



2019 SUMMARY of SERVICES **2020 ANNUAL REPORT**

July 2019 - June 2020

Facilities Services Department

October 2020

PO Box 32 Murfreesboro, Tennessee 37132
Phone 615-898-2414 | Fax 615-898-5071
www.mtsu.edu/facserv/

**MIDDLE
TENNESSEE**
STATE UNIVERSITY

...maintaining facilities and grounds... In a safe, clean, and functional condition...Continuous growth...Continuous Improvement

MIDDLE TENNESSEE STATE UNIVERSITY



MTSU Facilities Services is a department reporting to Senior Vice President Alan Thomas of the Division of Business and Finance.

A Tennessee Board of Regents University, Middle Tennessee State University is an equal opportunity, non-racially identifiable, educational institution that does not discriminate against individuals with disabilities.

| | |
|--|----|
| Assistant Vice President's Summary | 3 |
| Central Administration | |
| Accounting Information Services | 5 |
| Employee Development Services | 19 |
| Work Order Services | 8 |
| Building Services | 14 |
| Construction Administration | |
| Construction Administration/Capital Maintenance Services | 15 |
| Construction/Renovation Services | 16 |
| COVID-19 Response | 24 |
| Custodial Services | 18 |
| Energy Services | |
| HVAC | 11 |
| Utilities: Central Plant | 10 |
| Engineering Services | |
| Campus Utilities | 6 |
| Center for Energy Efficiency | 6 |
| Elevators & Generators | 12 |
| GIS/Location | 12 |
| Key Shop | 12 |
| Recycling Program | 7 |
| Systems Engineering | 12 |
| Environmental Health & Safety Services | 13 |
| Features | |
| Campus Master Plan Excerpts | 20 |
| Capital Maintenance Project List | 21 |
| Customer Service | 9 |
| MTSU Sustainable Campus Fee Project List | 22 |
| Grounds & Greenhouse Services | 17 |
| Motor Pool Services | 18 |
| Performance Measures | |
| Building Services | 14 |
| Employee Development | 19 |
| Energy Services: Central Plant & HVAC | 11 |
| Engineering Services | 12 |
| Environmental Health & Safety | 13 |
| Grounds Services | 17 |
| Motor Pool Services | 18 |



FY 19/20 has concluded and FY 20/21 is well underway. The fiscal year will be most noted for the COVID-19 pandemic and the effects on campus operations. Numerous plans and protocols were developed and implanted during the year. They continue as the new fiscal year (FY) begins. As always, Facilities Services maintains a constant focus on productivity management, innovation, informed decision-making, and effective communication in serving the campus community.

This report highlights many accomplishments in FY 19/20 for the department and updates the M&O and capital budgets. The following are samples of the Accomplishments and Challenges/Opportunities.

Accomplishments

Performance Metrics

The Summary of Services report from the previous FY identified a combined total of 107 individual goals across the departmental work units for the FY 19/20. Overall, 74 of the goals were completely met or had substantial progress toward their completion (69%), 27 of the goals had progress toward completion but remain on-going (25%) and 6 of the goals had showed little to no progress (6%). With the University effectively shutting down for 3 ½ months due to COVID-19, many goals were unattainable resulting in an increase in the number of goals that remain on-going.

Capital Projects, Construction Renovation Projects, and Maintenance Projects

- 13 capital construction projects were completed totaling \$13.20 million
- 275 renovation projects were completed totaling \$2.49 million
- 125 maintenance projects were completed totaling \$2.05 million

Customer Service and Communication

- All work units combined to complete 18,983 work orders for the year
- Supported the customer service survey process that produced useful feedback and consistently high ratings for services
- Maintained a brochure for academic and administrative personnel that outlines campus maintenance and operations and work order processing
- Initiated weekly meetings with Residential Life maintenance staff to review work progress for Housing

Management and Productivity

- Most significantly, a business intelligence software program was implemented within the department providing for enhanced work analytics and improved project planning
- Staff, informational and safety meetings were conducted throughout the department
- EH&S training software (Safe Colleges) was used to enhance all forms of required training for the department and campus community (including COVID-19 specific training)

Energy Management

- The TN High Performance Building Guidelines are used to design energy efficiency and sustainability features into capital projects
- Facilities Services applies for and has been awarded numerous Sustainable Campus Fee projects to improve energy efficiency and sustainability of several existing facilities across campus
- The MTSU Energy Guidelines are in effect for the campus

