



# 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](mailto: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: Dylan Turner Phone: 928-523-7468 E-mail: [Dylan.Turner@nau.edu](mailto:Dylan.Turner@nau.edu)

Expected Graduation Date: N/A

Project Advisor Name: \_\_\_\_\_ Phone: \_\_\_\_\_ E-mail:

\_\_\_\_\_ Sponsoring Department: University Printing Services

Project name: Hybrid Flatbed Printer

NAU Department/Unit for funding reimbursements (Attach letter of commitment from departmental representative): University Printing Services

## 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 seeking to purchase and implement an environmentally sustainable direct to substrate hybrid flatbed printing device. This device would enhance our current printing and finishing processes, providing significant economic and environmentally sustainable solutions for producing rigid signage for current departments and customers on and off campus. A demonstration video on the device can be found at the following link:

<https://www.youtube.com/watch?v=jN84EiRZ8Mw>

### 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.

We met with Facility Services on 12/20/22 for a walkthrough. We will optimize our existing production space to accommodate this device with minimal construction required. Figure 1 illustrates the location for the device. Some basic space modifications will be required to ensure proper climate control and electrical. See Figure 2 for the Facility Services estimate provided for the project.



## Figure 2 – Facility Services Estimate

RE: New Project: 09.570.232 Printing Services Lobby Renovation

1/23/23, 7:21 AM

### RE: New Project: 09.570.232 Printing Services Lobby Renovation



Gabriel Jesus Gurrola

Fri 1/20, 2:56 PM

Dylan Patrick Turner ✕

↻ Reply all | ▾

Inbox

Flag for follow up. Start by Friday, January 20, 2023. Due by Friday, January 20, 2023.

Apologies for missing your email earlier this week. Our current estimate is \$25k which includes contingency in case something changes and the project buys the equipment from Smart Fog. We could cut costs if you can procure the mobile unit instead of the built-in system.

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**From:** Dylan Patrick Turner <Dylan.Turner@nau.edu>  
**Sent:** Friday, January 20, 2023 9:42 AM  
**To:** Gabriel Jesus Gurrola <Gabriel.Gurrola@nau.edu>  
**Subject:** Re: New Project: 09.570.232 Printing Services Lobby Renovation

Hi Gabe,

checking in again - do you have a status update on this? I really really need to get this grant proposal submitted.

Dylan Turner  
Manager - Printing Services  
928-523-7468  
[Dylan.Turner@nau.edu](mailto:Dylan.Turner@nau.edu)

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**From:** Dylan Patrick Turner  
**Sent:** Wednesday, January 18, 2023 7:15 AM

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.

Please see attached proposal and letter of approval from our Senior VP, Christy Farley. We are seeking to obtain grant fund reimbursement for \$65,000 which will subsidize the capital equipment purchase of the device. The purchase will be funded using Printing Services local budget. Ongoing maintenance contracts and consumable costs will be funded by Printing Services' local budget.

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Wednesday, January 18, 2023 at 07:04:49 Mountain Standard Time

**Subject:** Re: Capital Equipment Purchase Approval - EFI 16H Hybrid Flatbed Printer  
**Date:** Tuesday, January 17, 2023 at 7:57:14 PM Mountain Standard Time  
**From:** Christy Farley  
**To:** Dylan Patrick Turner  
**CC:** Rensu Yang, Ann Marie P deWees, Harlan Teller, Renee E Miller  
**Attachments:** image001.png

Thank you for this forward-thinking recommendation and thoughtful outline Dylan. I support advancing this proposal to the next step of review with Bjorn and Megan with the financial investments from the surplus and requested a green Fund grant.

Christy

Sent from my iPhone

On Jan 13, 2023, at 7:28 AM, Dylan Patrick Turner <Dylan.Turner@nau.edu> wrote:

Good morning Christy,

Printing Services is seeking your approval to proceed with the purchase of a new piece of capital printing equipment – deck attached highlighting the key benefits of this device and budget. This printing device will improve our service to campus, align with the university's goal of Sustainable Stewardship of Resources, add student employment opportunities by insourcing currently outsourced print jobs, and lower consumable and operating costs in our large format printing department. A few key developments I'd like to point out:

- We are currently paying back a university capital equipment "loan" for a different capital purchase last year and are anticipating a surplus in our budget at the end of FY23.
- I am applying for a Green Fund Grant and seeking a \$65,000 grant reimbursement. I've already been in conversations with the Green Fund representatives and they're very excited and engaged with this project. I can provide you the draft proposal at your request.
- We are currently working with Kevin Johnson at Comptroller to evaluate FY24 rate changes in key areas and potential campus impact.
- With your approval, Kevin and our team will be reviewing this purchase with Bjorn and Megan in the budget office. We will be reviewing the options to secure the funding for the project and the best way to organize the funding sources.

