

2/23/12



MTSU Clean Energy Initiative Project Funding Request

There are five (5) sections of the request to complete before submitting. See <http://www.mtsu.edu/sga/cleanenergy.shtml> for funding guidelines. Save completed form and email to cee@mtsu.edu or mail to MTSU Box 57.

| 1. General Information | |
|-------------------------------------|------------------------|
| Name of Person Submitting Request | |
| Josh Stone | |
| Department/Office Campus Recreation | Phone # (Office) |
| | 615-904-8484 |
| MTSU Box # 556 | Phone # (Cell) |
| | 615-498-7831 |
| E-mail jrstone@mtsu.edu | Submittal Date 2/23/12 |

| 2. Project Categories (Select One) | |
|--|--------------------------------|
| Select the category that best describes the project. | |
| <input checked="" type="checkbox"/> | Energy Conservation/Efficiency |
| <input type="checkbox"/> | Sustainable Design |
| <input checked="" type="checkbox"/> | Alternative Fuels |
| <input type="checkbox"/> | Other |
| <input checked="" type="checkbox"/> | Renewable Energy |

| 3. Project Information |
|---|
| <p>a. Please provide a brief descriptive title for the project.</p> <p>b. The project cost estimate is the expected cost of the project to be considered by the committee for approval, which may differ from the total project cost in the case of matching funding opportunities. Any funding request is a 'not-to-exceed' amount. Any proposed expenditure above the requested amount will require a resubmission.</p> <p>c. List the source of project cost estimates.</p> <p>d. Provide a brief explanation in response to question regarding previous funding.</p> |
| 3a. Project Title: <i>Creating Middle Tennessee State University as a Bicycle Friendly University (MT-BFU)</i> |
| 3b. Project Cost Estimate <i>\$38,168.50</i> |
| 3c. Source of Estimate: <i>Collaborative estimates for different items include Murfreesboro Outdoor and Bike (bikes, parts, etc, Sign Pro (signs), Design System Builders (pavilions)</i> |

3d. If previous funding from this source was awarded, explain how this request differs? *NA*

4. Project Description

(Completed in as much detail as possible.)

- a. The scope of the work to be accomplished is a detailed description of project activities.
- b. The benefit statement describes the advantages of the project as relates to the selected project category.
- c. The location of the project includes the name of the building, department, and/or specific location of where the project will be conducted on campus.
- d. List any departments you anticipate to be involved. Were any departments consulted in preparation of this request? Who? A listing may be attached to this form when submitted.
- e. Provide specific information on anticipated student involvement or benefit.
- f. Provide information for anticipated future operating and/or maintenance requirements occurring as a result of the proposed project.
- g. Provide any additional comments or information that may be pertinent to approval of the project funding request.

4a. Scope: Work to be accomplished

Facilities *One component to make the MT-BFU possible is to provide proper facilities for maintaining, housing, and storing the bicycles and gear. The provisions for maintenance and storage (between rentals) are already established at the MTSU Recreational Center on campus. However, commuter stations are still needed. To increase incentive for bicycle commuting, proposed installation of two open-air pavilions, one at the Greenland and another at Rutherford parking lots. These 12x20 structures will house two bicycle racks and provide commuters with protection from the elements. To increase safety and visibility, solar panel powered lighting will be installed. Not only are solar panels a good investment regarding construction costs (i.e. running and electrical cables to power lighting in pavilions), but it also is a renewable energy source that would decrease the carbon footprint of the structure's maintenance. Due to proposed locations, it is important to note that MTSU Transportation Department does have a bicycle registration program that will alert authorities if a registered bicycle is sold to a pawnshop. Further, antitheft measures are also available through the campus police department.*

Equipment *Currently MTSU does not have a bicycle fleet. The proposed fleet*

purchase bicycle is a sturdy, easy maintenance single speed bicycle. Further, provisions required for maintenance such as spare parts, commuter baskets, and helmets are required. Signs to increase campus awareness on bicycle safety are also needed. Signs stationed at the proposed bicycle pavilions will be in view. For the largest effect, signs are proposed in the pavilions to capitalize on the newness of the structure to promote the education of commuters in the surrounding area. In the future, proposed bicycle racks installed along routes that direct bicycle traffic away from the sidewalks with high pedestrian traffic paths, such as the sidewalk located from Peck Hall to the new Student Union Center, would decrease interactions and thus decrease pedestrian-bicycle accidents.