COVID-19

- Facilities Services participated on the Crisis Management Team and contributed to the University plans to shut down the campus
- Facilities Services participated on numerous committees and contributed to the University plans for returning to work (Charting our Course)
- Facilities Services has responsibility for numerous operational protocols associated with the safe operation of the campus facilities

Challenges and Opportunities

Pandemic

The COVID-19 pandemic continues to be a major driver in all aspects of facilities operation. Health and safety of Facilities Services employees and all members of the campus community is the primary priority. Budget impacts and fiscal responsibility are also concerns as resources are directed toward COVID-19 specific activities. As FY 20/21 begins, the virus is very active and its ramifications are still unfolding.

Budgets

Maintenance and Operations (M&O) budgets are for basic operational needs such as custodial services, grounds services, central utilities services, light bulb changing, etc., and routine maintenance and repair of facility systems such as HVAC, electrical, etc. The M&O budgets for Facilities Services have

(Continued on page 4)

The mission of Facilities Services is to maintain facilities and grounds and present them to the university tenants and the public in a safe, clean, and functional condition while managing the resources and assets in accordance with applicable requirements, procedures, and constraints.

(Continued from page 3)

remained level over the years.

Capital maintenance projects are submitted each year, typically totaling \$10 million - \$13 million, to provide for the major repair and replacement needs of the campus. Funding formulas indicate an annual need of approximately \$10 million just to remain level. Recent funding history shows annual funding received in the amounts of \$2.0 million – \$4.5 million. After a few years of increased funding (\$6,730,000 – \$8,960,000), FY19/20 saw funding cut to \$5,867,000. Funding levels below the annual requirement are expected to continue. These deficits accumulate over time to a condition referred to as “deferred capital renewal.” This condition is reported on in the Campus Master Plan.

Utilities/Energy Costs

On the whole, energy and utility costs in FY 19/20 decreased 4.6% from the previous FY. This reduction is estimated to be associated with energy efficiency as well as reduced energy demand from the COVID-19 shutdown of facilities. This contributes to the compound reduction of 8.3% compared with FY 16/17. This is primarily due to the consistent use and efficient operations of the facilities and utility plants over the years. In addition, natural gas rates continue to remain fairly low. This is positive considering the reliance on natural gas to fuel the 5 MW turbine/cogeneration system. The Tennessee Valley Authority continues to adjust (net increases) electrical rates. MTSU maintained our time-of-use rate. As such, we remain judicious in our utilities operations and more efficient in every aspect of energy management.

New Buildings and Infrastructure

New buildings add to the M&O and utility needs of the campus. The recent growth increases the demand for M&O

services as well as the infrastructure capacity. Most notably, construction was near completion on the new Academic Building.

Energy and Sustainability

There are many initiatives designed to increase the greening of the campus such as the Sustainable Campus Fee program, the Tennessee High Performance Building Guidelines for capital projects, the recycling program, etc. These programs and initiatives are effective but are also limited by economic factors such as first costs and paybacks. Energy and environmental regulations are increasing as well. Overall, Facilities Services and the Center for Energy Efficiency do an excellent job of integrating the economic and program elements to maximize the energy and sustainability benefits across the campus.

Conclusion

Although constrained by resources, we continue striving to maintain the campus in a safe, clean, and functional manner while aligning the department with the University mission and the Academic Master Plan. The COVID-19 pandemic impacts were and, as of this writing, still are significant to the Facilities Services organization and the campus physical environment. I want to express appreciation to the Facilities Services staff for their dedication and good work in pursuit of these goals during difficult circumstances. The accomplishments listed throughout this document are a testament to their commitment to Middle Tennessee State University.

