

# SUSTAINABILITY INITIATIVES BY STUDENT ORGANIZATIONS FUNDING PROPOSAL

## Part I - General Information

<b>Name of Student Organization</b>	Office of Energy and Sustainability: Recycling Outreach Team
<b>Contact/Responsible Person</b>	Bridget Acland
<b>Contact Office Held/Title</b>	Recycling Outreach Team Leader
<b>Contact Email Address</b>	<a href="mailto:Beca95@vt.edu">Beca95@vt.edu</a>
<b>Contact Telephone Number</b>	(540) 533-7942

## Part II - Project Cost Information

Estimate Cost of this Proposal	\$200,000	See Part III.C
Estimated Savings –	TBD (See Part III D)	See Part III.D
<b>Net Cost of this Proposal</b>	<b>\$200,000</b>	

## Part III - Supporting Information

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

Recycling is one of the easiest ways for everyone on campus to have an impact on sustainability at Virginia Tech and in their everyday lives. Over the last several years, Virginia Tech’s recycling rate (the proportion of the total waste collected that is sent to be recycled, instead of landfilled) has been steadily climbing towards our goal of 50% by 2020. However, that recycling rate has somewhat plateaued around 40-42%. With the recent conversion by Virginia Tech, along with the Towns of Blacksburg and Christiansburg and Montgomery County to single stream recycling, we are offered a rare and awesome opportunity to take a close look at recycling on campus and find ways to meet—and hopefully exceed—our goals.



This proposal seeks to install 150 new indoor waste stations throughout academic buildings on campus (see photo to left, and Appendix A for full product mockup). The waste stations are side-by-side recycling and trash containers furnished by Max-R. The bins that we have selected are ideal for several reasons:

**1. Safety:** Currently, almost all of the recycling bins on campus are stand-alone bins known as “slim jims” (see photo on following page, at top). These bins present a number of problems, not least of which is they do not meet fire code requirements. We spoke with Zack Adams at Environmental Health and Safety on campus about what the requirements would be for recycling bins that are meant to be placed in public spaces like hallways around the E&G buildings. His response was as follows:

“Containers exceeding 40 gallons capacity must be provided with lids. Such containers and lids must be of noncombustible materials or of combustible materials having a peak rate of heat release not exceeding 399 KW/m<sup>2</sup> when testing in accordance with ASTM E 1354.



“With regards to placement, waste containers are sometimes viewed as being fixtures or furnishings, and as such the protruding objects requirements are applied, e.g., no more than 4” over any walking surface between the heights of 27 and 80”.

“Objects cannot reduce the minimum required egress width.

“A means of egress must be free of obstructions which would prevent its use. This has been interpreted to mean that trash receptacles must either be located out of the egress path (e.g., recess) or else secured to prevent overturning.

“Not a code requirement, but I would lobby for any container to be self-closing so that any fire that may be started will be kept small in scope.”

Currently, the slim jim containers do not attach to the walls, and so become a fire hazard in the event of an emergency, as they can easily be overturned and cause people to trip. The bins that we have selected would be secured to the walls so that they cannot be overturned. This has the added benefit of making the bins easy to locate, as they will not migrate up and down hallways, as the light and easily-moved slim jims can sometimes tend to do.

The spec sheet for the unit that we have selected can be found in Appendix B. This document describes the materials out of which the waste stations are made. These materials were reviewed by the Fire Marshall and personnel from Environmental Health and Safety, and were found to be sufficient to meet the requirements for non-combustible materials. Jeremy Williams’s response to our inquiries is pasted below: “After reviewing this proposal I do not have any issues with the materials.” In addition, Jeremy is willing to help us place the recycling bins so that they meet the Fire Marshall egress width requirements for hallways and fire exits. (See email dated November 10, 2015).

In all, this upgrade would allow Virginia Tech to better meet the safety requirements for the Fire Marshall and therefore make the buildings at Virginia Tech safer for building occupants by eliminating potential combustible materials and the tripping hazard that the current slim jims present.



