Vice President for Campus Planning, Infrastructure, and Facilities
230 Sterrett Dr., Suite 112 (0127)
Blacksburg, Virginia 24061

STUDENT ORGANIZATION SUSTAINABILITY INITIATIVE PROPOSAL FORM

Part I- General Information:

Name of Student Organization	UAP 3354- Introduction to EPP
Contact/Responsible Person	Silas Beers, Grady Hesse, Ryan Humphry
Contact Office Held/Title	Students
Contact Email Address	ryanh99@vt.edu, sbeers12@vt.edu, hgrady09@vt.edu
Contact Telephone Number	757-771-6570, 434-466-8654, 540-535-9508

Part II- Project Cost Information

Estimated Cost of this Proposal	$3,695.70	See III.C. below
Estimated Savings -	$9.60	See III.D. below
Net Cost of this Proposal =	$3686.10	

Part III- Supporting Information

A. Please describe your sustainability initiative and attach supporting documentation.

Sustainability has become a major issue, and a huge push has occurred for a transition from non-renewable resources from consumption to more renewable ones. The transition to renewable consumption of resources at Virginia Tech has occurred in a major way through students opting for reusable water bottles rather than plastic single use containers. With more students using reusable water bottles, a demand for water bottle refill stations across campus has arisen. While our campus has water fountains in most buildings, the water fountains cannot be accessed due to COVID-19 regulations. This creates a problem for those students who need to refill their water bottle, but cannot due to the restrictions. Also, even when normal water fountains are accessible it is still difficult to refill water bottles. We seek to fill this need through the requesting of installation of Water Bottle Refill Stations strategically throughout campus. Previous proposals submitted for similar projects have been incredibly popular amongst the student and faculty, and have caused installation of these refill stations throughout campus outside of the Green RFP program.

Single use plastic water bottles are wasteful and must be recycled, but unfortunately are often thrown away. The University takes on the financial burden of collecting and discarding the plastic bottles in both trash and recycle containers. A major benefit of using the water Bottled Refill stations is the limiting of plastic consumption, which allows the University to spend less on recycling. Also, Water Bottle Refill stations are a low maintenance cost following the necessary initial funding requirements.

The Green RFP program has funded numerous Water Bottle Refill Stations located in strategic buildings to include the War Memorial Gym, McComas Hall, Squires Student Center, Newman Library, Litton-Reaves Hall, East Eggleston Hall, Lavery Hall, Owens Dining Hall, Student Services Building, and the Graduate Life Center at Donaldson Brown[1]. Also, the university now requires all new construction and many renovation projects on buildings to include Water Bottle Refill Stations.

This proposal requests one Water Bottle Refilling Station to be located on the first floor of Hutcheson Hall. This water fountain is in a strategic location outside of the Dean's Office for Agriculture and Life Science. The refill station would be located in a normally high trafficked area, with many students and VT faculty passing by the water refill station. The closest other refill station is on the other side of the building, so by installing this water refill station it will provide a major convince factor for many students and faculty. We recommend completing this project, so when all classes are in person many students can have access to refilling their water bottles in Hutcheson Hall. This proposal is for the long-term success of the university achieving the goals they have set in their sustainability plan.

The preferred brand of refill station is Elkay EZH20, and the particular model is ELZSG8WSSK (see attached photo). An alternative brand of Water Bottle Refilling Station brand is Oasis, and the particular model is OPG8SBF (see attached photo). This proposal requests funding to replace the existing single-level bubbler and cooling unit (see attached photos) with a new single-level cooling unit and bubbler, with a bottle filling station.

[1] Schosid, E. (2013, October 17). Sustainable Hokies: Water bottle refilling stations aim to reduce use of disposable water bottles. Retrieved November 06, 2020, from https://vtnews.vt.edu/articles/2013/10/101713-vpa-waterrefill.html

B. How does this initiative help to achieve the goals of the Virginia Tech Climate Action Commitment Resolution and Sustainability Plan?

This project will help Virginia Tech in achieving multiple goals listed in the Virginia Tech Climate Action Commitment Resolution and Sustainability Plan. Firstly, the installation of a water bottle refill station helps sustain Virginia Tech's status as a Leader in Campus Stability[2] (Goal #1). The refill station aligns well with Goal #8, as fewer waste will be generated from cheap disposable bottles due to students utilizing more durable reusable bottles. Furthermore, this refill station will allow students, faculty, and staff to be involved in sustainability programs on campus[2] (Goal #10). Lastly, this project supports Goal #14 of the Virginia Tech Climate Action Commitment Resolution and Sustainability Plan, as it allows Virginia Tech to provide funding and support to a sustainability program[2].