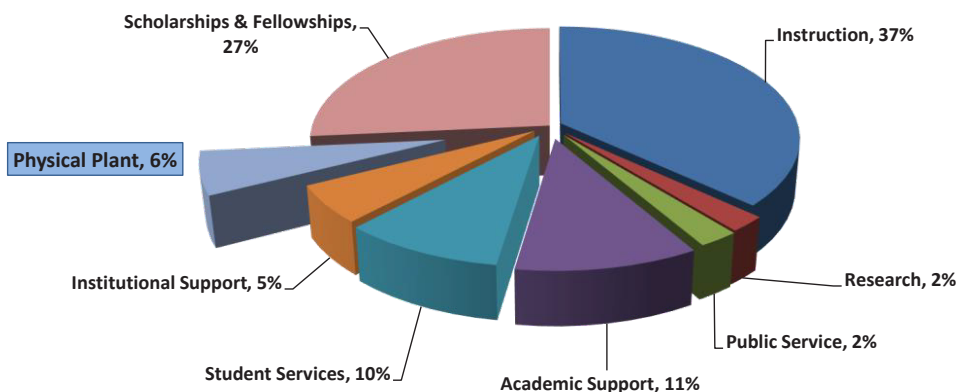
Finally, as we serve the university, it is important that we hear from our customers. Please review this document (as well as our website) for our service delivery. As always, feel free to contact us and let us know how we can serve you better.

—Joe Whitefield



FSD website

MTSU E & G Expenditures 2019-2020



Total: \$419,958,553

Source: Schedule 3 - Current
Funds Expenditures & Transfers
by Function

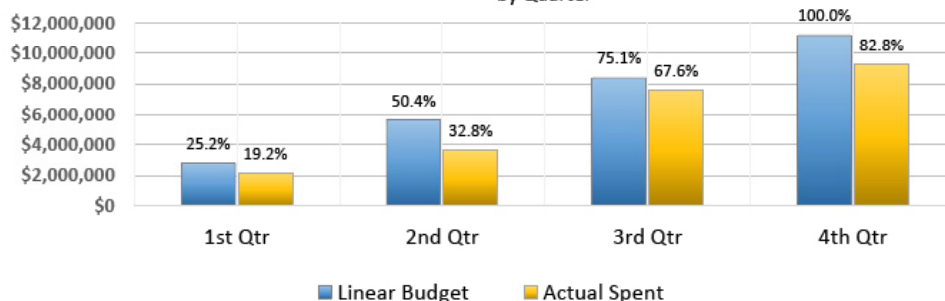
Central Administration: Accounting Information Services

Lori Yoders

5

Facilities M&O E&G Budget & Expenditures

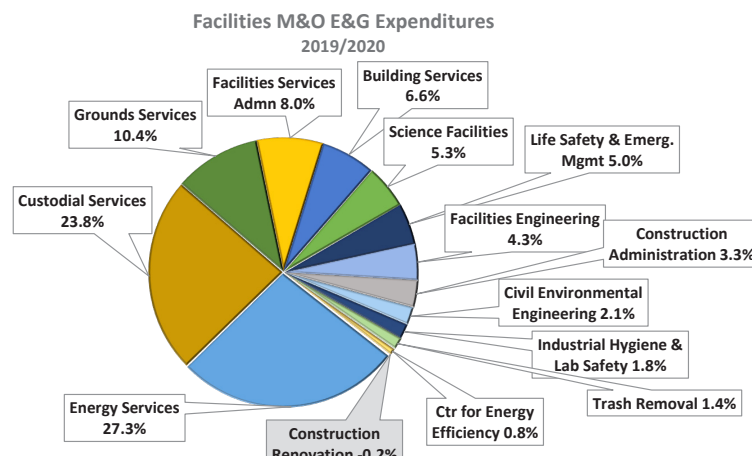
FY 2019-2020
by Quarter



| FY2019-2020 | 1st Quarter | 2nd Quarter | 3rd Quarter | 4th Quarter | End-of-Year Totals | % of Total |
|--|---------------------|---------------------|---------------------|---------------------|----------------------|------------|
| Total M&O E&G Budget | | | | | \$ 28,631,390 | |
| Total M&O E&G Expenditures | \$ 5,931,056 | \$ 5,193,678 | \$ 7,822,181 | \$ 5,830,124 | \$ 24,777,039 | |
| % of M&O E&G Budget | 20.7% | 18.1% | 27.3% | 20.4% | 86.5% | |
| Less: Non-Facilities M&O E&G Exp. | \$ (3,775,318) | \$ (3,675,823) | \$ (3,917,144) | \$ (4,132,423) | \$ (15,500,707) | |
| Facilities M&O E&G Budget | | | | | \$ 11,209,214 | |
| Facilities M&O E&G Expenditures | \$ 2,155,738 | \$ 1,517,855 | \$ 3,905,038 | \$ 1,697,701 | \$ 9,276,332 | 59% |
| % of Facilities Budget | 19.2% | 13.5% | 34.8% | 15.1% | 82.8% | |
| Add: Facilities Work for Others (WFO) | \$ 859,770 | \$ 1,204,388 | \$ 1,115,239 | \$ 1,516,425 | \$ 4,695,823 | |
| Add: Const. Renov. Work for Others | \$ 451,989 | \$ 353,346 | \$ 439,487 | \$ 555,704 | \$ 1,800,525 | 41% |
| Facilities M&O E&G with WFO | \$ 3,467,497 | \$ 3,075,589 | \$ 5,459,764 | \$ 3,769,830 | \$ 15,772,681 | |

