

# SUSTAINABILITY INITIATIVES BY STUDENT ORGANIZATIONS FUNDING PROPOSAL

## Part I - General Information

<b>Name of Student Organization</b>	Office of Sustainability
<b>Contact/Responsible Person</b>	Emma Martin
<b>Contact Office Head/Title</b>	Office of Sustainability Intern
<b>Contact Email Address</b>	emmatm2@vt.edu
<b>Contact Telephone Number</b>	804-432-1065

## Part II - Project Cost Information

Estimate Cost of this Proposal	\$16,500	See Part III.C
Estimated Savings –	TBD	See Part III.D
<b>Net Cost of this Proposal</b>	<b>\$16,500</b>	

## Part III - Supporting Information

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

The Office of Sustainability at Virginia Tech is requesting funding for the installation of 13 additional 5-loop bicycle racks (65 loops total) on the Virginia Tech campus. Several areas, designated as District 25, District 27, District 30, and District 39 have been appointed as being high priority locations for additional bike parking. In District 25, we request funding for 3 additional racks, 3 additional racks in District 27, 2 additional racks in District 30, 3 additional racks in District 39, and 2 additional racks in District 23.

Virginia Tech has experienced a significant increase in the number of cyclists on campus in the past several years. This surge in bicycle use as a prominent mode of transportation can easily be seen with the increased of bikes parked around the academic side of campus. Bike racks near many of the academic buildings are consistently overcrowded and it can sometimes be difficult for commuters to find adequate space to lock up their bicycles.

Due to the lack of available bike parking, students can often secure their bikes to rails, signs and trees. These types of practices can damage infrastructure and hinder foot traffic. If students are confident in the availability of adequate bike parking on which they can safely secure their bike, it will strengthen the incentive to bike rather than drive to campus. By installing additional bike racks in locations noted as high priority, the University will not only be providing convenient parking for cyclists but also will be promoting the continued use and growth of alternative transportation among the Virginia Tech community.

The Virginia Tech bike parking master plan and communications with the Alternative Transportation Office revealed the highest priority locations on the academic side of campus in need of bike parking. The highest priority zone, designated as District 10, is the area encompassing the GLC, Squires Student Center, and Newman Library. The second most prioritized area, designated as District 20, is the area encompassing Derring Hall, Hahn Hall North and South Wing, Pamplin Hall, and Robeson Hall.

The prioritization of these areas, enumerated in the Bicycle Parking Master Plan, is based off the calculated number of bike loops required to service the surrounding buildings according to building use/type. The VT approach for quantifying the necessary number of bike loops integrates standard LEED and APBP (Association of Pedestrian and Bicycle Professionals) methodology. The tables showing the building use and corresponding bicycle parking needs for each building within Districts 10, 20, 23, 25, 27, 30, and 39 are provided in Appendix A. These needs are excerpts from the Bike Parking Master Plan. It has been noted that the building use and number of work stations used in the calculation of bike requirements for Newman Library may be out-of-date due to recent renovations within the building and in the surrounding plaza. As the number of work stations for students has increased, the calculation may be an underestimate for buildings bicycle loop shortage.

Though District 23 is not identified as an area of the highest priority, bike parking is very sensitive to the proximity to primary building entry locations and those racks existing near Owens are not sufficiently close to the main entrance of Hokie Grill. Despite the indicated surplus in the Master Plan, I believe two additional 5 loop bike racks should be introduced due to alleviate the constant overcrowding of bikes in racks currently located in front of Hokie Grill.

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

*Policy Point #1 - Virginia Tech will be a leader in Campus Sustainability.*

- Adding additional bike parking on campus will increase the ease and convenience of cycling around campus as well as enhance Virginia Tech's bicycling culture. By doing so, the university's reputation for sustainability commitment will be solidified.

*Policy Point #3 - Virginia Tech will establish a target for reduction of campus GHG emissions to 80% below 1990 emissions level by 2050.*

- Additional bicycling facilities on campus will help to encourage more people to commute by bike. An increase in students engaging in sustainable transportation options reduces greenhouse gas emissions, such as carbon dioxide and nitrogen oxides from vehicular sources.

*Policy Point #10 - Virginia Tech will engage students, faculty and staff through education and involvement to reduce consumption of energy, water, and materials in...facilities.*

- Both increasing the ease and convenience of cycling on campus and enhancing the university's bicycle culture with additional bike parking will help normalize bicycling as a primary method of transportation. This will encourage more students, faculty, and staff to use sustainable modes, which will assist the university in decreasing energy use and greenhouse gas emissions, significantly reducing the University's overall carbon footprint.