4b. Scope: Benefit Statement

The proposed MT-BFU is intended to accomplish the LAB guidelines by implementing through multifaceted approach centered on education, encouragement, facilities, and having available equipment for student, faculty and staff use. By creating a more bicycle friendly university, MTSU will be decrease it's carbon footprint, while simultaneously encouraging a more physically active lifestyle in a safe environment. By increased number of bicycling commuters on campus, MTSU will lessen the burden of automobile traffic congestion that tends to plague campus. Through establishing new, safe bike routes and offering campus-wide courses on bicycle safety, MTSU can decrease the burden of pedestrian-bike congestion while also decreasing the frequency of bicycle-automobile related accidents on campus

4. Project Description (continued)

4c. Location of Project (Building, etc.) *The pavilions will be located in the Greenland Parking lot and the Rutherford Parking lot. The bicycles for rent will be housed at the Campus Recreation Center, as well as the full service bike repair shop.*

4d. Participants and Roles

Patti Miller in Campus Planning and Ron Malone in Transportation were consulted and in agreement for the creation of this bicycle master plan for MTSU. Campus Recreation's Outdoor Pursuits Director serves a very large role in bicycle fleet management and checkout and also in evaluation and analysis of the bike program.

4e. Student participation and/or student benefit

This program would be setup based upon the program in existence at Stanford University. Stanford University, which has a platinum status as a Bicycle Friendly University by the League of American Bicyclists, is the best bicycle program to model. Stanford University's automobile single-commuter (per car) rate dropped 24% from 2002 to 2010. This change came because of a large-scale effort to increase bike commute rate; the rate for bicycle commuters increased 21.7% (Department of Land, Building & Real Estate Stanford University Parking & Transportation). Student participation would be expected to increase through the availability of bicycle rentals that are economically priced and through safe housing for bicycles on campus. In addition, a strong educational and marketing program through Campus Recreation would be created to ensure student participation.

The direct student benefit would be the ease of commuting through campus while creating a healthy and active lifestyle. Bicyclist-motorist interaction would become more safe through education, and traffic would decrease on campus which would help lower our carbon footprint.

4f. Future Operating and/or Maintenance Requirements

Future operating and maintenance requirements regarding the bicycle fleet would be managed by MTSU Campus Recreation. This includes upkeep and maintenance of bikes, helmets, and locks.

Pavilion upkeep and maintenance would be a joint cooperative between grounds and the volunteerism of the Middle Tennessee Outdoor Pursuits program at Campus Rec. This would include any painting, cleaning, and site maintenance of the pavilions. The pavilions will be created from sustainable materials and a sustainable design which would ensure minimum maintenance and upkeep.

Also, based upon the success of this program, future funding through grants will be sought after to build more pavilions across campus for bicycle housing.

4g. Additional Comments or Information Pertinent to the Proposed Project

Please see attached report with the master plan and benefit of this program

5. Project Performance Information

Provide information if applicable.

- Provide information on estimated annual energy savings stated in units such as kW, kWh, Btu, gallons, etc.
- Provide information on estimated annual energy cost savings in monetary terms.
- Provide information on any annual operating or other cost savings in monetary terms. Be specific.
- Provide information about any matching or supplementary funding opportunities that are available. Identify all sources and explain.

5a. Estimated Annual Energy Savings (Estimated in kW, kWh, Btu, etc.)

With an estimated 11,000 cars a day parking on campus (per Ron Malone) consuming roughly 1/5 gallon of gas, an estimated 2200 gallons of gas is consumed on campus daily. The goal of this program is to reduce the number of cars on the interior of campus by 20%, which would reduce the number of daily gallons used by students driving around looking for parking spots and idling 440 gallons of fuel daily. This would reduce carbon emissions by MTSU commuters 8360lbs daily.

As a multiplier, MTSU has 70+ days a semester of school. This would save 30,800 gallons of gas and 585,200lbs of carbon emissions per semester.