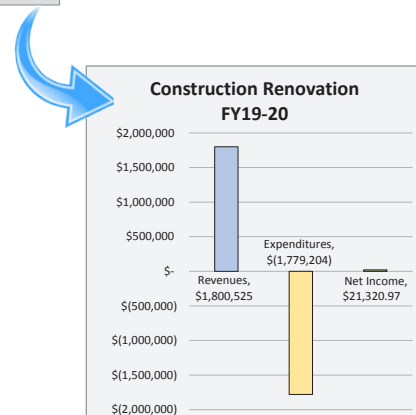
Accomplishments & Highlights 2019/2020

- Improved process of numerical data reconciliation spreadsheets for better efficiency and time management
- Provided continuous accounting support to the FSD, ensured contract renewal & rebid, accumulated costs to reclassify, and met University cut-off demands throughout the COVID-19 pandemic shutdown and return-to-work phases
- Enhanced FSD accounts payable procedures to increase accuracy and management of QuickBooks data and to identify related data for reconciliation processes
- Enhanced year-end financial reports for clarity and ameliorate the procedures
- Updated journal voucher and special billing processes
- Created a logically-formatted manual to map out FSD accounting staff duties and procedures
- Added static information on Asset/Building/Property reports
- Filled the Accountant 1 position with a highly qualified and motivated team member
- Continued to provide Notary service to the university



Goals 2020/2021

- Revise the month-end spreadsheets to update data, track changes, and refine the framework
- Continue creating a procedure manual to document FSD Accounting processes
- Utilize technology to expand FSD Accounting day-to-day financial operations and management functions to improve workflow and reduce redundancies
- Pursue a reference manual on Asset/Building/Property with fact and figure information
- Provide training resources for new employees and annual training for current employees/managers/supervisors
- Continue an annual review and update of the FSD contract list information
- Encourage employee development, education, and certification, including team building and communication



