

MTSU Sustainable Campus Fee Funding Request Form

The Sustainable Campus Fee (SCF) supports projects that advance sustainability at MTSU. This form allows students, faculty, and staff to propose initiatives that contribute to a greener campus through energy efficiency upgrades, infrastructure improvements, education, research, and efforts to enhance campus biodiversity.

There are 5 sections to the application: Section I: Contact Information, Section II: Project Category, Section III: Project Description, Section IV: Project Cost, and Section V: Project Performance Information (For applicable projects).

The Sustainable Campus Fee is administered through a partnership with the Office of Student Affairs, the Center for Student Involvement & Leadership, and the Center for Energy and Sustainability (CES).

Date Friday, September 25, 2026

Request Number **SCFR27000065**

1. Name Carrie Pavel

Email carrie.pavel@mtsu.edu

Phone Number (615) 898-5723

SECTION II: Project Category

Please note that all proposed projects will have to comply with MTSU campus guidelines and recommendations.

1. Select the category that best describes the project. (Select One - See Descriptions Below)

Energy Conservation/Efficiency

CATEGORY DESCRIPTIONS

Energy Conservation/Efficiency - (e.g. installing LED light bulbs, adding insulation to walls, replacing old appliances with energy-efficient models, installing programmable lighting, etc.)

Renewable Energy - (e.g. implementing projects to harness naturally replenishing sources like wind, water, and sunlight to generate electricity - like solar-powered picnic tables, etc.)

Sustainable Transportation - (e.g. installing covered bike racks, replacing fuel vehicles with electric vehicles, etc.)

Alternative Fuels - (e.g. setting up electric vehicle charging stations, implementing hybrid or electric vehicles, purchasing electric or propane power equipment, etc.)

Recycling - (e.g. purchasing recycling bins, improving signage, recycling difficult materials, etc.)

Waste Reduction - (e.g. establishing a reuseable to-go container program, reducing food waste, installing waterbottle filling stations, etc.)

Water Conservation - (e.g. purchasing rain barrels, creating a rain garden, switching to low-flow water fixtures, installing low-flow water valves, etc.)

Biodiversity - (e.g. planting pollinator garden, tree planting, installing bird boxes, etc.)

Education - (e.g. hosting a sustainability fair to raise awareness about green practices, hosting bike repair and/or safety workshops)

Research and Innovation - (e.g. researching the effects of microplastics, solar feasibility study, etc.)

SECTION III: Project Description

Please include as much detail as possible in this section. The more information you provide, the better equipped the adjudication committee will be to fully understand your request and make an informed decision.

To expand a text box, click and drag the two diagonal lines in the bottom-right corner. This allows you to adjust the size and view of your content as you type.

1. Project Title

Ned McWherter Learning Resources Center - First floor hallways, lobbies, and classrooms (LRC 107, 108, 109, 112)

2. Scope: Work to be accomplished

The scope of work includes relamping (16) 2x2 and (82) 2x4 fluorescent trough light fixtures: replacing (204) 4' 32w tubular fluorescent lamps with 4' 14w long-life tubular LED lamps, and (32) 2' 31w U-bend fluorescent lamps with 2' 13w long-life tubular LED lamps.

3. Scope: Benefit Statement

The current 32w lamps demand 6,528w over 3,456 hours of annual operation, with a total energy usage of 22,560 kWh. The new 14w LED lamps require only 2,856w over the same period of annual operation, resulting in a total energy usage of 9,871 kWh. The current 31w lamps demand 992w over 3,456 hours of annual operation, with a total energy usage of 3,428 kWh. The new 13w LED lamps require only 416w over the same period of annual operation, resulting in a total energy usage of 1,438 kWh.

The cumulative energy savings of the project is a reduction of total annual energy demand of 14,679,000 watts of electricity and a reduction in total annual energy usage of 14,679 kilowatt hours. This amounts to an annual energy cost savings of \$1,395.