*Policy Point #11 - Virginia Tech will improve transportation energy efficiency on campus through parking, fleet, and alternative transportation policies. Alternative transportation use*

*will increase from the current level of 45%, to a goal of 54% in 2015, and 60% in 2020.*

- An easy to reach, conveniently located bike corral in one of the most heavily trafficked areas on campus will serve to encourage and reinforce modes of alternative transit such as cycling.

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

The requested costs are based off a price quote from Renaissance Site Furnishings for the bike 5-loop bicycle rack and the cost of a concrete pad from Virginia Tech Facilities Operations. Each bike rack is \$499.00 per unit. The cost of 13 bike racks with 5 loops per rack would be \$6,832.00 including freight costs. Each slab of concrete costs \$650, totaling \$8,450. Installation can be done with in-house personnel from the Facilities Department at no additional cost. Including a 10% contingency the total cost for the 13 bike racks and slabs is estimated to be \$16,500.

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.

While it can be assumed that increased bicycle infrastructure will encourage more people to take advantage of alternative transportation methods and increase the university's bicycle culture, there has not been sufficient analysis conducted within universities to quantify the cost savings of an increased bike culture. Some indirect cost benefits of a well-supported cyclist community stem from a decrease in vehicular traffic on, and arriving to campus. This will reduce wear and tear on the roads and parking infrastructure of the campus. In turn, the cost of maintenance of vehicular infrastructure will decrease. Eventually, if the vehicular traffic on campus remains stagnant or even decreases, the need for constructing large, cost-intensive parking and vehicular transportation infrastructure is eliminated. In addition to alleviating traffic, biking is not associated with any harmful air emissions, helping to promote cleaner air on and around campus.

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.)

There is currently no other additional source of funding for this request.

## SUSTAINABILITY INITIATIVES BY STUDENT ORGANIZATIONS FUNDING PROPOSAL

<b>Part IV- Requestors/Reviewers</b>	
Emma Martin Prepared By (Name of Contact for Student Organization)	Date 11/4/16
Mackenzie Jarvis Reviewed By (Name of Appropriate University Official)	Date 11/4/16
Denny Cochrane Reviewed By (Name of Office of Sustainability Representative)	Date 11/4/16

# Appendix A - Bicycle Parking Requirements by District

From the Bicycle Parking Master Plan

## DISTRICT 10 Building Use and Bicycle Parking Requirements

### DISTRICT 10

Squires Student Center Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	85	5% PO	3	1.5		
Class/Lab Stations	1606	10%	161	80.5		
Dining Seats	246	10%	25	12.5		
TOTAL	1937		189	94.5	53	-41.5

Newman Library & University Bookstore Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	93	5% PO	4	2		
Class/Lab Stations	834	10%	83	42		
TOTAL	927		87	44	57	+13

Graduate Life Center Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	71	5% PO	3	1.5		
Class/Lab Stations	951	10%	95	47.5		
Dinning Seats	350	10%	35	17.5		
Residential Stations	218	20%	44	22		
TOTAL	1590		177	88.5	20	-68.5

District Totals: Required Loops: 227 / Existing Loops: 130 / Shortage: 97

## DISTRICT 20 Building Use and Bicycle Parking Requirements

### DISTRICT 20

#### Derring Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	274	5% PO	10	5		
Class/Lab Stations	1010	10%	101	50.5		
<b>TOTAL</b>	<b>1284</b>		<b>111</b>	<b>55.5</b>	<b>40</b>	<b>-15.5</b>

#### Hahn Hall North Wing Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	7	5% PO	1	1		
Class/Lab Stations	1040	10%	104	52		
<b>TOTAL</b>	<b>1047</b>		<b>105</b>	<b>53</b>	<b>16</b>	<b>-37</b>

#### Robeson Hall & Hahn Hall South Wing Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	254	5% PO	10	5		
Class/Lab Stations	619	10%	62	31		
<b>TOTAL</b>	<b>873</b>		<b>72</b>	<b>36</b>	<b>20</b>	<b>-16</b>

#### Pamplin Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	390	5% PO	15	7.5		
Class/Lab Stations	1118	10%	112	56		
<b>TOTAL</b>	<b>1508</b>		<b>127</b>	<b>63.5</b>	<b>28</b>	<b>-35.5</b>

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**District Totals: Required Loops: 208 / Existing Loops: 104 / Shortage: 104**