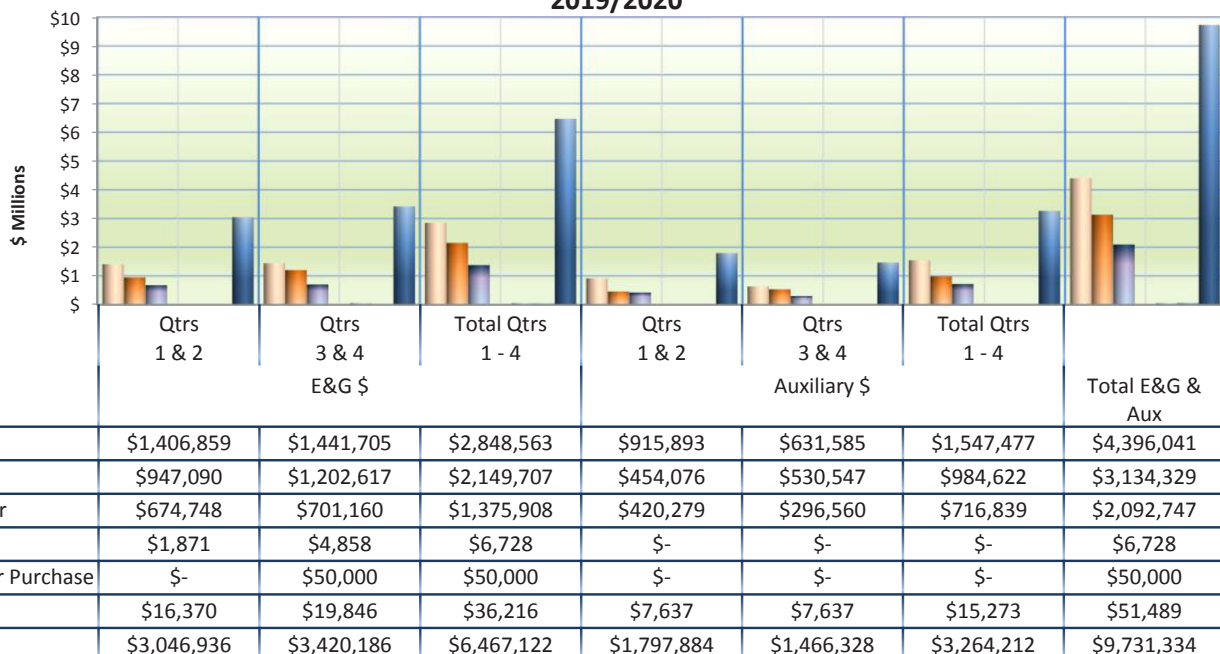
Accomplishments & Highlights 2019/2020

- Initiated Consolidated Utility Billing with Murfreesboro Water and Sewer Resources
- Initiated Collective Billing Payments for ATMOS Gas accounts
- Negotiated annual utility related contracts with Tennessee Valley Authority and Murfreesboro Electric: Generation Partners, Green Power Providers Agreement (GPP 20-year agreement; applied for TVA's Back to Work credit
- Completed annual reporting for THEC, NCAA, & EPA Partnership; provided EIA monthly emissions data for ICT report generation
- Resolved campus utility issues, including utility account audits and consolidated billings
- Continued supporting utility information for Utility Data Management (UDM) Platform for State of Tennessee
- Provided monthly utility cost information for auxiliary billings
- Continued updating Physical Facility Inventory Surveys (PFIS) for Facilities and Capital Maintenance; attended Facilities Assessment Training (THEC)
- Continued support of the MTSU Sustainable Campus Fee Committee (SCF) under Student Affairs; oversight of sustainable project awards and Students for Environmental Action (SEA) projects
- Supported utilities/control specs for campus new construction (Academic Classroom Building, New Parking Services Building)
- Worked through COVID-19 mandatory response and adjustments; supported MTSU's 'Charting Our Course Plan'
- Continued serving on the President's Commission on the Status of Women and Women in STEM Boards
- Published Summary of Services Annual Report for FY18/19
- Attended SRAPPA, October 2019

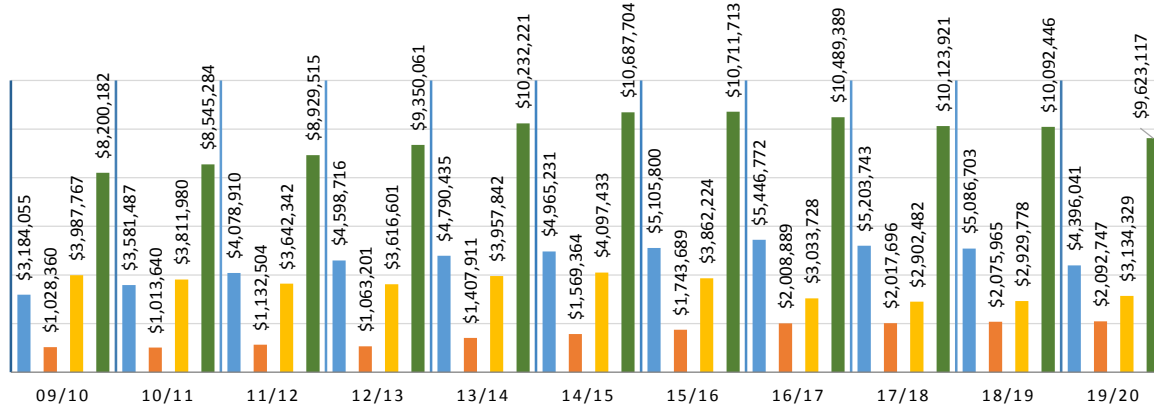
Goals 2020/2021

- Continue support for utilities and sustainability design processes in new campus construction
- Continue 'Green Snapshots' information system for campus sustainability reporting
- Continue involvement with utility information for Utility Data Management (UDM) Platform for State of Tennessee
- Continue to provide utility and energy management data, support, and research to university departments and others as needed (auditing, new service, demo projects)
- Implement electrical account updates due to MTEM purchase of MED
- Continue support of MTSU Sustainable Campus Fee Program and other sustainable practices on campus
- Continue support of University through internships, student workers, and volunteer opportunities; offering CEE intern positions; support classroom instruction for university departments per request
- Support further development and implementation of PowerBI Analytics Program for Facilities Services utilities and surveys; dashboard initiatives for campus and developing metering potentials
- Continue support of MTSU's 'Charting Our Course Plan' and focus on long-term impact of COVID-19

