Amount Requested

$14,850

Proposal Summary

Emissions from transportation contribute over a third of total green-house gas and currently come almost completely from non-renewable sources. To shift UAF’s energy usage towards renewable sources, we want to increase bicycle use on and around campus by developing a library of bicycles that students can check out for the year/semester/afternoon. A new student bike shop operated through Outdoor Adventures would oversee the program. This service would be freely available to all students on a first come first serve basis each semester. We envision it benefiting the entire student body but particularly students who recently moved to the area (who may not have their own bicycles) and students just starting to consider bike commuting. The student bike shop would also benefit students with their own bikes who want to learn maintenance skills. The basic model is that we maintain a fleet of bikes that students can check out with their Polar Express cards. They will be responsible for the bike and will need to sign a liability waiver. For day or week checkouts helmets and locks will be provided. For semester long check outs, the student will need to show that they have a helmet and lock at the time of the check out. The student bike shop will be open several days a week to help students with maintenance and actually check the bikes out. Clinics and workshops will be offered on a monthly basis on bike/sustainability topics.

Technical Advisors and Collaborators

F. Stuart (Terry) Chapin
Professor of Ecology, Institute of Arctic Biology and Department of Biology and Wildlife,
terry.chapin@alaska.edu, 907-474-7922

Mark Oldmixon
Coordinator of Outdoor Adventures, mtoldmixon@alaska.edu, 907-474-6027

Budget Detail

Equipment
New bikes: $6,000
Option 1: 30 Nashbar AT-1 mountain bikes @ 199.00 each
(http://www.nashbar.com/bikes/Product_10053_10052_172828_-1_201511_10000_200516)
Option 2: 20 Trek Hybrid 700 @ $300 each (through Goldstream Sports)
Option 3: 20 Motobecane Elite @ $300 each
(http://www.bikesdirect.com/products/motobecane/motobecane_elite.htm)

Supplies
Tools
- Park Tool Professional Tool Kit $629.00
- Park Tool Delux Home Repair Stand $199.00
- Park Tool TS 2.2 professional wheel truing stand $172.00

Miscellaneous
- Helmets/Locks: $400
- Tires/tubes: $200
- Spare parts (kickstands, spokes, cables/housing etc.): $300

Pedal powered generator/sound system
- Bike training stand: $70
- Internally regulated 3-wire alternator: $75
- 150 Farad Ultracapacitor: $150
- 12V lawnmower battery: $30
- Speakers/equipment: $50
- DC/AC inverter: $50
- Odds and ends: $25

Services
- Annual employee salary: $4300 (Assistant C level, $10/hour, 8 hours/week)
- Outreach/advertising: $700
- Storage/facility cost: $1,500

Option 1. Purchase/construction of a new bike rack to store bikes between semesters
Option 2. Maintenance costs of facility elsewhere on campus

Total: $14,850

Budget Justification

The budget proposed above would result in the most effective free bike program at UAF, however an advantage of this proposal is that we have created a system that could be funded at several different levels depending on how many bikes will be purchased for the program during the first year.

New bikes:
As the program evolves it is our goal to use recycled and abandoned bikes (reducing waste and fossil fuel use simultaneously, fulfilling UAF’s mission of sustainability). However, the initial purchase of new bikes we are proposing is necessary and beneficial because it allows students to see an immediate effect from their funds and generally jumpstarts the whole program. Also this purchase also benefits local bicycle business. In the budget we provide three options for new bike purchase. We will evaluate which model best suits UAF’s need and work with local business to purchase the bikes. For the first year we will have 20-30 new bikes (purchased at a discounted cost), and a growing fleet of restored bikes.
acquired from parking services and various community partners/donors. Parking Services estimates donating 10-15 bikes a year. We have contacted Alan Tonne at the experiment farm where there is a store of approximately 50 bicycles in various conditions that are available for integration in the program.

**Tools:**
Tools will be necessary for the upkeep and maintenance of the bike fleet. They will also directly benefit the student by through the student bike shop. They will be available for public use under the direction of the Green Bikes’ employee two afternoons a week. They will also help the student employed by the program gain additional mechanical skills.

**Miscellaneous:**
Bike helmets are essential for safe riding and will be required gear for all students using this program. Each student checking out a bicycle will also assume responsibility for the bike (theft/damage), therefore locks are also required. Most spare parts will be salvaged from used bicycles, however, consumable goods (tires/tubes/lube) will need to be purchased. We will seek community partners wherever possible for gear sponsorship (discount or donations).

**Pedal powered generator/sound system:**
Everybody loves audience participation. This pedal-powered system will be an excellent public relations tool for UAF Green Bikes as well as the university as a whole. It would act as a new mascot of sustainability campus wide and would be available for checkout by UAF clubs for events/fundraisers. You can hook any bike up to it and create AC power that you can plug normal electronic devices into. Chancellor Rogers is making a speech about sustainability? Why not make it through a fossil-fuel free amplification system.