4. Location of Project

Ned McWherter Learning Resources Center (LRC) first floor lobbies, hallways, and LRC 107, LRC 108, LRC 109, and LRC 112 instructional spaces. The retrofit would benefit the College of Basic and Applied Sciences (Interior Architecture), the College of Education, and the College of Media and Entertainment, including the hallway leading to the newly remodeled Center for Educational Media, where MTSU's monthly Out of the Blue is filmed.

5. Participants and Roles

Building Services will purchase and install the new lamps and any associated accessories (e.g.- retrofit kits).

6. Student Participation in the project and/or Student Benefit from the project

Materials and Finishes classroom laboratories, a Materials and Finishes Sampling Library, and a Lighting Laboratory are currently housed in LRC 107 and LRC 109, respectively. These comprise educational environments for which lighting quality and color accuracy are important. Interior Architecture students currently use ambient fluorescent classroom lighting to evaluate materials and finishes samples. This work would generally require lighting of a high Color Rendition Index (CRI) to accurately render the color and detail in samples. The current lighting (T8 fluorescent lamps) have an estimated CRI of 75/100. The new LED lamps would have an estimated CRI of 90-95/100 with an expected improvement for sampling analysis tasks.

Incidentally, the relamping project itself would have direct educational value: IDES 3330: Lighting, Electrical, and Environmental Systems is taught annually in LRC 108 or LRC 109. One of the course projects is to complete a Cost Benefit Analysis on two comparable lighting systems (traditionally a fluorescent versus LED system). This makes the retrofit a great experiential learning opportunity for students.

7. Future Operating and/or Maintenance Requirements

On average, LED lamps last up to five times longer than fluorescent lamps, resulting in a significant reduction in the need for regular maintenance. Signs of end-of-life of an LED is a reduction in luminous flux rather than the characteristic flicker (failed ballast) or color shift associated with fluorescent lamps. Due to their slow lumen depreciation, LEDs commonly remain in use even past their rated life, which is typically measured as a decline of 70% or more of their initial lumen output. Decreased need for maintenance combined with the potential to extend maintenance intervals will further reduce the overall operating costs of the system cited above.

8. Additional Comments or Information Pertinent to the Proposed Project

Kristin England completed a Relamping Savings matrix for this proposal that can be found attached. Data from this matrix is incorporated in the descriptions above.

Any supporting documents or attachments will be on the pages following the SCF Request.

Note, all projects are expected to be completed by December 31, 2026.

SECTION IV: Project Costs

1. Project Cost Estimate 10695

2. Source of Estimate

Kristin England, Facilities Services Department

3. Has previous funding from this source been awarded?

No

If Yes, please explain how this request differs from previous funding request.

SECTION V: Project Performance Information

If your project is expected to reduce energy consumption (e.g. through lighting upgrades or HVAC improvements etc.), please provide an estimate of potential savings. Feel free to contact the Center for Energy and Sustainability for help making these calculations at ces@mtsu.edu.

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

14,679 kWh

2. Annual Energy COST Savings (\$)

\$1,395

3. Annual Operating Cost Savings or Other Cost Savings. Specify in dollar amount, if applicable. (\$)

The total operating cost savings is projected to be \$2,157 per year.

4. Matching or Supplementary Funding (Identify and explain, if applicable)

No matching or supplemental funding. Facilities Services to provide equipment and expertise.

Acknowledgment

I acknowledge that a project summary and photo must be submitted, if I am awarded funding and upon completion of the project.

Supporting Documentation or Attachments if provided.



Outlook

RE: Assistance with Sustainable Campus Fee grant calculation

From Kristin England <Kristin.England@mtsu.edu>

Date Fri 9/25/2026 3:46 PM

To Carrie Pavel <Carrie.Pavel@mtsu.edu>

No, that was a typo on my part. Sorry about that. I have corrected it now. Your energy savings went up



Relamping Savings

Data Entry - Bulb 1

Current Bulb Energy Usage	32 W
Current # of Bulbs	124 bulbs
Total Current Energy Demand	3,968 W
New Bulb Energy Usage	14 W
New # of Bulbs	124 bulbs
Total New Energy Demand	1,736 W
Hours Used per Day	12 hours
Days Used per Week	6 days
Weeks Used per Year	48 weeks
Current Energy Usage	13,713 kWh
New Energy Usage	6,000 kWh

