



GREEN FUND

Sustainability Through Student Innovation

Project Application

Green Fund Mission Statement: “The NAU Green Fund promotes student participation in and provides funding for projects that reduce NAU’s negative impact on the environment and create a culture of sustainability on-campus.”

Requirements for Funding:

- The project must be implemented on campus.
- The person submitting the project must be a NAU student, faculty, or staff member.
- Projects must provide all necessary documents, letters of support, and authorizations prior to submission.
- The Green Fund distributes funding on a **reimbursement basis**. Project teams should partner with an administrative office to provide upfront funding for the project. Once the project has been successfully completed, the Green Fund will reimburse the administrative partner.
- All project applications should be submitted to greenfund@nau.edu for review.

Disclaimer: All applications will go through a comprehensive vetting process. We highly recommend meeting with a Green Fund Committee member prior to submitting the application. The Green Fund Committee member will assist you with every step of writing your project application. If your project is approved, you may be asked to provide more detailed information regarding specific deliverables. The Green Fund is not responsible for acquiring the necessary permits, permissions, or approvals for a project, although we are happy to assist with this process if needed. Additionally, the Green Fund does not provide any ongoing maintenance costs. A sponsoring department must take responsibility for operations and management.

Review Process: Upon project application submission, the Green Fund will review your project within two weeks. At this time, the Green Fund will provide comments on the project. Incomplete applications will not be reviewed until all components are submitted. **Note:** The Green Fund Committee only meets during the academic year. All projects submitted outside of the regular academic year will be reviewed at the start of the next academic session.

Contact Information

Project Leader Name: Yazhmin Dozal Phone: (928)271-9627 E-mail: yad3@nau.edu

Project Leader Name: Alanna Goodell Phone: (928) 460-3122 E-mail: arg494@nau.edu

Project Advisor Name: Ralph Padilla Phone: _____ E-mail: ralph.padilla@nau.edu

Sponsoring Department: Facility Services_____

Project name: CalSense Expansion

NAU Department/Unit for funding reimbursements (Attach letter of commitment from departmental representative): N/A- Direct funding from Green Fund, not a reimbursement based project_____

Project Overview

Executive Summary

Please provide a brief overview of your proposal. Please address how this project will support the goals of the Green Fund (student involvement, creating a culture of sustainability, and lessening NAU's impact):

We are looking to increase the number of Calsense sensors on campus. Currently, there are a few across campus, but there is definitely room for expansion. These sensors will measure the water moisture and turn on or off depending on the need for it. This will help water NAU lawns without wasting any rousing excessive amounts of water.

Please answer the following questions detailing the components of your project:

1. Does your project require space or construction on campus? If so, where? Please review the "Space Committee Document" located on our webpage and follow the steps to begin requesting a location.

Yes, we would like to set up new calsense moisture sensors by Eastburn Education, the recital hall, and the ARD building.

2. Have you obtained all necessary approvals for this project? Please attach all letters of support to this application. Letters of support should include confirmation from the sponsoring department that the sponsoring department will cover all upfront expenses and work with the Green Fund Business Manager to acquire reimbursement after project completion. If any ongoing operations and maintenance is required of your project, provide a letter of support from the entity that will be covering those costs and/or services.

Yes, we gained a letter of support from Ralph Padilla.

3. Will this project provide funding for student wages?

No.

4. Please list all additional sources of funding you have pursued. Include departments, grants, ASNAU, Graduate Student Government, etc.

None.

5. Have any of the Green Fund Committee members been involved in this project?

- a. If Yes, please identify all committee members: Joseph Thomas, Alanna Goodell, Yazhmin Dozal

Project Specifics

Please address the following questions. One or more of these questions may not apply to your particular application. Answer as many questions as are applicable to your project.

Relationship to NAU Climate Action Plan (CAP)

1. How does your project align with one of the seven CAP categories (Energy, Water, Transportation, Waste Minimization, Sustainable Landscaping, Environmental Justice, Communication)?

This project aligns with the Water category of the CAP. It conserves water usage throughout campus by monitoring the flow of the sprinkler systems. NAU is going to continue to have grass and other water intensive greenery on campus; however, NAU doesn't need to be frivolous with watering said plants. In addition, the City of Flagstaff has agreed to match the costs up to \$10,000 relating to water conservation, which would fit this project perfectly.