C. What is the cost of your proposal? Please describe in adequate detail the basis for your cost estimate.

Total cost estimate (equipment, labor, installation): $3,695.70 (See James McDaniel's Email)

Mr. Jim McDaniel (Project Coordinator for Campus Renovations Services, VT Facilities Department) has overseen all installation of Water Bottle Filling Stations throughout the Virginia Tech campus from the Green RFP Program. Mr. McDaniel has reviewed our proposal, as well as Denny Cochrane (Sustainability Program Manager). Mr. McDaniel is very experienced with the installation of these water refill stations and has assessed the feasibility and cost estimate with contractor personnel to complete this project. He has ensured our group has taken into account all equipment, labor, and installation costs for this improvement project. Mr. McDaniel's cost breakdown:

Fergusons: $1,763.00 (Unit)
Reynolds Repair: $650.00 (Installer)
W.G. Simmons: $500.00 (Electrical)
W&S: $225.00 (Paint if Needed)
Permit and Inspection: $60.00 (UBO)
Contingency: $497.70 (@ 15%)

Total: $3,695.70

[2] Teglas, J., Cochrane, D., King, N., Siepierski, K., Franczek, K., Vollmer, E., . . . DeSouto, M. (2019, November 17). Sustainability Annual Report FY 19. Retrieved November 05, 2020, from https://www.facilities.vt.edu/content/dam/facilities_vt_edu/sustainability/annual-reports/Sustainability%20Annual%20Report%20FY%2019_compressed.pdf

D. Will your proposal produce cost savings for the University? If so, how much? Please describe in adequate detail the basis for your savings estimate.

Our proposal is not so much about saving the university money in the future, but a more efficient use of space in the times of Covid-19. Presently, the Hutcheson Hall water fountains are blocked and inaccessible to public use due to concerns of transmitting the virus. By switching the bubblers to water-bottle fill stations we provide community members access to drinking water in a location where the old water fountains were just taking up space.

In a 2014-2015 Green RFP on Academic Water Bottle Refill Stations, submitted by Sustainability @VT, the bottle refilling stations in Squires Student Center and Newman Library accumulated an average of 11,929 plastic bottles saved in 2012[3]. This number represents 5 months of plastic bottle reduction per station. Over one school (9 months),
[(11,929 bottles) / (5 months)] * (9 months)= 21,472 bottles per station.

This proposal requests funding for 1 station. This means that this one station alone will save 21,472 bottles.

The International Bottled Water Association's website stated that the average gram weight of a 16.9 ounce "single serve" bottled water container is 12.7 grams of plastic[4]. The total weight in grams for plastic bottles not used from our one proposed water filling station is 272,697 grams per school year. There are 907,185 grams in a ton. This results in a weight of 0.3 tons per school year just from this one water refilling station.

(21,472 bottles per station) * (12.7 grams) = 272,694 grams
(272,694 grams) / (907,185 grams per ton) = 0.3 tons

The university pays around $32 a ton for recycling bottles & cans[2]. Each year the university would save $9.60 from putting in this water fountain.

[($32) * (0.3 tons)= $9.60]

That being said, according to testimony from Mr. Jim McDaniel, the current installation team operates roughly $1200 cheaper than competitors VT has used in the past for similar projects. Additionally, the filters that will be used in these water-bottle fill stations have a capacity for filtering around 3000 gallons so they will not need to be replaced more than once annually according to Mr. McDaniel.

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[3] Block, P., Hickman, M., & Wilson, C. (2014, October 27). Academic-Building-Water-Bottle-Refill-Stations. Retrieved November 07, 2020, from https://www.facilities.vt.edu/content/dam/facilities_vt_edu/sustainability/green-rfps/proposals-by-year/2014-2015-green-rfps/academic-building-water-bottle-refill-stations.pdf

[4] Bottled Water. (2012). Retrieved November 07, 2020, from https://www.bottledwater.org/education/recycling

[2] Schosid, E. (2013, October 17). Sustainable Hokies: Water bottle refilling stations aim to reduce use of disposable water bottles. Retrieved November 06, 2020, from https://vtnews.vt.edu/articles/2013/10/101713-vpa-waterrefill.html

E. Is this funding request for a One-Time need or an Ongoing need (**please check one**)?

X	**One-time**		**Ongoing**

E. Is funding available for this request from another source? If yes, describe the funding (source, amount, etc.)

We have not found sources for external funding, and we do not know of any sources used for similar projects completed in the past.