We are very excited to build on the momentum in our large format department and continue to provide exceptional products and service to our campus stakeholders and intergovernmental customers. I'm seeking your approval in writing so I can finalize and submit the Green Fund Grant proposal and continue into conversations with the Budget Office. If you'd like to dive in deeper on any of the specifics, I'd be happy to meet to discuss.

Thank you very much for your consideration.

Dylan Turner  
Assistant Director

3. Will this project provide funding for student wages?

Printing Services is categorized by the University as a Recharge Center which operates only with a local budget. We charge back for our services to support our operation. With the additional square footage insourced from our current outsourced vendors, we will need to hire additional student employees to help process the jobs. These jobs will be charged back to departments which will generate the revenue to pay for these additional positions.

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

This project will be funded by Printing Services local budget and we seek grant funds reimbursement for \$65,000. The capital equipment purchase will be funded by the available FY23 Printing Services budget then any remaining will be funded by NAU Central Funds. The Green Fund Grant reimbursement will be immediately paid back and the balance will be reimbursed over a 3-year period to NAU Central Funds.

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

a. If Yes, please identify all committee members:

Not yet – looking forward to working with someone.

## 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)?

The primary alignment for this project is Waste Minimization.

- NAU Printing Services currently produces in-house approximately 1800 square feet per year in mounted products. These mounted materials include 3/16” foam core board, corrugated plastic, styrene and 1/2”

foam core board. Our current process requires us to print on an adhesive PVC based material which is then mounted onto the various rigid boards. A hybrid flatbed printer would allow us to print directly onto the board, eliminating the print and mount process. The direct printing method will **reduce labor time by ~50% and eliminate 1800+ square feet per year of waste vinyl** that is typically one time use and ends up in the landfill because PVC cannot be recycled.

- A hybrid flatbed printer will allow us to expand our indoor and outdoor rigid board offerings and create a “Go Green” line of signs made from paper-based materials. This would give campus buyers the option to choose paper based biodegradable signs instead of plastic and PVC based, significantly reducing the impact of plastic-based temporary signs that end up in the landfill – **with a potential to divert 5300 sq/ft per year**. We plan to incorporate one or more of the following environmentally sustainable sign options:
  - [Dispa Board](#) - FSC-Certified, 100% recyclable paper-based
  - [Falconboard](#) - SFI-certified renewable virgin and post-consumer recycled fibers, recyclable
  - [EagleCell](#) - 100% recyclable paper core and surface papers
  - [Beaver Board](#) - Recyclable and biodegradable - can be recycled as standard wastepaper
  - [Limited outdoor Aquarite](#) - weather resistant, corrugated paperboard
- NAU Printing Services currently outsources approximately 3500 square feet per year of signage which is printed direct to substrate by a vendor and delivered via FedEx or UPS Ground. With the implementation of this device, we would insource this printing. This would not only reduce the carbon impact from routine parcel delivery services, but it would also allow us to offer the more sustainable paper-based options which are not available through our vendors.
- Insourcing the additional 3500 square feet per year will require additional student employment opportunities. We would seek to employ and educate graphic design and advertising students who may find this experience valuable for their ongoing education and career path. They will have an opportunity to operate top of the line cutting edge equipment in the printing and graphics industry.
- We have selected the EFI 16H direct to substrate hybrid flatbed printer which has the following sustainable advantages:
  - The printer has **ink yields (savings) 50%-80% more due to profiles**, Ricoh print head optimization and no need for light cyan or light magenta to hit the same colors that competitors need due to the variable dot sizes. This results in less ink consumables required per print when compared to competitor models.
  - The white ink is very opaque and only needs 1 layer where others may need two layers. This results in **less ink consumables required per print**. This results in less ink consumables required per print when compared to competitor models.
  - The ink has great adhesion and scratch guard, so no need for reprints or having to use adhesive promoters before printing.
  - The device’s credentials include the use of **UL GREENGUARD Gold certified inks** for indoor applications, such as in schools, hospitals, and retail stores – and the low emissions can make for a healthier printing environment also.
  - The printer uses “Cold Cure” UV-LED light technology to cure the ink. The bulbs are instant on and off over the print area and will last **approximately 10,000 hours of run time which is double to triple competitors**.
  - UV-LED has many advantages over convection drying or other ink systems. UV-LED cures ink immediately - there is no drying heater required which results **in lower energy consumption**.