**2. Aesthetics:** Our current recycling system has been put together piecemeal over time as funding becomes available or additional need has arisen. This has led to there being a wide variety of indoor recycling bins placed somewhat haphazardly throughout academic buildings. In addition to the various colors of slim jims (green, blue, brown, and grey can all be found in various places on campus), there are also grey stacking crates for paper (a remnant from when we were required to separate various types of paper from one another many years ago) and barrel type bins located in various places (see photo to left).

Having so many different types of recycling bins makes recycling confusing to users, as there is no constant in terms of signage, symbols, or other visual cues. By installing a large number of uniform recycling bins, we will be allowed to standardize the colors, symbols, and signage associated with recycling on campus. Not only that, but the units that we have selected are quite attractive, and they will improve the overall look and feel of academic buildings. The myriad bins can make buildings look sloppy; the new waste stations will look clean and intentional, which will reflect well for the entire campus, not just the Facilities Operations personnel who handle the bins each and every day.

Further, the proposed units match the style and colors that Dining Services currently uses for their waste stations in the various dining centers on campus (see photo at right). By matching the waste stations that are already being used by large portions of the campus population, we will create a sense of unity in our waste management tactics as well as a sense of cohesion amongst many areas of campus. Seeing the same colors and symbols on recycling bins across campus will make recycling much easier for people by taking away the confusion of figuring out what a new type of bin is supposed to mean. Thus, we should see an increase in recycling with these new bins since people will be much less confused about how to use the bins or what materials go where.



**3. Housekeeper Needs:** After many in-depth conversations with Wyatt Sasser, the previous Director of Housekeeping at Virginia Tech, he explained that the ideal recycling bins are at least 32 gallons and emptied from the front. Currently, the slim jim containers are only 23 gallons, which means they must be serviced more often or may overflow more readily. The proposed bins are 32 gallons, and open from the front so that housekeepers can easily access and empty the bins. When we showed the proposed design to Wyatt, he came back with his approval: “I’m fine with the design. The 32 gallon size units is good. I like the hard liner, the front hinged panel, and the top loading features.” (See email dated June 18, 2015).

Wyatt also mentioned later that he liked the backboards that allow us to place appropriate signage behind each of the bins, which will reduce contamination in each of the bins, ultimately reducing work for our housekeepers, who often spend time sorting contamination out of recycling bins.

Finally, we asked Wyatt Sasser how many recycling bins he thought we would need in order to meet needs for all E&G buildings on campus. He estimated a good starting point to be 150 units with the number most likely higher.

We believe that all 150 should go in together to prevent simply adding another type of bin to the myriad recycling bins already found on campus.

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

Point number 8 of the Climate Action Commitment states that “Virginia Tech will minimize waste and achieve a 50% recycle rate by 2020.” By standardizing recycling bins across campus, we will reduce the confusion associated with recycling currently, reduce contamination in waste and recycling bins, and therefore see an increase in recycling rates.

Further, point number 10 of the CAC states that “Virginia Tech will engage students, faculty, and staff through education and involvement to develop and implement innovative strategies for efficient and sustainable use of energy, water, and materials in all university-owned facilities.” The waste bins that are proposed include a backboard that makes space for signage or other materials about recycling. This will be another opportunity to do outreach and education with the students on campus and teach them about proper materials sorting, which is consistent across Montgomery County (meaning that they can use the information they learn on campus at the homes off campus as well).

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

The cost of 150 bins have been quoted by Max-R at \$187,267.50 (including shipping and delivery fees). The estimate provided by Max-R is attached in Appendix C. An additional \$12,732 is requested in labor for securing the bins to the building structure so as to meet fire code.

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.

The proposal will provide a substantial cost savings for the university. Virginia Tech is a jurisdictional member of the Montgomery Regional Solid Waste Authority and is charged \$30 per ton for single stream recycling material and \$54 per ton (nearly double) for trash. Of the 2,037 tons of principal recyclable material reported for calendar year 2014, over 932 tons (46%) were paper products and commingled containers with much of that collected from inside administration and academic buildings. The existing containers are few in number, outdated, and are inadequate for single stream recycling. Much of what could be recycled winds up in trash containers. The MAX-R indoor containers are very functional and they will significantly simplify and enhance our recycling collection operations. The result will be an increase in our recycling rates and a decrease in our waste management costs.