Attachment # 2

STUDENT ORGANIZATION SUSTAINABILITY INITIATIVE PROPOSAL FORM (Continued)

Part IV- Requestors/Reviewers

Prepared By (Name of Contact for Student Organization): Silas Beers, Grady Hesse, Ryan Humphry

Date Nov 09, 2020

Reviewed By (Name of Appropriate University Official): Jim McDaniel, Projects Coordinator, Campus Renovations Services, Facilities Department

Date 11/30/20

Reviewed By (Name of Office of Sustainability Representative): Denny Cochrane, Sustainability Program Manager

Date 11/30/20

Attachment # 3

STUDENT ORGANIZATION SUSTAINABILITY INITIATIVE FUNDING PROPOSAL CONTACT LIST

In the preparation of your Green RFP form, student organizations are encouraged to seek input and guidance from the following list of university employees. These individuals are familiar with the form and the process. They can address the feasibility of your proposal, provide a technical review, and evaluate the cost & potential savings.

Area of Expertise	Name	Title	Email Address
Engineering & Operations, Energy Management	Kim Briele	Director Engineering & Assessment	sbriele@vt.edu
Facilities: Housing & Residence Life	Todd Pignataro	Associate Director of Facilities	ptodd@vt.edu
Facilities: Buildings & Grounds (Small Renovations)	Jim McDaniel	Project Coordinator	jmcdani@vt.edu
Exterior Lighting	Rob Glenn	Director VT Electric Services	RobGlenn@vt.edu
Student Engagement & Campus Life	Spencer Stidd	Associate Director for Events Services	sstidd@vt.edu
Dining Services & Housing (Student Affairs)	Blake Bensman	Sustainability Mgr.	bensman@vt.edu
Alternative Transport (Bus, Bike & Walk/Electric Vehicles)	Nick Quint	Transportation Network Mgr.	nquint@vt.edu
Landscape Architecture	Melissa Philen	Site Planner	mnphilen@vt.edu
Hahn Horticulture Garden	Scott Douglas	Director/Instructor	dsd1@vt.edu
Recycling and Waste Management	Denny Cochrane	Director Office of Sustainability	denniscc@vt.edu
Other Sustainability Topics	Nathan King	Sustainability Mgr. Office of Sustainability	naking@vt.edu

Citations

Block, P., Hickman, M., & Wilson, C. (2014, October 27). Academic-Building-Water-Bottle-Refill-Stations. Retrieved November 07, 2020, from https://www.facilities.vt.edu/content/dam/facilities_vt_edu/sustainability/green-rfps/proposals-by-year/2014-2015-green-rfps/academic-building-water-bottle-refill-stations.pdf

Bottled Water. (2012). Retrieved November 07, 2020, from https://www.bottledwater.org/education/recycling

Schosid, E. (2013, October 17). Sustainable Hokies: Water bottle refilling stations aim to reduce use of disposable water bottles. Retrieved November 06, 2020, from https://vtnews.vt.edu/articles/2013/10/101713-vpa-waterrefill.html

Teglas, J., Cochrane, D., King, N., Siepierski, K., Franczek, K., Vollmer, E., . . . DeSouto, M. (2019, November 17). Sustainability Annual Report FY 19. Retrieved November 05, 2020, from https://www.facilities.vt.edu/content/dam/facilities_vt_edu/sustainability/annual-reports/Sustainability%20Annual%20Report%20FY%2019_compressed.pdf

Further Resources

Elkay:

https://www.ferguson.com/product/elkay-ezh2o-wall-mount-stainless-steel-indoor-bottle-filling-station-elzsg8wssk/_/R-4610169

Oasis:

https://www.ferguson.com/product/oasis-versafiller-wall-mount-galvanized-steel-indoor-bottle-filling-station-opg8sbf/_/R-4240950

Climate-Action-Commitment (Approved 2013): https://www.facilities.vt.edu/content/dam/facilities_vt_edu/sustainability/climate-action-commitment.pdf

Sustainability Annual Report (2019): https://www.facilities.vt.edu/content/dam/facilities_vt_edu/sustainability/annual-reports/Sustainability%20Annual%20Report%20FY%2019_compressed.pdf

Success on other Campuses in VA: https://studentcenters.gmu.edu/water-bottle-filling-stations/