**Employee salary:**
To ensure the long-term success of this project, at least one part-time employee needs to oversee operations. The participation of Outdoor Adventures ensures that the program contributes and complements existing organizations, and will help incorporate it into the overall UAF institution and Fairbanks community. We are proposing that a student be paid for 8 hours per week annually through the Outdoor Adventure program. This student would be responsible for repairing donated bikes to get them in working order, general maintenance on the bike fleet, bike check-out, and organizing outreach/advertising. We believe that the combination of existing structure and opportunity for creativity and growth inherent in this position would directly benefit the student employed in a profound way. We have identified several community members active in bicycling/sustainability who could act as potential mentors for the student employee. Bicycle mechanic training will be provided through a local bike shop (further strengthening university-community relations).

**Outreach/advertising:**
Especially in the first year of the program, the student program coordinator will need to reach out to students on campus to increase the profile of the program. This budget item will include costs such as, printing, sign making, costs of bringing in experts for workshops and tabling in the Wood Center.
Storage/facility costs:  
Because a location to house the program has not been identified, this budget item is the least specific. We estimate this cost at $1,500.

Project Value

The benefits of the Green Bike program fall into three major categories: sustainable transportation, student health and sustainable communities.

Increasing bike use on campus will directly reduce UAF’s use of fossil fuel by replacing the car use with bike use. Built into this proposal is a mechanism to directly track the impact of this effort in pounds of carbon saved and miles of healthy personal travel pedaled. Along with direct gains in transportation efficiency, increasing biking will alleviate parking pressure, reducing the need for construction of supplementary parking structures and lots.

Facilitating increased bike use at UAF will allow students to participate in a globally significant reduction of carbon emissions and at the same time increase their personal health through increased aerobic activity. Biking directly increases student health and has been shown to increase academic performance. Along with the short term benefits, this program will introduce students to a healthy lifestyle that will enable them to live more sustainably even after graduation.

Our model of increasing bike use on campus will promote a more sustainable community. Biking increases one’s connection with the energy they use and subsequently the environment they move through. It will support local bicycle businesses directly by the purchase of bikes and accessories, and indirectly by increasing interest in cycling in the Fairbanks area. It will make UAF more attractive to new students, healthier for existing students and more sustainable campus wide.

There are many other benefits of implementing a program like this, including having bikes available for visiting students, faculty, or visitors and having a supply of bikes for summer sessions students.

Implementation Plan

Bikes would initially be acquired from the supply of salvaged bikes currently stored at a facility on the grounds of the botanical garden/experimental farm. We also plan on purchasing 20-30 new bikes to jumpstart the program (we have a quote from Goldstream Sports and will follow up with other shops to get the biggest bike for the buck). As far as continued supply of second-hand bikes, we have contacted parking services and they are willing to supply the program with abandoned bicycles removed from campus each spring (10-20 bikes). We will also advertise on Craigslist and through local bike shops asking for bicycle donations. This supply of used bikes will ensure continuation and sustainable growth of the program into the future. A part-time employee will restore and maintain bikes, manage checking the bikes in and out, run the student bike shop two afternoons a week, and organize the outreach seminars and workshops. This employee will be administered through Outdoor Adventures (benefitting from their already successful infrastructure and oversight). As mentioned in the project summary, students will be required to sign a liability waiver and wear helmets when using program bicycles. We
are working with Annette Chism (UAF Risk Manager) who will help us ensure that safety and liability issues are addressed. We have identified a location to store the bikes between semesters but are still looking for the ideal location to house the student bike shop where students check bikes out, and can go for information, repair, and supplies. Possible locations are in the basement of the Wood Center or somewhere else on lower campus. Continued funding for the program after the first year would be pursued through partnerships with UAF Summer Sessions, RISE, and other sources. To quantify impact of the program we will track bike use. Upon returning bicycles students will be given a questionnaire asking about their use and opinion about the value of the program. Results from these questionnaires will be published yearly.

Qualifications & Experience

The combined skills and experience of the proposal authors ensure that we will be able to carry out the implementation plan and follow through with all the steps outlined in the proposal. Several of the authors have long term experience biking and conducting bike maintenance putting us in a good position to evaluate the new and used bikes coming into the program. Ben Abbott has worked with a similar and very successful program at Utah State University (the USU Aggie Blue Bikes http://www.usu.edu/ucc/htm/programs/bikes) and has constructed two pedal powered generators. Michaela Swanson has worked as the Environmental Issues Task force leader for the student government of her undergraduate institution where they were given a budget of 15,000 to construct a greenroof on a campus building. Lorien Nettleton has experience and connections with the UAF and Fairbanks bicycling community. An equally important strength of this proposal is our collaboration with staff and faculty. Our proposal advisor, Terry Chapin, a professor in the Biology and Wildlife department and coordinator for the Resilience and Adaptation program has a long standing history of working toward sustainability on UAF campus, nationally and internationally. Additionally, we have been working with Mark Oldmixon of the Outdoor Adventure program. His experience in recreation activities for students, and with equipment rental had provided invaluable perspective for designing the program's structure and operations. His willingness to have the student program coordinator housed within the Outdoor Adventures program will allow the program to last at UAF far beyond our time here.

Group/Department

Institute of Arctic Biology
Department of Biology and Wildlife

Sustainability Area

Energy, Transportation, Purchasing, Waste Management, Sustainable Design, Education and Curriculum, Social Sustainability

Supporting Documentation (if provided) follows: