

# SUSTAINABILITY INITIATIVES BY STUDENT ORGANIZATIONS FUNDING PROPOSAL

## Part I - General Information

<b>Name of Student Organization</b>	Alternative Transportation Internship Program
<b>Contact/Responsible Person</b>	Meghan Hekl
<b>Contact Office Held/Title</b>	Alternative Transportation Intern
<b>Contact Email Address</b>	<a href="mailto:mehekl@vt.edu">mehekl@vt.edu</a>
<b>Contact Telephone Number</b>	703-424-1486

## Part II - Project Cost Information

Estimate Cost of this Proposal	\$42,940	See Part III.C
Estimated Savings –	TBD	See Part III.D
<b>Net Cost of this Proposal</b>	<b>\$42,940</b>	

## Part III - Supporting Information

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

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### Additional Bike Racks for the Academic Side of Campus

The Alternative Transportation Center is requesting funding for the installation of 38 additional 5-loop bicycle racks (190 Loops) on the Virginia Tech campus. Two specific areas, designated as District 10 and District 15, have been appointed as being the highest priority locations for additional bike parking on the academic side of campus.

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 times be seen securing 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 that 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 15, serves the ICTAS Building, Lavery hall, Randolph Hall, and Hancock Hall.

The prioritization of these areas, enumerated in the Bicycle Parking Master Plan, is based off the theoretical 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 and 15 are provided in Appendix A. It has been noticed 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. Therefore, because the number of work stations for students has increased, the calculation may be an underestimate for buildings bicycle loop shortage. Additionally, many bicycles secured to the covered bike racks within District 10 seem to be there for long-term storage, eliminating possible spaces for daily

commuter space. In order to support the calculated values of bike parking shortage, maps of the encompassed zones are provided in Appendix B. The District 10 map contains pictures depicting the overcrowded bicycle racks servicing the surrounding buildings.

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

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*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 hub 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 alternative

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The requested costs are based off a price quote from Renaissance Site Furnishings for the bike 5-loop bicycle rack (Appendix B) and the cost of a concrete pad from Virginia Tech Facilities Operations.

<b>5 - Loop Bicycle Rack</b> .....	\$500.00
<b>Concrete Pad (7’X15’)</b>	
Cost/ft <sup>2</sup> .....	\$6.00/ft <sup>2</sup>
Area of Concrete Pad.....	105 ft <sup>2</sup>
Individual Concrete Pad Cost.....	\$630.00
<b>Total Cost per Rack</b> .....	<b>\$1,130.00</b>
<b>District 10</b>	
Loop Shortage.....	97 Loops
# of 5 Loop Racks.....	20 Racks
District 10 Cost.....	\$22,600.00
<b>District 15</b>	
Loop Shortage.....	90 Loops
# of 5 Loop Racks.....	18 Racks
District 15 Rack Cost.....	\$20,340.00
<b>Total Project Cost</b> .....	<b>\$42,940.</b>

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.

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

### Part IV- Requestors/Reviewers

Meghan Hekl 11/15/2015

Prepared By (Name of Contact for Student Organization) Date

Mackenzie Jarvis 11/15/2015

Reviewed By (Name of Appropriate University Official) Date

Denny Cochrane 11/20/2015

Reviewed By (Name of Office of Energy and Sustainability Representative) Date

# Appendix A - Bicycle Parking Requirements by District

## *From the Bicycle Parking Master Plan*

### DISTRICT 10

#### Building Use and Bicycle Parking Requirements

##### 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	#BICYCLE S	#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 15

### Building Use and Bicycle Parking Requirements

#### ICTAS Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	124	5% PO	7	3.5		
Class/Lab Stations	134	10%	13	6.5		
TOTAL	258		20	10	6	-4

#### Lavery Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	11	5% PO	1	1		
Class/Lab Stations	396	10%	40	20		
Dining Seats	833	10%	83	41.5		
TOTAL	1240			62.5	31	-31.5

#### Randolph Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	228	5% PO	9	4.5		
Class/Lab Stations	1,493	10%	149	74.5		
TOTAL	1,721		158	79	52	-27

#### Hancock Hall Bicycle Parking:

USER GROUP	#PERSONS	%BICYCLES	#BICYCLES	#REQUIRED LOOPS	#EXISTING LOOPS	DIFFERENTIAL
Office Stations	24	5% PO	1	0.5		
Class/Lab Stations	625	10%	63	31.5		
TOTAL	649		64	32	5	-27

District Totals: Required Loops: 183.5 / Existing Loops: 94 / Shortage: 89.5

## Appendix C – Bike Rack Quote



2807 Mary Linda Avenue - Roanoke, Va 24012  
P: 540-342-1548 / F: 342-1417  
[W: Renaissance Site Furnishings.com](http://W:RenaissanceSiteFurnishings.com)

October 1, 2013

### **Bike Rack Quote**

The BK-2224, 5-Loop bike rack in Mineral Bronze is specially priced for Virginia Tech at \$499.00 each. This price includes transportation to the Blacksburg campus.

Thanks for the inquiry, and please let me know if you have any questions.

Thank you,

Neil Conner  
Director of Sales