Total Campus Utilities 2019/2020



MAJOR CAMPUS UTILITIES BY FISCAL YEAR



Recycling Program - MTSU Recycles

Linda Hardyman

Accomplishments & Highlights 2019/2020

- Due to extreme contamination issues, community access to recycling at MTSU discontinued in December 2019; cumulative statistics effected by limiting community access and COVID-19 constraints
- Maintained recycling program to meet campus needs by employing student and temporary workers
- Supported recycling efforts for Campus Planning, Capital Construction, and Construction/Renovation projects in multiple building's construction projects (Academic Classroom Building, New Parking Services Building, move-outs/move-ins)
- Oversaw implementation of additional Sustainable Campus Fee (SCF) projects submitted by students and others; supported awarded grants (Health & Human Performance) for water refills
- Continued dealing with major commodities issues relating to downturn in recycling markets, i.e. recycling of plastic bottles only, restructured recycling for local community, limited access to certain commodity collections; issues with COVID-19; partnership arrangement with Rutherford County
- Responded to 480+ special requests for recycling on campus in addition to normal program tasks
- Supported Customs and other special outreach events on and off campus per invitation

| MTSU Recycles! | |
|---|------------------|
| Commodity | 2019/2020 Pounds |
| Aluminum | 4,972 |
| Paper/Cardboard | 229,056 |
| Maintenance Metals | 44,813 |
| E-waste | 33,500 |
| Plastics | 12,400 |
| Units | |
| Batteries | 1,847 |
| Ink Cartridges | 770 |
| Pallets | 833 |
| Cumulative numbers effected by limiting community access and COVID-19 constraints | |

Goals 2020/2021

- Continue to direct Sustainable Campus Fee approved projects – water refill stations, solar picnic table, solar trash compactors, etc.
- Continue to promote campus recycling education, promote 'how to recycle correctly', upgrade appearance of campus recycling collection bins
- Explore available initiatives to grow the program, deal with marketing issues, and avoid tipping fees for campus waste going to the landfill with efforts for least impact on the program due to marketing/commodities issues
- Continue to support Campus Planning, Capital Construction, Construction/Renovation, and ITD projects
- Continue to work with athletics staff to provide appropriate level of recycling at athletic events
- Continue working with MTSU Sustainable Campus Fee Program for recycling project funding
- Develop PowerBI SCF project inclusion
- Explore partnership opportunities with MTSU initiatives, Recycle Rutherford and Rutherford County Government
- Continue to provide classroom support through guest lectures, environmental seminars and storm water initiatives
- Continue to maintain COVID-19 requirements
- Continue staff participation in training and development programs

