

**2012-2013 GREEN RFP PROGRAM
STUDENT ORGANIZATION SUSTAINABILITY INITIATIVE FUNDING PROPOSAL**

Part I- General Information:

| | |
|-------------------------------------|--|
| Name of Student Organization | Urban Affairs & Planning Student Organization |
| Contact/Responsible Person | Navreet Deo |
| Contact Office Held/Title | Member |
| Contact Email Address | deonav@vt.edu |
| Contact Telephone Number | 703 314 1226 |

Part II- Project Cost Information

Estimated Cost of this Proposal See III.C. below

Estimated Savings - See III.D. below

Net Cost of this Proposal =

Part III- Supporting Information

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

Bicycle Parking Hub

Biking has become an increasingly popular mode of transportation among Virginia Tech students. The Alternative Transportation Office has noted annual increases in the number of bicycles registered on campus. In the 2010 to 2011 school year, Parking Services registered 676 bikes, another 1,378 bikes in the 2011 to 2012 academic year, followed by an additional 1,112 bikes in the 2012 to 2013 school year, and 725 bikes in the first two months of the 2013 fall semester. The growing use of bicycles is also evident by the increased need for bike racks and overcrowding of current racks. Although Virginia Tech currently has over 279 bicycle racks on campus, almost all are often full, demonstrating the degree of interest students have in cycling as a transportation mode.

Of the existing racks on campus roughly 186 are in good condition, but at least 33 are in need of immediate repair and/or replacement, and an additional 57 racks will require repair in the near future. In addition, the majority of current racks are 5-loop stations, meaning only 10 bikes can be parked at a time. The remaining racks are 3 and 7-loop racks that can accommodate only 6 to 14 bicycles respectively. Contributing most, however, to the issue of inefficient parking facilities for cyclists is the existence of several highly trafficked "holes" across campus where demand is high but no racks are currently in place. One such target area is the Pamplin/Robeson/Williams Hall quad.

The Alternative Transportation Office aims to rectify the lack of bicycle racks in the Pamplin/ Robeson/Williams Hall quad by installing a 30-loop bike parking hub. In wake of a lack of conveniently located bike racks in this academic quad, students are tying their bikes to rails, signs and trees. Such practices not only damage infrastructure and hinder foot traffic, but can also irreparably damage the old growth Poplar trees lining the walkways in this area. Furthermore, if students feel secure in the belief that their bicycles will not be damaged by wear and tear from neighboring bicycles sharing the same rack it will strengthen the incentive to bike rather than drive to campus. By installing a bicycle hub here the University will maintain the aesthetic beauty of the quad, provide convenient parking for cyclists, and promote the continued use of alternative transportation among students.

The bike parking hub will consist of a 30-loop rack atop concrete pavers and will lay adjacent to the existing pathway between Pamplin Hall and Robeson Hall. The goal of this project is to create a bicycle parking hub that students find efficient and aesthetically pleasing, and the University finds cost-effective.

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

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

- Increasing the ease and convenience of cycling to campus will solidify Virginia Tech's reputation as a university committed to sustainability

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

- Increased number of bike hubs will translate into greater cycling traffic and less driving, reducing the degree of vehicular GHG's emitted on and around campus.

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.

- By increasing the convenience of partaking in alternative-transportation, students will be more willing to engage in cycling and reducing the campus' 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.

30-loop bicycle racks.....\$0.00 (Alternative Transportation already has the racks.)
Concrete pavers.....\$12,000 (See Appendix for hub design draft.)

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 Bicycle Parking Hub will produce quantifiable cost savings for the university in several ways. First and foremost, the presence of convenient cycling facilities, such as parking hubs, promote the use of alternative transportation and reduce the traffic, energy use, pollution, and parking dilemmas created by drivers. Fewer drivers will correlate to a decreased need for parking spaces and facilities, and reduced costs associated with mitigating adverse impacts of vehicular GHG emissions. Further, in the absence of proper bicycle parking facilities, students tend to tie bikes to campus infrastructure. The bike hub will prevent costs associated with repairing rails, fences and rehabilitating old growth trees damaged by bicycles.

In terms of accommodating student drivers, parking lot surfaces cost \$3,200 dollars to construct and roughly \$50 dollars per year to maintain. Parking spots within garages cost approximately \$1,700 to construct and nearly \$60-\$100 each year to maintain. With the installation of a 30-loop bike parking hub that can readily station 60 bicycles, the university has the potential to save more than \$4,800 dollars annually in the maintenance of parking spaces alone.

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 no additional funding available for this initiative.