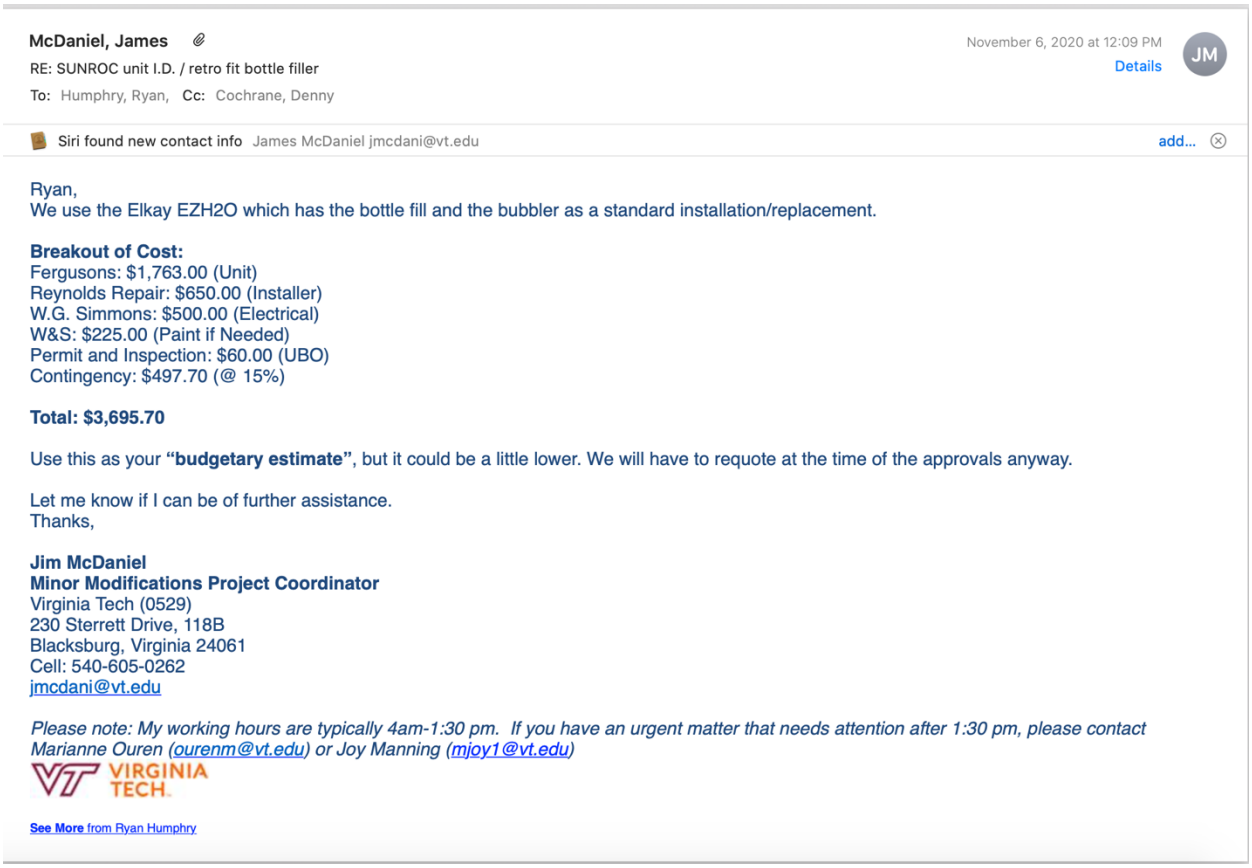
Success on Virginia Tech: https://vtnews.vt.edu/articles/2013/10/101713-vpa-waterrefill.html#:~:text=Water%20bottle%20refill%20stations%20are,water%20bottles%20around%20campus%20instead.

https://www.facilities.vt.edu/sustainability/recycling.html#:~:text=The%20program%20supports%20campus%20sustainability,percent%20recycling%20rate%20by%202020.&text=Only%20plastics%20%231%20(PET),cans%2C%20and%20food%20containers).

Water Bottle Refill Site:


WATER FOUNTAIN
OUT OF
SERVICE

James McDaniel's Email:



McDaniel, James

November 6, 2020 at 12:09 PM

Details

JM

RE: SUNROC unit I.D. / retro fit bottle filler

To: Humphry, Ryan, Cc: Cochrane, Denny

Siri found new contact info James McDaniel jmcdani@vt.edu add...

Ryan,
We use the Elkay EZH2O which has the bottle fill and the bubbler as a standard installation/replacement.

Breakout of Cost:
Fergusons: $1,763.00 (Unit)
Reynolds Repair: $650.00 (Installer)
W.G. Simmons: $500.00 (Electrical)
W&S: $225.00 (Paint if Needed)
Permit and Inspection: $60.00 (UBO)
Contingency: $497.70 (@ 15%)

Total: $3,695.70

Use this as your **"budgetary estimate"**, but it could be a little lower. We will have to requote at the time of the approvals anyway.

Let me know if I can be of further assistance.
Thanks,

Jim McDaniel
Minor Modifications Project Coordinator
Virginia Tech (0529)
230 Sterrett Drive, 118B
Blacksburg, Virginia 24061
Cell: 540-605-0262
jmcdani@vt.edu

Please note: My working hours are typically 4am-1:30 pm. If you have an urgent matter that needs attention after 1:30 pm, please contact Marianne Ouren (ourenm@vt.edu) or Joy Manning (mjoy1@vt.edu)

VIRGINIA TECH

See More from Ryan Humphry