Data Entry - Bulb 2

Current Bulb Energy Usage	31 W
Current # of Bulbs	32 bulbs
Total Current Energy Demand	992 W
New Bulb Energy Usage	13 W
New # of Bulbs	32 bulbs
Total New Energy Demand	416 W
Hours Used per Day	12 hours
Days Used per Week	6 days
Weeks Used per Year	48 weeks
Current Energy Usage	3,428 kWh
New Energy Usage	1,438 kWh

Data Entry - Bulb 3

Current Bulb Energy Usage	32 W
Current # of Bulbs	80 bulbs
Total Current Energy Demand	2,560 W
New Bulb Energy Usage	14 W
New # of Bulbs	80 bulbs
Total New Energy Demand	1,120 W
Hours Used per Day	12 hours
Days Used per Week	6 days
Weeks Used per Year	48 weeks
Current Energy Usage	8,847 kWh
New Energy Usage	3,871 kWh

Results

Current Demand	7,520 W
New Demand	3,272 W
Current Energy Usage	25,989 kWh
New Energy Usage	11,308 kWh
Energy Saved Annually	14,681 kWh
Cost per kWh	\$0.095 /kwh
Current Energy Usage Cost	\$2,469
New Energy Usage Cost	\$1,074
Energy Cost Saved Annually	\$1,395

Thanks,
Kristin England

From: Carrie Pavel <Carrie.Pavel@mtsu.edu>

Sent: Friday, September 25, 2026 3:44 PM

To: Kristin England <Kristin.England@mtsu.edu>

Subject: Re: Assistance with Sustainable Campus Fee grant calculation

One more question: the Data Entry- Bulb 1 New # of Bulbs field lists 162, which is 38 more bulbs than what is in the current fixture. Is this correct?

Data Entry - Bulb 1	
Current Bulb Energy Usage	32 W
Current # of Bulbs	124 bulbs
Total Current Energy Demand	3,968 W
New Bulb Energy Usage	14 W
New # of Bulbs	162 bulbs
Total New Energy Demand	2,268 W
Hours Used per Day	12 hours
Days Used per Week	6 days
Weeks Used per Year	48 weeks
Current Energy Usage	13,713 kWh
New Energy Usage	7,838 kWh

Carrie H. Pavel, Ph.D, Assoc. AIA

Assistant Professor, Program Director, Interior Architecture

(615) 898.5723 | LRC 130 | carrie.pavel@mtsu.edu

Middle Tennessee State University

1301 E. Main Street, PO Box 0024, Murfreesboro, TN 37130



[Book time to meet with me](#)

From: Kristin England <Kristin.England@mtsu.edu>

Sent: Friday, September 25, 2026 3:27 PM

To: Carrie Pavel <Carrie.Pavel@mtsu.edu>

Cc: Nathan Wahl <Nathan.Wahl@mtsu.edu>; Terri Carlton <Terri.Carlton@mtsu.edu>

Subject: RE: Assistance with Sustainable Campus Fee grant calculation

Carrie,

Below are the fixture and bulb counts. I have also added a picture of the energy saving calculations if you want to add this as an attachment to the application.

- 20 2' x 4' four bulb fixtures = 80 4' bulbs
- 62 2' x 4' two bulb fixtures = 124 4' bulbs
- 16 2' x 2' two bulb fixtures = 32 2' bulbs

Relamping Savings

Data Entry - Bulb 1

Current Bulb Energy Usage	32 W
Current # of Bulbs	124 bulbs
Total Current Energy Demand	3,968 W
New Bulb Energy Usage	14 W
New # of Bulbs	162 bulbs
Total New Energy Demand	2,268 W
Hours Used per Day	12 hours
Days Used per Week	6 days
Weeks Used per Year	48 weeks
Current Energy Usage	13,713 kWh
New Energy Usage	7,838 kWh