5b. Annual Energy COST Savings (\$)

*In saving over 30,800 gallons of gas through alternative transportation, this program could save **\$100,100** (est. that gas is \$3.25 per gallon) per semester in student consumed fuel costs.*

5c. Annual Operating or Other Cost Savings. Specify. (\$)

*The true annual cost savings in this plan is reflected through student/faculty gas consumption. Although there is no operating cost savings for MTSU directly, total consumptive gas savings annually will be over **\$200,000**. In addition, through bicycle education and increased bicycle riding, there will be maintenance cost savings on parking lots and repaving.*

5d. Matching or Supplementary Funding (Identify and Explain)

Campus Recreation will provide supplementary funding for student bike mechanics and space for a full service bike shop to complement increased bicycle traffic. Other grants are available through the League of American Bicyclists and Bikes Belong and they will be sought after.

Linda Hardymon

From: Josh Stone [Josh.Stone@mtsu.edu]
Sent: Thursday, February 23, 2012 10:05 AM
To: cee@mtsu.edu
Subject: Green Energy Grant Proposal
Attachments: MTSU Bike grant .pdf; ~Sean Energy Project Funding Request 2012 bikes.pdf

Greetings!

Attached you will find my submittal for the Green Energy Grant. Also, in addition, I have included a formal proposal that should be able to give a more in depth look at the proposal and should answer any questions. Please feel free to contact me with any questions. I look forward to your reply and thank you sincerely for taking the time to do this.

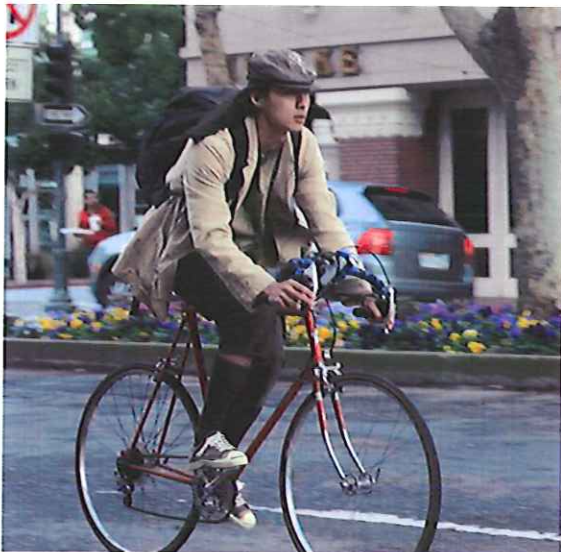
Sincerely,
Josh Stone

Josh Stone
Associate Director of Recreation Programs
MTSU Campus Recreation
615-904-8484
Fax: 615-898-5568



MT-BFU

Middle Tennessee State University's Progression Toward Being a Bicycle Friendly University (MT-BFU)



Prepared for: Green Energy Committee

Prepared by: Josh Stone

February 20, 2012

Proposal number: 123-4567



MT-BFU

Objective

The Middle Tennessee State University (MTSU) Bike Friendly University (MT-BFU) is a multifaceted program. The purpose of the MT-BFU is to establish bicycling as a safe and supported means of transportation on campus for student, faculty, and staff. With proper implementation, MTSU will qualify as a Bicycle Friendly University (BFU) through the League of American Bicyclists (LAB), which is an honorable designation that recognizes universities that embrace bicycling as a means of transportation for their respective communities (League of American Bicyclists, 2012). Please see Attachment A for the progress of MTSU in meeting the LAB BFU guidelines.

The proposed MT-BFU is intended to accomplish the LAB guidelines by implementing through multifaceted approach centered on education, encouragement, facilities, and having available equipment for student, faculty and staff use. By creating a more bicycle friendly university, MTSU will be decrease it's carbon footprint, while simultaneously encouraging a more physically active lifestyle in a safe environment. By increased number of bicycling commuters on campus, MTSU will lessen the burden of automobile traffic congestion that tends to plague campus. Through establishing new, safe bike routes and offering campus-wide courses on bicycle safety, MTSU can decrease the burden of pedestrian-bike congestion while also decreasing the frequency of bicycle-automobile related accidents on campus.