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

**One-time**       **Ongoing**

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

No.

## SUSTAINABILITY INITIATIVES BY STUDENT ORGANIZATIONS FUNDING PROPOSAL

### Part IV- Requestors/Reviewers

Prepared By (Name of Contact for Student Organization) Bridget Acland

Date 11/20/15

Reviewed By (Name of Appropriate University Official) Anthony Watson, Facilities Department

Date 1/8/15

Reviewed By (Name of Office of Energy and Sustainability Representative) Denny Cochran

Date 1/8/15

## Appendix A: Product Mockup

# OXFORD

## DOUBLE TOP LOAD

Virginia Tech Bin - Mark Hammer



Roof Style: Flat  
Trim Color: Carmel  
Handles: None  
Headerboard: Squared with Individual Graphics  
Headerboard Color: Carmel

Bin 1	Bin 2	Bin 3	Bin 4
Capacity: 32	Capacity: 32	Capacity:	Capacity:
Opening: Saturn Shape	Opening: Standard	Opening:	Opening:
Panel Color: Blue	Panel Color: Navy	Panel Color:	Panel Color:
Opening ID: Recycling	Opening ID: Waste	Opening ID:	Opening ID:
Opening ID Color: White	Opening ID Color: White	Opening ID Color:	Opening ID Color:
Symbol: Recycle	Symbol: Waste	Symbol:	Symbol:
Symbol Color: White	Symbol Color: White	Symbol Color:	Symbol Color:

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max-r.net | W248 N5499 Executive Dr. Sussex, WI 53089 | 1-877-646-0663



max-R Lumber™

## Material

**97% pure** max-R Lumber™ is the **purest grade** of Type-2 HDPE recycled plastic in the industry today. It is made from post-consumer and post-industrial material. (Blue, Brown, Caramel, Orange, Green, Desert Tan, Light Brown, Navy and Gray max-R Lumber™ is 97% pure - Remaining 2% is Premium Grade Resins and Ultra Violet Inhibitors. Each pound of max-R Lumber™ = 8 - 10 Recycled Milk Jugs. White, Red and Yellow max-R Lumber™ ranges from 0-97% recycled content depending on base resin availability.)

max-R Lumber™ is extruded from non-commingled recyclables to ensure a network of complete molecular linkage. This will eliminate stress cracking and material separation due to severe temperature changes.

We are the only manufacturer to use the max-R Lumber™ brand material.

**80 years** The Ohio Department of Natural Resources states life expectancy of max-R Lumber™ to be **greater than 80 years**.

Colorant used in max-R Lumber™ shall be of non-metal composition due to possible environmental problems and to meet current and future federal standards.

**max-reclaim** max-R Lumber can be easily recycled and reused several times.

NFPA Hazard ID's: Health: 1, Flammability: 1, Reactivity: 0

## Construction

- Pocket-Screw construction used on all recycling stations and waste receptacles.
- Tongue & Groove joinery on all corner posts.
- Marine-grade hardware, fasteners and hinges.
- All door panels are reinforced with aluminum tubing.
- Rigid heavy duty liners included.
- Optional Header is to be easily removed and interchangeable.
- Optional Logos and Recycle Symbols to be engraved and poured with proprietary resin.
- Restrictive openings are to accommodate Cans/Bottles, Paper and Organic material.
- When called for, openings are to be clearly identified with pictures that are mounted to UV Stable Polycarbonate. Identifiers are to be interchangeable and recessed into material.
- Manufactured in the USA



Contact Us: (p) 1.888.868.MAXR (f) 1.888.868.7184 [www.max-R.net](http://www.max-R.net)

**Appendix C: Estimate from Max-R**



A Division of The Prestwick Group, Inc.