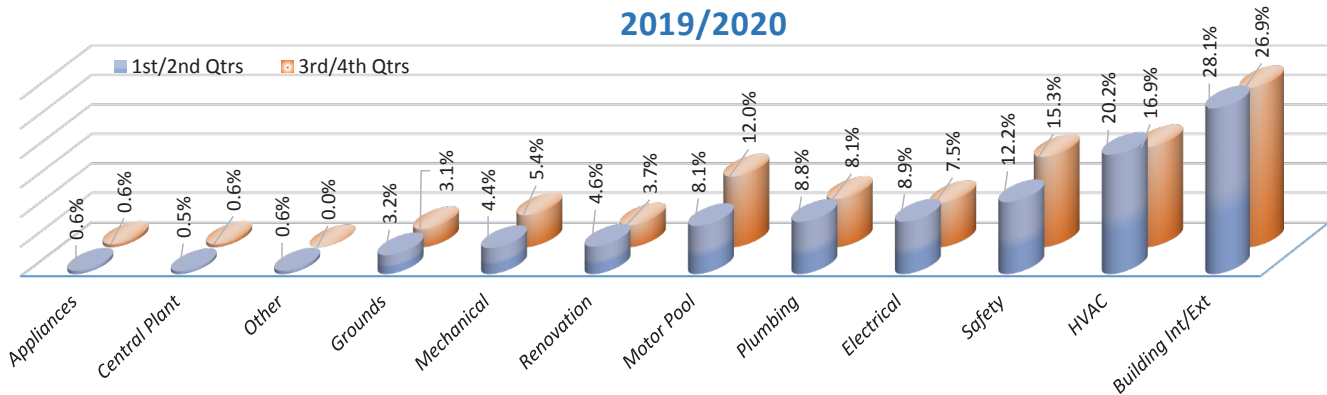




Central Administration: Work Order Services

Joyce Reed

WORK ORDERS ORIGINATED 2019/2020



2019/2020 WORK ORDERS ORIGINATED

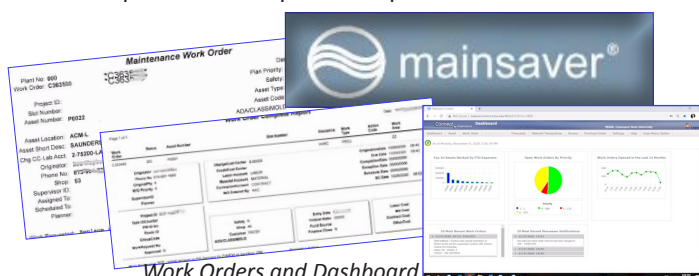
| | 1st Qtr | | 2nd Qtr | | 3rd Qtr | | 4th Qtr | | Annual Totals | |
|----------------------------|--------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|---------------|----------------|
| | # WO | % of Total | # WO | % of Total | # WO | % of Total | # WO | % of Total | # WO | % of Total |
| Appliances | 33 | 0.60% | 26 | 0.52% | 24 | 0.52% | 23 | 0.60% | 106 | 0.56% |
| Building Interior/Exterior | 1,547 | 28.24% | 1,402 | 27.88% | 1,291 | 27.82% | 993 | 25.89% | 5,233 | 27.57% |
| Central Plant | 21 | 0.38% | 28 | 0.56% | 23 | 0.50% | 24 | 0.63% | 96 | 0.51% |
| Electrical | 447 | 8.16% | 484 | 9.62% | 414 | 8.92% | 219 | 5.71% | 1,564 | 8.24% |
| Grounds | 193 | 3.52% | 140 | 2.78% | 116 | 2.50% | 143 | 3.73% | 592 | 3.12% |
| HVAC | 1,176 | 21.46% | 943 | 18.75% | 774 | 16.68% | 660 | 17.21% | 3,553 | 18.72% |
| Mechanical | 224 | 4.09% | 238 | 4.73% | 239 | 5.15% | 220 | 5.74% | 921 | 4.85% |
| Motor Pool | 484 | 8.83% | 370 | 7.36% | 373 | 8.04% | 640 | 16.69% | 1,867 | 9.84% |
| Plumbing | 442 | 8.07% | 486 | 9.66% | 508 | 10.95% | 182 | 4.75% | 1,618 | 8.52% |
| Renovation | 260 | 4.75% | 227 | 4.51% | 184 | 3.97% | 130 | 3.39% | 801 | 4.22% |
| Other | 36 | 0.66% | 24 | 0.48% | 0 | 0.00% | 0 | 0.00% | 60 | 0.32% |
| Safety | 616 | 11.24% | 661 | 13.14% | 694 | 14.96% | 601 | 15.67% | 2,572 | 13.55% |
| Total | 5,479 | 100.00% | 5,029 | 100.00% | 4,640 | 100.00% | 3,835 | 100.00% | 18,983 | 100.00% |

Accomplishments & Highlights 2019/2020

- Coordinated with Provost Office personnel to design weekly work order reports and review process to identify funding sources for academic work requests
- Researched and identified available Mainsaver fields where data can be added or edited to reflect information desired for PowerBI analytics
- Analyzed, documented, and trained employees for duties being reassigned because of upcoming employee retirement
- During COVID-19 work from home directive, put into place processes and procedures to enable all usual work order office activities to continue
- Begin to document and compile work order processes and procedures to produce operations manual