Solution

Facilities One component to make the MT-BFU possible is to provide proper facilities for maintaining, housing, and storing the bicycles and gear. The provisions for maintenance and storage (between rentals) are already established at the MTSU Recreational Center on campus. However, commuter stations are still needed. To increase incentive for bicycle commuting, proposed installation of two open-air pavilions, one at the Greenland and another at Rutherford parking lots. These 12x20 structures will house two bicycle racks and provide commuters with protection from the elements. To increase safety and visibility, solar panel powered lighting will be installed. Not only are solar panels a good investment regarding construction costs (i.e. running and electrical cables to power lighting in pavilions), but it also is a renewable energy source that would decrease the carbon footprint of the structure's maintenance. Due to proposed locations, it is important to note that MTSU Transportation Department does have a bicycle registration program that will alert authorities if a registered

MT-BFU



MT-BFU

bicycle is sold to a pawnshop. Further, antitheft measures are also available through the campus police department.

Equipment Currently MTSU does not have a bicycle fleet. The proposed fleet purchase bicycle is a sturdy, easy maintenance single speed bicycle. Further, provisions required for maintenance such as spare parts, commuter baskets, and helmets are required. Signs to increase campus awareness on bicycle safety are also needed. Signs stationed at the proposed bicycle pavilions will be in view. For the largest effect, signs are proposed in the pavilions to capitalize on the newness of the structure to promote the education of commuters in the surrounding area. In the future, proposed bicycle racks installed along routes that direct bicycle traffic away from the sideways with high pedestrian traffic paths, such as the sidewalk located from Peck Hall to the new Student Union Center, would decrease interactions and thus decrease pedestrian-bicycle accidents.

Education/Encouragement Beyond the signs designated for the pavilions, monthly bicycling educational clinics by Middle Tennessee Outdoor Pursuits (MTOPI), as well as bicycle rules insert into every campus transportation handbook will be provided to students, faculty and staff. MTOPI clinics will focus on bicycle safety, proper bicycle maintenance, as well as cyclists' awareness (i.e. proper clothing for the weather, hydration and energy food consumption). Further, part of the MTSU general education requirements physical education classes are offered in bicycling (beginner, intermediate levels). With every bicycle rental from MTOPI, MT-BFU Bike Staff Form to include a Pledge of abiding by bicycle safety rules, as well as a Helmet Pledge. These types of pledges have been shown at Stanford University as an effective means of bike-user awareness and increase the cyclist's commitment to bicycle safety. Future plans are to incorporate credit/non-credit classes to educate motorists and bicyclists to provide a more comprehensive bicycle safety and education program. Lastly, campus law enforcement officers are already routinely educated about bicycling safety regulations and are agreeable to the tentative MT-BFU plan.



MT-BFU

Green Energy and BFU Research

Both dimensions of the MT-BFU lower climate emissions and improve carbon footprint having a greater affect on the environmental. Approximately 19 pounds of carbon are released from every gallon of gasoline consumed by an automobile (Department of Land, Building & Real Estate Stanford University Parking & Transportation Services). Stanford University, which has a platinum status BFU by the LAB, is the best bicycle program to model. Stanford University's automobile single-commuter (per car) rate dropped 24% from 2002 to 2010. This change came because of a large-scale effort to increase bike commute rate; the rate for bicycle commuters increased 21.7% (Department of Land, Building & Real Estate Stanford University Parking & Transportation).

As part of the MT-BFU comprehensive approach for a sustainable bicycle community on campus, an on-going research based approach to analyzing the data produced by the MT-BFU. The following is the areas of measuring the effectiveness of the plan:

Evaluation of MT-BFU Plan

- Have a working fleet of 15 single speed bicycles for rent
- Measure how many students and staff are buying rental card for \$25, which allows for rentals of 48-hour period at any time for during a semester.
- Quantify the number of students and staff that renew rentals over consecutive days (based upon bike availability).
- Determine how many participants sign the MT-BFU Pledge to follow all rules and regulations based on bike safety on campus
- Helmet commitment, and the number of participants who take advantage of purchasing helmets through MTOP.
- Follow up with how many renters said that they used a helmet and bike lock during rental period to determine the effectiveness of the MT-BFU Helmet Pledge.
- Determine the dissemination offering of gear, education proper use safety to include protective gear, bike routes for commuting on and near campus with designated bike racks, pavilions addressed, vehicle (road) and



MT-BFU

pedestrian (walkways) safety, bike maintenance weatherizing, emergency maintenance, as well as rider gear safety for weather.

A comprehensive approach is required to make a sustainable and fortuitous MT-BFU plan. Contacts and connections have been made with on-campus departmental personal who can make affectively implement policy in Transportation Services, Campus Police, Campus Planning, etc.