## DISTRICT 23 Building Use and Bicycle Parking Requirements

## DISTRICT 23

### Eggleston Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	424	20%	85	42.5		
Office Stations	62	5% PO	2	1		
Class/Lab Stations	75	10%	8	4		
TOTAL	561		95	47.5	59	+11.5

### Owens Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	114	5% PO	4	2		
Dinning Seats	700	10%	70	35		
TOTAL	814		74	37	38	+1

District Totals: Required Loops: 84.5 / Existing Loops: 97 / Excess: 12.5

## DISTRICT 25 Building Use and Bicycle Parking Requirements

### DISTRICT 25

#### War Memorial Gym Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	120	5% PO	5	2.5		
Class/Lab Stations	335	10%	34	17		
Daily Attendance	779	10%	78	39		
TOTAL	1,234		117	58.5	20	-38.5

District Totals: Required Loops: 19.5 / Existing Loops: 20 / Shortage: 38.5

## DISTRICT 27 Building Use and Bicycle Parking Requirements

### DISTRICT 27

#### Campbell Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	322	20%	64	32	23	-9

#### Slusher Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	668	20%	134	67	43	-24

District Totals: Required Loops: 99 / Existing Loops: 66 / Shortage: 33

## DISTRICT 30 Building Use and Bicycle Parking Requirements

### DISTRICT 30

#### Price Hall Bicycle Parking:

BICYCLE PARKING MASTER PLAN / January 2014

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class/Lab Stations	252	10%	25	12.5		
Office Stations	181	5%PO	7	3.5		
TOTAL	433		32	16	7	-9

Sandy Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class/Lab Stations	60	10%	6	5		
Office Stations	39	5%PO	1	0.5		
TOTAL	99		7	5.5	12	+6.5

Hutcheson Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class/Lab Stations	391	10%	39	19.5		
Office Stations	229	5%PO	9	4.5		
TOTAL	620		48	24	32	+8

Smyth Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class/Lab Stations	424	10%	42	21		
Office Stations	162	5%PO	6	3		
TOTAL	586		48	24	11	-13

Seitz Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class/Lab Stations	398	10%	40	20		
Office Stations	81	5%PO	3	1.5		
TOTAL	472		43	21.5	5	-16.5

Agnew Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	28	5%PO	1	0.5	5	+4.5

Saunders Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class/Lab Stations	321	10%	32	16		
Office Stations	51	5%PO	2	1		
TOTAL	372		34	17	4	-13

District Totals: Required Loops: 108.5 / Existing Loops: 76 / Shortage: 32.5

DISTRICT 39 Building Use and Bicycle Parking Requirements



**DISTRICT 39**

## Wallace Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class Stations	757	10%	76	38		
Office Stations	137	5%PO	5	2.5		
TOTAL	894		81	40.5	10	-30.5

## Hillcrest Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Residential Stations	112	20%	22	11		
Class Stations	106	10%	11	5.5		
Office Stations	39	5%PO	1	0.5		
TOTAL	257		34	17	10	-7

## Wallace Annex Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Class Stations	14	10%	1	0.5		
Office Stations	4	5%PO	1	0.5		
TOTAL	18		2	1	0	-1

District Totals: Required Loops: 58.5 / Existing Loops: 20 / Shortage: 38.5

# Appendix B

Date	Quote #
11-4-16	11.16.02
<b>Your RCLF Contact:</b>	
Jessica Wood	
Quote Valid for 60 days	

2807 MARY LINDA AVE., NE  
 ROANOKE, VA 24012  
 PHONE: 540-342-1548  
 FAX: 540-342-1417  
 WWW.RCLFSITEFURNISHINGS.COM



To: Emma Martin  
 Virginia Tech  
 emmatm2@vt.edu

*Thank you for allowing us to offer our quote for the above referenced project, subject to the specifications listed below.*

Sales Rep	Project Name	Payment Terms	Lead-time
N/A	Virginia Tech Bike Racks	Net 30	10-12 Weeks from all approvals/deposit

Ln. #	Qty.	Item #	Description	Unit Price	Ext. Price
1	13	BK-2224-5-SM	RCLF Rails Rack Capacity: 5 loops/1-11 bikes Anchoring: Surface Mount Finish: Polyester Powder Coat Color: Mineral Bronze	\$499.00	\$6,487.00
					<b>Freight: \$345.00</b>
					<b>Tax: N/A</b>
					<b>Installation: N/A</b>
					<b>Total Amount: \$6,832.00</b>

Please contact us with any questions, clarification, or further assistance you may need.  
 Made in the USA

Sincerely,  
 THOMAS WASICKI-DIRECTOR OF SALES