STUDENT SUSTAINABILITY COMMITTEE

Funding Application – Step 2

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: Food Processing Plant – Hand Wash Sink Replacement
Total Amount Requested from SSC: $10,450
Project Topic Area(s): ☐Energy ☐Education ☐Food & Waste ☐Land ☒Water ☐Transportation

Contact Information

Project Lead

Applicant Name: Brian Jacobson
Unit/Department: Food Science & Human Nutrition
Email Address: bjacobs3@illinois.edu
Phone Number: (217) 300-5404

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

Contact Name: Janice Trudell
Unit/Department: Food Science & Human Nutrition (FSHN)
Email Address: jmhall@illinois.edu
Phone Number: (217) 265-0378
Organization Code: 698010

Facilities Management Contact *(If Applicable)*

Contact Name: Brian Jacobson
Email Address: bjacobs3@illinois.edu

Primary Project Team

Name	Department	Email
Patrick Reynertson	Agricultural Engineering	Email Address
Youngsoo Lee	FSHN	Email Address
Jedi Brown	FSHN/UIUC Dining Services	Email Address
Name	Department/Organization	Email Address

Project Description

Please provide a brief background of the project, the goals, and the desired outcomes:
The Food Science & Human Nutrition Pilot Processing Plant (FSHN-PPP) is the home of the Illinois Sustainable Food Project (ISFP), along with several classes, tours, and other student activities. A processing facility uses water in many ways, and we constantly look to improve on our utility usage/waste. One area of significant water usage is the handsinks.

Typically, a handsink is not thought of as a large use of water, but in a food production facility that requires near constant washing of hands, it quickly adds up. Employees must wash hands every time they enter or leave the facility, after touching any exposed skin, when switching tasks, after moving product, after working on equipment or making changes, etc. Studies show each employee typically washes their hands 16 times per 8 hour shift in a food production facility. Each handsink consumes roughly 3 gallons of water per every 60 seconds it is on. A proper handwash takes 40 seconds, so roughly 2 gallons per handwash, along with inaccurante amounts of soap, and typically overuse of paper towels for drying.

We are proposing to replace our handsink with an automated system that completely washes hands in 12 seconds, using 0.6 gallons of water per wash. This will greatly reduce water usage, while reducing soap waste, and improving productivity. A study of facilities using these automated systems show a savings of 5,824 gallons of water per employee per year, with an uncalculated savings of soap and productivity. The FSHN-PPP employs 2 FT staff, 4-6 PT student staff, 6-10 grad student users for research, over 100 students in classes that meet several days a week, and hundreds of visitors each year. It is difficult to calculate total time spent by all the different groups, but is quickly apparent that there is the potential to save well into the tens of thousands of gallons of water, if not higher.

The funds will be used to purchase the automated system and install it in lieu of the handsink, along with some signage indicating the savings provided by this unique system. In addition, it will be discussed during every orientation, tour, or open house in the facility. Below is also an option to include a “Water Saved Display” to showcase the amout of water saved during the life of this upgraded hand wash option.

How will the project improve the sustainability of the Illinois campus and how will the project go above and beyond campus standards?
The project will not only save water, but educate students working in a laboratory about the importance of water conservation in a processing facility, whether it be food or other. Details about the education component are below, but water usage is a constant struggle in large processing facilities of all types, and efforts to reduce are constant in industry.

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 equipment for the project will be located and utilized in the FSHN Pilot Plant in the Agricultural Engineering Sciences Building. This space is managed by Brian Jacobson, so no special permission is required.

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.

The primary stakeholder in this project is the FSHN department, along with other departments in the College of ACES that host classes in the space.

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

This project was envisioned by student employees of the FSHN-PPP, many of which work on the ISFP. The water wasted in the traditional hand sink, along with productivity delays caused by the long wash time caused concern among those working on the project. They asked that a solution be found so all future student employees, classes, and tours have the opportunity to have an innovative hand-washing sink in a facility that puts so much focus on sustainability and local food production.

Patrick Reynertson (senior in ABE) will be in charge of the specification, install, and setup of the sink, under the guidance of Brian Jacobson. He will work with the manufacturer, and provide data on how the sink saves water, increases efficiency, and maintains effectiveness.

This data will be condensed into a poster placed above the sink providing instructions for use, data on how and how much water is saved, and SSC's funding involvement. The students, researchers, and visitors entering the facility will see this sign every time they wash their hands in the facility!

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?
Yes, the ISFP series of projects

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?

Please note that SSC provides funding on a case by case basis annually and should not be considered as an ongoing source of funding.
No ongoing funding is required, the FSHN department will cover costs related to soap supplies, maintenance, etc.

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.
N/A

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.

The project assists in meeting the water conservation goal. As mentioned previously, water usage is a major concern in processing facilities across many industries, so the education provided will be very valuable as students move into their future careers.

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?

The manufacturer does not include a monitoring system for this unit, but it would be possible to design and build a small display that would count the number of handwashes since the installation of the machine, and approximate the number of gallons of water saved. This could be displayed by the poster as an extra innovative educational component.

To do this, I would bring on an engineering student who would complete this project as an independent study for course credit. I have done this for many different projects in the past with great success. Hardware costs would be $750. If this was desired, I will implement along with the hand wash system.

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

Info on this project will be advertised with the ISFP projects that already have their own system, along with other efforts by the Pilot Plant and FSHN department.

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

Our goal is to educate every individual who enters our facility, and since using the machine is a hard requirement for entry, it will be an easy one to hit.

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

Due to the code and facility requirements of this project, it is submitted under Brian Jacobson's name, but all design and work will be completed by Patrick Reynertson, a student employee in the FSHN-PPP studying Agricultural Engineering. In addition, Jedi Brown, ISFP coordinator will oversee the sustainability messaging is provided to users of the facility.