Budget

First Year

| | Quantity | Cost | Total |
|---|----------|----------|------------|
| Fleet of commuter bikes for rent | 15 | \$220.00 | \$3,300.00 |
| Locks for bike | 10 | \$17.25 | \$172.50 |
| Helmets for bike | 10 | \$25.00 | \$250.00 |
| Rear baskets | 10 | \$23.50 | \$235.00 |
| Rack for baskets | 10 | \$23.50 | \$235.00 |
| | | | |
| Park professional tool kit | 1 | \$725.00 | \$725.00 |
| Spare Tubes | 20 | \$3.50 | \$70.00 |
| Spare wheelsets | 5 | \$100.00 | \$500.00 |
| Spare chains | 10 | \$4.50 | \$45.00 |
| Spare brake pads | 10 | \$6.85 | \$68.50 |
| Spare cables | 10 | \$3.75 | \$37.50 |
| | | | |
| | | | |
| Bicycle pavillions | 2 | \$12,500 | \$25,000 |
| Rules of bicycling signs | 2 | \$105.00 | \$210.00 |
| Bicycle road map signs | 2 | \$105.00 | \$210.00 |
| New racks for inside the bicycle pavillions | 8 | \$495.00 | \$3,960.00 |
| Proper locking sign | 2 | \$105.00 | \$210.00 |
| Lighting for bicycle pavillions | 4 | \$130.00 | \$520.00 |
| Research and measurement | | | \$2,400.00 |

TOTAL

\$38,148.50



MT-BFU

References

- Frattini, K. (2011). Stanford University tops in bike-friendliness. *Bike Radar.com*. Retrieved from <http://www.bikeradar.com/news/article/stanford-university-tops-in-bike-friendliness--29682>
- Brown, T. (2011). University Receives Biking 'Platinum' Award. *The Stanford Daily*. Retrieved from <http://www.stanforddaily.com/2011/04/01/university-receives-biking-'platinum'-award/>
- Department of Land, Building & Real Estate Stanford University Parking & Transportation Services. Commute Cost & Carbon Emissions Calculator. Retrieved from http://transportation.stanford.edu/alt_transportation/calculator.shtml
- Department of Land, Building & Real Estate Stanford University Parking & Transportation Services. *Alternative Transportation: Bicycling at Stanford*. Retrieved from <http://transportation.stanford.edu/Directions.shtml>
- League of American Bicyclists (2012). *The League of American Bicyclists*. Retrieved from <http://www.bikeleague.org/>



MT-BFU

ATTACHMENT A: LAB BFU

Engineering

1. Does your campus have a comprehensive, connected, and well-maintained bicycling networks? **No, there is no set path for bicycles, and the road is considered dangerous to many due to lack of knowledge from drivers and incidents arising from this.**
2. Is bike parking readily available throughout the campus? **There are a lot of bike racks, but it would be an asset to have covered bike parking so that students can ride even in the rain.**
3. Is the university easily accessible by bike? **Yes and no. There is a lot of student housing within 1 mile of campus, but there is not much**



MT-BFU

for bike lanes. Once bicyclists get on campus, they find it hard to ride due to congestion and ignorance of bike laws

Education

1. Does the college or university offer bicycling education classes for students and staff? **Not at all. This could be covered with a 1hr credit course on bike safety or even by MTOP hosting various bike safety classes.**
2. Are there classes for campus motorists on how to share the road with cyclists? **No, but there should be.**

Encouragement

1. Does your college or university have an up to date bike map? **No**
2. Are there incentives offered for students and staff that commute by bike? **No, but there is great room for incentive programs. Reduced parking passes, late start on the work day, etc.**
3. Is there an active bicycle advocacy group at the college or university? **Yes. It is small, but the interest is huge...it just needs organization.**
4. Is there on campus bike center for rentals and repairs? **Yes**

Enforcement

1. Do campus safety/law enforcement officers receive training on the rights and responsibilities of all road users? **I believe so**
2. Does your campus have law enforcement or other public safety officers on bikes? **Yes**
3. Is there a program on to campus to prevent bike theft? **Yes**
4. Is there an institutional plan or program to reduce bicyclist crashes? **No**
5. Does your college or university have a current comprehensive bicycle plan? **No**
6. Does your college have a bicycle program manager? **No**