Part IV- Requestors/Reviewers

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|--|------------|
| Prepared By (Name of Contact for Student Organization) | (Date) |
| Navreet Deo | 10/16/2013 |

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

1. Bicycle Parking Hub Design Draft
2. Bicycle Parking Hub Site Map
3. Bicycle Parking Master Plan



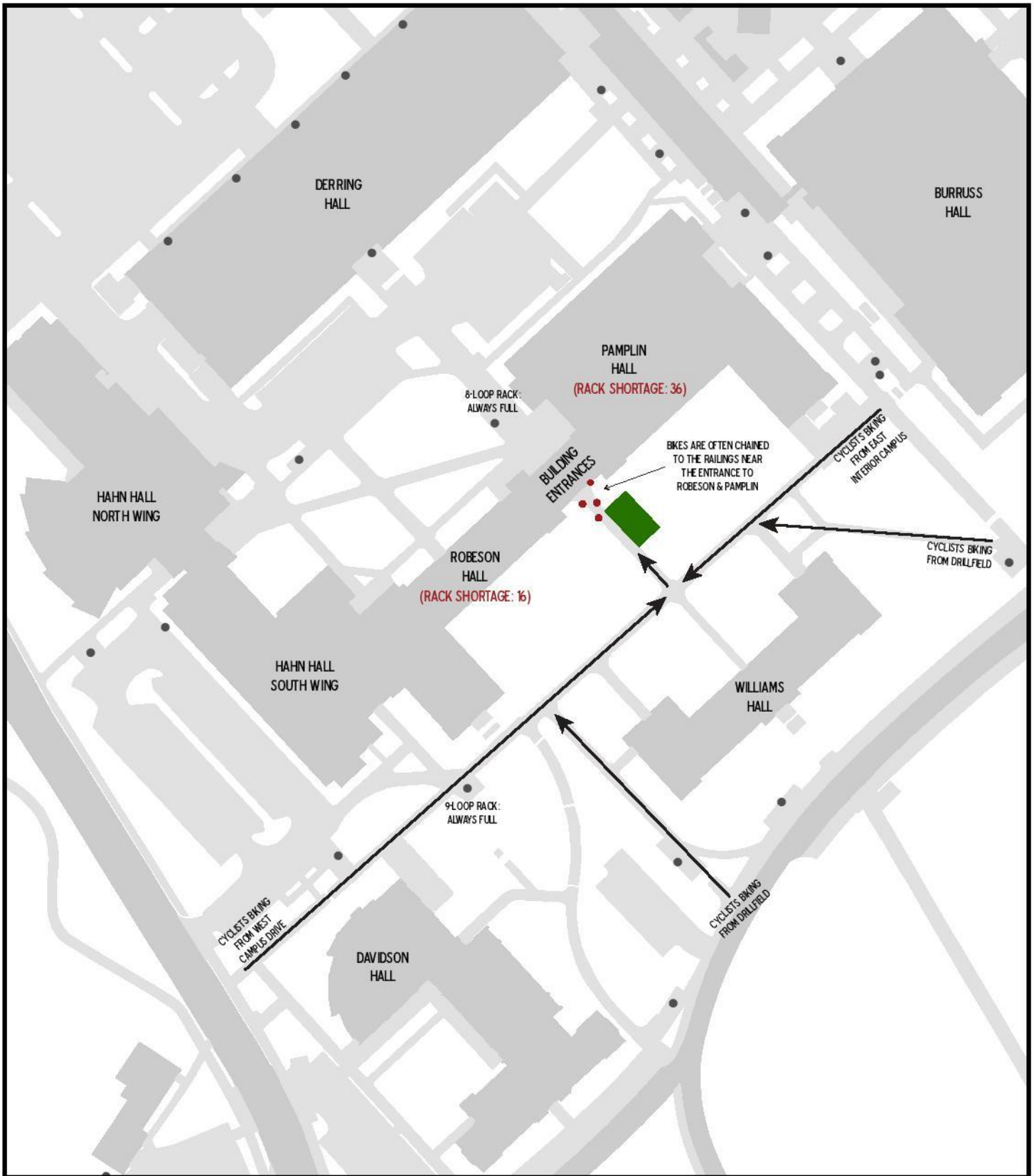
PAMPLIN HALL

NEW RENAISSANCE BLDG
(6) 5 LOOP

FUTURE WALK

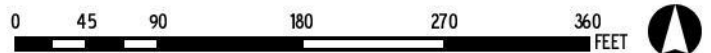
ROBESON HALL

COWGILL HALL



BIKE PARKING HUB #1: DEMONSTRATION SITE

- PROPOSED BIKE PARKING HUB SITE
- BIKE RACKS



BICYCLE PARKING MASTER PLAN
 DATA SOURCE: VIRGINIA TECH GIS DATABASE
 CREATED BY: KATHRYN ZERINGUE, 9.4.13