Community

2. Is there a public outreach plan? How will faculty, staff, and students learn about this?

Students, faculty, and staff are able to find information on the Green Fund previous project's interactive map on the Green Fund website. In addition, the Green Fund is hosting a monthly award to the best project in that said month that they will promote. They also have an annual best project award, which may be harder to attain, but being considered will still make more people aware of our project.

3. Are you working with other groups on or off campus? If so, describe your partnership.

Yes, we have been in contact with a few members of Facility services to get information on pricing of new Calsense moisture monitoring systems and location of previous Calsense systems already established on campus.

Project Parameters

4. What are the environmental costs and benefits associated with your project?

The primary environmental costs are associated with the production of and energy use from each of the CalSense sensors, which is considered to be minimal and difficult to calculate. The benefits are extensive. Water savings will be high, grass will not become waterlogged requiring additional maintenance and cost, and utility costs will be reduced.

5. Provide an economic cost/benefit analysis for your project. Focus on identifying specific cost savings.

For the University Hub, ARD building, and Recital hall the total estimated costs are \$13,412.76. This will upgrade the existing Calsense hub to a new CS3000 hub with stainless steel wall mount enclosure, along with wireless communication, and transient protection along with field-replaceable modules. The estimated cost for Eastburn is \$66,679.09. This installation will replace existing irrigation valve boxes that are broken and will re-level existing boxes that are not broken, as well as replace all rotors with Hunter I-20's. A new Calsense

controller would be installed with a new master valve and flow sensor. New controller wire for existing valves will be added along with spray heads in smaller areas. In addition, there would be a need to replace sod in disturbed areas where the wires and valves were placed or replaced. This is a sound investment, especially for a large institution like Northern Arizona University. On average a Calsense water monitoring system can save an institution about 20-40% of water usage annually and the Calsense systems have an average lifespan of 10 years. In 2016, Northern Arizona University used 190,142,191 gallons of water annually. By saving the minimum of 20% of the 2016 usage, the university would be saving over 35 million gallons of water annually. With the average cost of \$5.67 per 1,000 gallons of water for reclaimed water and on the low end of 20% savings, it would save the university about \$21,500 annually.

6. Is this a one-time expense or will you require future funding?

Once installed, this project will be a one-time expense with minimal maintenance from facility services.

7. When your project members no longer attend NAU, who will be responsible for running the project?

All installation and maintenance will be incorporated into the existing CalSense program in Facility Services. There is no future responsibility for project members.

8. How will you monitor the impact of your project after implementation?

The current CalSense software program allows for monitoring of sprinkler usage. Data from this program can be incorporated into the Green Fund Annual Report and compiled by the Green Fund Data Analyst.

Project Budget

Please include a thorough breakdown of all project costs, as well as a 5% line item for contingency.

Example:

NAU Soil Moisture Sensor Project			
Item	Price	Quantity	Total
ARB and Recital Hall			
CS3-HUB-WM UPGRADE	\$1,315.00	1	\$1,315.00
TP-110	\$205.00	2	\$410.00
CS3-LR-KIT	\$1,975.00	2	\$3,950.00
CS3-24-WM	\$3,305.00	2	\$6,610.00
Estimated Tax			\$1,127.76
Eastburn			
Installation of Calsense controller with new master valve and flow sensor. Installation of all new controller wire for existing valves. Replace existing irrigation valve boxes that are broken, re-level existing boxes that are not broken. Install spray heads in smaller areas, reconfigure lateral lines for these spray heads (as necessary). Replace all rotors with Hunter I-20's (cost includes up to 400' of lateral line reconfiguration)	\$53,366.51		\$53,366.51
Repair of sod damaged due to trenching/irrigation activities	\$11,560.44		\$11,560.44
Estimated Tax			\$1,752.14
5% Contingency			\$4,005
Total Cost			\$84,096.85

Project Timeline

The timeline should include significant implementation dates for your project. Please add information such as shipping time and consider any holidays or breaks.

CalSense System Upgrade		
Action	Parties Involved	Month/Year
Submit Green Fund Proposal	Project Leader, Green Fund Committee Member	April 2021
Purchase CalSense additional equipment	Facility Services Lead	May 2021
CalSense equipment installation	Facility Services	July/ August 2021

Project Checklist

Please ensure you have completed all of the following items before submitting your application:

- Meet with a Green Fund Committee member
- Obtain all necessary letters of support (sponsoring department, ongoing maintenance, etc.)
- Project Overview
 - Project Specifics
 - Project Budget
 - Project Timeline
 - Complete Project Checklist

Thank you for your submission. We deeply appreciate your commitment to sustainability at NAU, and we look forward to working with you.