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 Charles White with Students for Environmental Action	
Department/Office Student	Phone # (Office) N/A
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E-mail cww2n@mtmail.mtsu.edu	Submittal Date February 25, 2011

2. Project Categories (Select One)

Select the category that best describes the project.

X	Energy Conservation/Efficiency		Sustainable Design
	Alternative Fuels		Other
	Renewable Energy		

3. Project Information

a. Please provide a brief descriptive title for the project.
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.**
c. List the source of project cost estimates.
d. Provide a brief explanation in response to question regarding previous funding.

3a. Project Title

Creating Beauty, Oxygen, and Saving Energy with Trees

3b. Project Cost Estimate

$150-200 depending on how many trees are acceptable to plant

3c. Source of Estimate

http://www.arborday.org/shopping/trees/trees.cfm

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

N/A

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

Planting trees on campus, mulching, etc.

Silver Maple, Red Sunset Maple, Northern Catalpa, Kentucky Coffeetree, Little Leaf Linden, Live Oak, Northern Red Oak, Red Delicious, Yellow Delicious, 2 Kieffer Pears, as well as a free Red Maple, and ten other free trees.

We may also need 20 or so Rootmaker Knit bags at $2 a piece to aid trees in establishing their roots, and transplanting them in a couple seasons. This can be decided later.

Mulch can be gotten from city of Murfreesboro for FREE!

We will be ordering these trees from the Arbor Day Foundation of which I am a member so I receive discounts. I am also receiving ten free trees from them in the next couple of months as a reward for becoming a member. We also get a free Red Maple with our order. These will be great to plant during Earth Week as a part of MTSU's move toward being a more eco-conscious campus.

4b. Scope: Benefit Statement

Resource for information:
http://www.arborday.org/calculator/index.cfm

Benefits for specific trees can be determined with the above site if necessary but have been left out in order to save space.

Urban stormwater runoff (or "non-point source pollution") washes chemicals (oil, gasoline, salts, etc.) and litter from surfaces such as roadways and parking lots into streams, wetlands, rivers and oceans. The more impervious the surface (e.g., concrete, asphalt, rooftops), the more quickly pollutants are washed into our community waterways. Drinking water, aquatic life and the health of our entire ecosystem can be adversely affected by this process.

Trees act as mini-reservoirs, controlling runoff at the source. Trees reduce runoff by:

Intercepting and holding rain on leaves, branches and bark

Increasing infiltration and storage of rainwater through the tree's root system

Reducing soil erosion by slowing rainfall before it strikes the soil

Trees modify climate and conserve building energy use in three principal ways :

Shading reduces the amount of heat absorbed and stored by buildings.

Evaporation converts liquid water to water vapor and cools the air by using solar energy that would otherwise result in heating of the air.

Tree canopies slow down winds thereby reducing the amount of heat lost from a home, especially where conductivity is high (e.g., glass windows).

Strategically placed trees can increase home energy efficiency. In summer, trees shading east and west walls keep buildings cooler. In winter, allowing the sun to strike the southern side of a building can warm interior spaces. If southern walls are shaded by dense evergreen trees there may be a resultant increase in winter heating costs.

Air pollution is a serious health threat that causes asthma, coughing, headaches, respiratory and heart disease, and cancer. Over 150 million people live in areas where ozone levels violate federal air quality standards; more than 100 million people are impacted when dust and other particulate levels are considered "unhealthy." **We now know that the urban forest can mitigate the health effects of pollution by:**

Absorbing pollutants like ozone, nitrogen dioxide and sulfur dioxide through leaves

Intercepting particulate matter like dust, ash and smoke

Releasing oxygen through photosynthesis

Lowering air temperatures which reduces the production of ozone

Reducing energy use and subsequent pollutant emissions from power plants

It should be noted that trees themselves emit biogenic volatile organic compounds (BVOCs) which can contribute to ground-level ozone production. This may negate the positive impact the tree has on ozone mitigation for some high emitting species (e.g. Willow Oak or Sweetgum). However, the sum total of the tree's environmental benefits always trumps this negative.

This year your _____ tree will reduce atmospheric carbon by _____ pounds.

How significant is this number? Most car owners of an "average" car (mid-sized sedan) drive 12,000 miles generating about 11,000 pounds of CO2 every year. A flight from New York to Los Angeles adds 1,400 pounds of CO2 per passenger. Trees can have an impact by reducing atmospheric carbon in two primary ways (see figure at left):

They sequester ("lock up") CO2 in their roots, trunks, stems and leaves while they grow, and in wood products after they are harvested.

Trees near buildings can reduce heating and air conditioning demands, thereby reducing emissions associated with power production.

Combating climate change will take a worldwide, multifaceted approach, but by planting a tree in a strategic location, driving fewer

miles, or replacing business trips with conference calls, it's easy to see how we can each reduce our individual carbon "footprints."

For more info visit: http://www.fs.fed.us/psw/programs/cufr/

4. Project Description (continued)

4c. Location of Project (Building, etc.)

Various Locations around Campus

4d. Participants and Roles

Campus Planning needs to be consulted about good locations.

I will undertake that effort.

Students for Environmental Action

-Planting and Upkeep

4e. Student participation and/or student benefit

Students will be able to be involved with the growth and development of these trees and exercise their green thumbs with what will become SEA's ongoing, on-campus project for years to come.

Students will also benefit from the shade of these trees, diversity of wildlife they will attract, as well as the fruit that some of them will produce.

4f. Future Operating and/or Maintenance Requirements

Trees will need to be pruned and may require some additional mulch, but this will all be undertaken by Students for Environmental Action.

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

I foresee this being an extremely positive thing for campus that will inevitably save us a good deal of money for stormwater runoff, energy conservation, carbon sequestration, etc.

5. Project Performance Information

Provide information if applicable.

a. Provide information on estimated annual energy savings stated in units such as kW, kWh, Btu, gallons, etc.
b. Provide information on estimated annual energy cost savings in monetary terms.
c. Provide information on any annual operating or other cost savings in monetary terms. Be specific.
d. 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.)

This is difficult to say because the amount will change and grow each year as each tree grows. Each tree also has a different level of benefit.

5b. Annual Energy COST Savings ($)

Only a $1-2 a year at first per tree, but anywhere from $30-100 after each tree reaches full size for many years to come.

5c. Annual Operating or Other Cost Savings. Specify. ($)
N/A
5d.Matching or Supplementary Funding (Identify and Explain)
N/A