LED	455	230	0.225	1	0.225	985.5	\$ 77.07
Metal Halide to LED	455	160	0.295	1	0.295	1292.1	\$ 101.04
Metal Halide to LED	232	80	0.152	1	0.152	665.76	\$ 52.06
Metal Halide to LED	295	160	0.135	1	0.135	591.3	\$ 46.24
Metal Halide to LED	295	80	0.215	1	0.215	941.7	\$ 73.64
T12 to T8 1 lamp	41	14.0	0.010	1	0.0104	71.032	\$ 5.62
T12 to T8 2 lamp	87	49.3	0.038	1	0.0377	165.126	\$ 12.91
T12 to T8 3 lamp	141	72.4	0.069	1	0.0686	300.468	\$ 23.50
T12 to T8 4 lamp	172	94	0.078	1	0.078	341.64	\$ 26.72
T8 to LED 1 lamp	24.6	18	0.007	1	0.0066	28.008	\$ 2.26
T8 to LED 2 lamp	49.3	36	0.013	1	0.0133	58.254	\$ 4.56
T8 to LED 3 lamp	72.4	54	0.018	1	0.0184	80.502	\$ 6.30
T8 to LED 4 lamp	94	72	0.022	1	0.022	96.36	\$ 7.54
incandescent to LED	300	95	0.205	1	0.205	897.0	\$ 70.22
incandescent to LED	150	16	0.134	1	0.134	586.92	\$ 46.90
incandescent to LED	105	45	0.060	1	0.06	267.8	\$ 20.95
incandescent to LED	100	16	0.084	1	0.084	367.92	\$ 28.77
incandescent to LED	85	15	0.070	1	0.070	315.96	\$ 24.66
incandescent to LED	75	12	0.063	1	0.063	273.94	\$ 21.58
incandescent to LED	65	10	0.055	1	0.055	240.9	\$ 18.84
incandescent to LED	25	4.5	0.021	1	0.0205	89.79	\$ 7.02
CFL to LED	45	15	0.030	1	0.03	127.6	\$ 9.95
CFL to LED	35	18	0.017	1	0.017	74.40	\$ 5.82
CFL to LED	23	10	0.013	1	0.013	56.94	\$ 4.45
CFL to LED	18	8	0.010	1	0.01	43.8	\$ 3.43
CFL to LED	13	6	0.007	1	0.007	30.66	\$ 2.40
Totals					3.2685	14816.03	\$ 1,110.51
				Project Cost			
CO2 reduced	5364	pounds		Payback in years	0		
Assuming lights operate an average of 12hrs/day							

Fig. 1: Table provided by F&S to determine CO2 reduction, kWh reduction, and cost reduction yearly.

Elimination Room 104 & 222				
watts/lamp	lamp watt reduction/		Fixture Quantity	Energy per year reduced (kwh's)
	Original lamp	New lamp		
Watts in 104	1250	172	1.078	7
Watts in 222	455	170	0.285	7
Total kwh's				4040.72
			Project Cost	\$ 35,000.00
			Totals \$	\$ 3,166.22
			Payback in years	17.100471
Assuming lights operate an average of 12 hrs/day				

Fig. 2: Relevant figures for room 104 and 222. NOTE: The original project cost was reduced to \$46,000.00 after labor and material costs were confirmed. Payback was also reduced to 15 years to reflect this change.