The LED light does not radiate short wavelengths that generate ozone. There is no Mercury disposal with UV-LED lamps.

- o “Cold Cure” UV-LED technology *allows for a wider range of media and recycled or bio-degradable* media because it will not warp or burn the media and have excellent ink adhesion.
- o Other features include low noise below 80 DBL, no venting required and ergonomically designed for user safety and comfort. *The hybrid 16H take the place of 2 machines (roll to roll machine and a flatbed machine) and combines in one footprint.*

## GreenGuard Certification

The following EFI Ink sets have been GreenGuard and GreenGuard Gold certified and are listed in UL's Sustainable Product Guide:

1. VUTEk HS125 Pro Ink
2. VUTEk HS and HSR Series Pro Ink
3. VUTEk H Series
4. VUTEk LX3 Pro Ink
5. EFI Quantum SuperRange Ink
6. EFI - 3M SuperRange Ink
7. EFI - 3M SuperRange XF Ink
8. EFI - 3M SuperFlex Ink
9. VUTEk GSLX UD XP Ink
10. VUTEk GSLX Series 3/4 Ink
11. VUTEk GSLX XP Ink
12. VUTEk H2000 Pro UD Ink
13. EFI Nozomi Ink
14. 32H GSLX XP Ink
15. Prographics 3M, POP, and Rigid Inks



*The products that we use to build and furnish our indoor environments can have a significant impact on indoor air pollution levels. Products that have achieved GREENGUARD Certification are scientifically proven to meet some of the world's most rigorous, third-party chemical emissions standards—helping reduce indoor air pollution and the risk of chemical exposure while aiding in the creation of healthier indoor environments.*

More information [here](#).



## Community

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

Since we already produce jobs using the print and mount method, we will simply move those jobs over to this new equipment and the finished product will look very similar to the buyer but be produced in a much more efficient and sustainable way. Once we've identified our preferred “Go Green” indoor and outdoor sign boards, we will create a multi-month email marketing campaign alerting our print buyers about our new more sustainable product offerings. All products will be added to [Digital Storefront](#) for ease of ordering.

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

Our customer base includes all campus departments and units who purchase using state funds or grant funds – this is mandated by the [NAU Centralized Print Management policy](#). Additionally, we work with local governmental groups – Primarily Flagstaff Unified School District and occasionally The City of Flagstaff, Coconino County, and the Coconino Community College.

### **Project Parameters**

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

As described in above section “**Relationship to NAU Climate Action Plan (CAP)**”, implementing this device will make a significant long-term impact on waste minimization on all printed products for departments and units. Purchasing and implementing this device aligns very closely with the University’s Strategic Goal of “Sustainable Stewardship of Resources” by utilizing and improving our physical resources and moving towards a goal of carbon neutrality.

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

We will keep our per square footage pricing tables the same and lower our labor and consumable costs by adding this device. The ROI calculations show a return on capital investment in approximately 1.5 – 2 years. Once the device capital investment costs are recovered, customer pricing may be re-evaluated.

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

This will be a one-time expense for the purchase of the capital equipment. There are ongoing service agreements and consumable costs which will be paid by NAU Printing Services’ local budget.

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

The Large Format department was established in 2018 and has become a valuable and necessary service to the campus community. This was especially apparent during COVID-19 when various signage materials needed to be produced quickly and efficiently for campus constituents. The department is a long term fixture for the university and will be necessary to provide large format printed materials for the daily operations of many units across campus.

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

Our software system, PrintSmith Vision, will be leveraged to track and report on the annual total square footage for the mounted products we will be diverting to sustainable options. These reports will be available on demand for any time range.

## Project Budget

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

<b>Budget</b>			
<b>Item</b>	<b>Price</b>	<b>Quantity</b>	<b>Total</b>
EFI 16h Hybrid Flatbed Printer	\$91,508	1	\$91,508
Construction/Renovation	\$25,000	1	\$25,000
Shipping & Installation	\$12,000	1	\$12,000


## 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.

<b>Timeline</b>		
<b>Action</b>	<b>Parties Involved</b>	<b>Month/Year</b>
Final Project Approval (Completed)	Rensu Yang AVP, Harlan Teller, VP Christy Farley, SVP	January 2023
Financial Project Approval (Pending)	Renee Miller, Marketing Kevin Johnson, Comptrollers Office Bjorn Flugstad, Budget Office	January 2023
Space Management Committee Approval	Gabe Gurrola, Facility Services	January 2023
Construction/Renovation	Facility Services	January 2023 – March 2023
Printer Installation	Ricoh	April 2023

## 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.*