W248 N5499 Executive Dr.  
Sussex, WI 53089  
Phone 888-868-6297  
Fax 888-868-7184

**ESTIMATE**

DATE ESTIMATE #  
2/12/2015 72228

**NAME / ADDRESS**

Virginia Poly Inst and State University  
Accounts Payable  
North End Center Suite 3300  
Blacksburg, Virginia 24061  
United States

**Ship To**

Virginia Tech University  
230 Sterrett Drive  
Suite 48  
Blacksburg, VA 24601

TERMS	REP	SM-REF-TAKEN
Net 30	7ED1	MH-CUST-RS

QTY	MR ITEM	DESCRIPTION	UNIT PRI...	TOTAL
150	100-530-032-G/G	CARAMEL PANEL/CARAMEL ACCENT-DOUBLE OXFORD 32 GAL TOPLOAD SQUARE RECYCLE STATION OPENING IDS: RESIN: (WHITE) L:(RECYCLE) R:(WASTE) (ENGRAVE/SIGN PROOF NEEDED)	1,173.20	175,980.00
150	66-555	SPLIT-COLOR CONFIGURATION ON A DOUBLE UNIT ## #1:(BLUE) #2:(BLACK)	0.00	0.00
150	66-520	(SAND) TALL HEADER BOARD FOR A DOUBLE UNIT WITH (2) 8.5 X 11 PORTRAIT STYLE DISPLAYS# (POSTER OID NOT INCLUDED)	0.00	0.00
150	66-541	(1) RESTRICTIVE OPENING LOCATION: (L TOP) SHAPE: (SATURN) *ENGRAVE/SIGN PROOF NEEDED*#	0.00	0.00
150	55-914	(1) MEDIUM ENGRAVED SYMBOL & POURED IMAGE: (RECYCLE SYMBOL) LOCATION:(PANEL 1) SIZE: (# , SEE PROOF) RESIN:(WHITE) FILE: (NEW/REPEAT) *ENGRAVE/SIGN PROOF NEEDED*	0.00	0.00

100% PREPAYMENT IS REQUIRED ON ALL NEW ACCOUNTS AND INTERNATIONAL ACCOUNTS.  
50% PREPAY IS REQUIRED ON EXISTING ACCOUNTS OVER \$2000  
PROGRESS BILLING IS REQUIRED ON ANY ORDER OVER \$20,000.

**TOTAL**

My signature on this estimate verifies that I have approved this order and I understand it will be processed for production.

SIGNATURE \_\_\_\_\_

DATE \_\_\_\_\_



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**NAME / ADDRESS**

Virginia Poly Inst and State University  
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North End Center Suite 3300  
Blacksburg, Virginia 24061  
United States

**Ship To**

Virginia Tech University  
230 Sterrett Drive  
Suite 48  
Blacksburg, VA 24601

<b>TERMS</b>	<b>REP</b>	<b>SM-REF-TAKEN</b>
Net 30	7ED1	MH-CUST-RS

QTY	MR ITEM	DESCRIPTION	UNIT PRI...	TOTAL
150	55-914	(1) MEDIUM ENGRAVED SYMBOL & POURED IMAGE: (WASTEMAN SYMBOL) LOCATION: (PANEL 2) SIZE: (#, SEE PROOF) RESIN: (WHITE) FILE: (NEW/REPEAT) *ENGRAVE/SIGN PROOF NEEDED*	0.00	0.00
	S/H	SHIPPING & HANDLING- (37.5x)(MH) ***LIFTGATE SERVICE AVAILABLE UPON REQUEST ADDITIONAL CHARGES APPLY***	11,287.50	11,287.50

100% PREPAYMENT IS REQUIRED ON ALL NEW ACCOUNTS AND INTERNATIONAL ACCOUNTS.

50% PREPAY IS REQUIRED ON EXISTING ACCOUNTS OVER \$2000  
PROGRESS BILLING IS REQUIRED ON ANY ORDER OVER \$20,000.

**TOTAL** **\$187,267.50**

My signature on this estimate verifies that I  
have approved this order and I understand it  
will be processed for production. Page 2

**SIGNATURE** \_\_\_\_\_

**DATE** \_\_\_\_\_