Data Entry - Bulb 2

Current Bulb Energy Usage	31 W
Current # of Bulbs	32 bulbs
Total Current Energy Demand	992 W
New Bulb Energy Usage	13 W
New # of Bulbs	32 bulbs
Total New Energy Demand	416 W
Hours Used per Day	12 hours
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Current Energy Usage	3,428 kWh
New Energy Usage	1,438 kWh

Data Entry - Bulb 3

Current Bulb Energy Usage	32 W
Current # of Bulbs	80 bulbs
Total Current Energy Demand	2,560 W
New Bulb Energy Usage	14 W
New # of Bulbs	80 bulbs
Total New Energy Demand	1,120 W
Hours Used per Day	12 hours
Days Used per Week	6 days
Weeks Used per Year	48 weeks
Current Energy Usage	8,847 kWh
New Energy Usage	3,871 kWh

Results

Current Demand	7,520 W
New Demand	3,804 W
Current Energy Usage	25,989 kWh
New Energy Usage	13,147 kWh
Energy Saved Annually	12,842 kWh
Cost per kWh	\$0.095 /kwh
Current Energy Usage Cost	\$2,469
New Energy Usage Cost	\$1,249
Energy Cost Saved Annually	\$1,220

Thanks,
Kristin England

From: Carrie Pavel <Carrie.Pavel@mtsu.edu>

Sent: Friday, September 25, 2026 3:20 PM

To: Kristin England <Kristin.England@mtsu.edu>

Cc: Nathan Wahl <Nathan.Wahl@mtsu.edu>; Terri Carlton <Terri.Carlton@mtsu.edu>

Subject: Re: Assistance with Sustainable Campus Fee grant calculation

Kristin,

What was the total count of fixtures to be replaced? I'd just want to add that information if we have it.

Carrie H. Pavel, Ph.D, Assoc. AIA

Assistant Professor, Program Director, Interior Architecture

(615) 898.5723 | LRC 130 | carrie.pavel@mtsu.edu

Middle Tennessee State University

1301 E. Main Street, PO Box 0024, Murfreesboro, TN 37130



[Book time to meet with me](#)

From: Carrie Pavel <Carrie.Pavel@mtsu.edu>

Sent: Monday, September 21, 2026 12:27 PM

To: Kristin England <Kristin.England@mtsu.edu>

Cc: Nathan Wahl <Nathan.Wahl@mtsu.edu>; Terri Carlton <Terri.Carlton@mtsu.edu>

Subject: Re: Assistance with Sustainable Campus Fee grant calculation

Thanks, Kristin. I'll submit it this week!

Carrie H. Pavel, Ph.D, Assoc. AIA

Assistant Professor, Program Director, Interior Architecture

(615) 898.5723 | LRC 130 | carrie.pavel@mtsu.edu

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1301 E. Main Street, PO Box 0024, Murfreesboro, TN 37130



[Book time to meet with me](#)

From: Kristin England <Kristin.England@mtsu.edu>

Sent: Monday, September 21, 2026 12:00 PM

To: Carrie Pavel <Carrie.Pavel@mtsu.edu>

Cc: Nathan Wahl <Nathan.Wahl@mtsu.edu>; Terri Carlton <Terri.Carlton@mtsu.edu>

Subject: RE: Assistance with Sustainable Campus Fee grant calculation

Carrie,

Our Building Services can complete this relamping project for you all if the SCF is approved. Their estimated cost is below. I have also included my calculated energy savings and assumptions. You will need this information for the SCF application. Please let me know if you have any additional questions before you submit the application. Just a reminder, but all applications are due by Sept 30th.

Scope: Change to LED bulbs in the following spaces: 107, 108, 109, 112, connecting hallway, east 1st floor lobby

Estimated Cost of Project: \$10,695

Annual Energy Savings: 12,842 kWh/year, which is about \$1,220/year in energy savings

Assumptions

- Spaces are used 12 hours a day, 6 days a week, 48 weeks a year (3456 hours/year).
- Current 4' bulbs are 32 W and current 2' U-bend bulbs are 31 W

Thanks,
Kristin England