Goals 2020/2021

- Implement Mainsaver event notification for work order activities, redesign work request web forms, suggest adjustments to PowerBI pages for improved data access, and work with shop personnel to submit open work order progress notes to enhance communication with FSD personnel, Housing staff and other customers
- Assist FSD Accounting personnel in designing and generating reports and data extracts to access information from Mainsaver and Fuelmaster to enable viewing, analyzing and verifying financial and maintenance records
- Explore new or expanded functionality in Mainsaver Core and Mainsaver Connect to identify ways to simplify work flow, enhance productivity and improve data accuracy of maintenance activities and financial expenditures related to work orders; investigate using hand held devices to input and access Mainsaver data
- Continue to document and compile work order processes and procedures to produce operations manual



http://www.mtsu.edu/facserv/work_request_forms.php



Maintenance Projects MP-2's

As part of the maintenance project process, MP-2 forms are used to track those maintenance projects which are major repair or replace projects beyond the routine.

For FSD funded projects that are not considered of a Construction/Renovation nature, outside our normal operating budget, and need expenditure approvals from a budgetary authority, the MP-2 form allows all elements of projects to be accurately tracked until completed.

MP-2 Project Summary

| 2019-2020 | # Projects | Project Value |
|-------------------------------|------------|-----------------------|
| Energy Services | 58 | \$675,716.03 |
| Building Services | 33 | \$699,574.33 |
| Grounds Services | 16 | \$208,280.96 |
| Environmental Health & Safety | 6 | \$87,766.84 |
| Engineering Services | 5 | \$126,778.69 |
| Motor Pool | 4 | \$156,440.24 |
| Facilities Services | 1 | \$59,114.64 |
| Small Renovation | 1 | \$12,251.34 |
| Systems Engineering | 1 | \$26,559.67 |
| Totals | 125 | \$2,052,482.73 |



Fire Pump Replacement-
Student Union



Cooling Tower N & S Float
Replacement



Heat Recovery Boiler Gas Valves



New Air Compressor System-
New Science Building



PowerBI Analytics

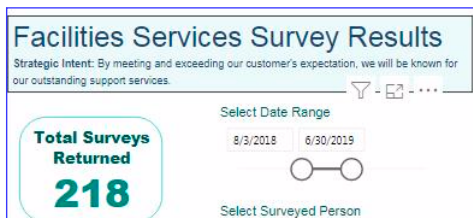
Customer Service

Facilities Services initiated a Customer Service Satisfaction Survey in 2016 to provide better communication with our campus community. The valuable feedback has provided better understanding of customer's expectations and satisfaction with our level of service.

The feedback has also allowed us to evaluate our systems and procedures and to continue to improve our customer service culture.

Accomplishments & Highlights 2019/2020

- Provided an avenue of communication between Facilities Services and the Campus Community
- Gaining a better understanding of our Customer's Expectations
- Created a tool to share constructive comments and compliments within our department



Good job & communication. Thanks for all you do for the campus!

Goals 2020/2021

- Continue to improve and streamline our processes
- Seek ways to improve our communication with our customers
- Strengthen relationships with our campus community

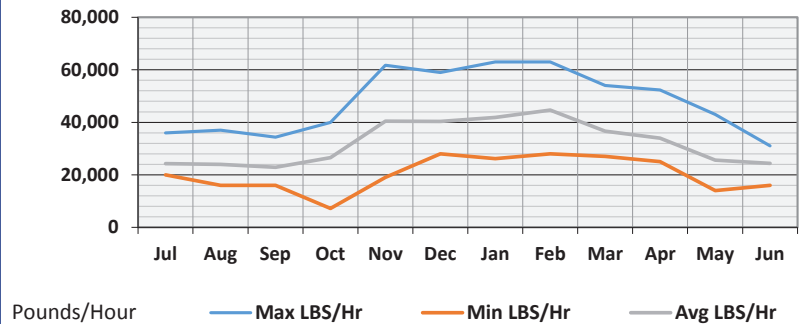
| 2019/2020 Work Order Customer Satisfaction Survey | | |
|--|-------------------|----------------------|
| Did you receive an email when the work order was opened? | | 97.7% |
| Did you receive an email when your work order was completed? | | 97.7% |
| Did the Corrective Action adequately address the problem or requested work? | | 4.6 |
| How satisfied are you with the timeliness of the response(s) to your work request? | | 4.7 |
| How satisfied are you with the customer service you received? | | 4.7 |
| Scale: | 5- Very Satisfied | 2- Dissatisfied |
| | 4- Satisfied | 1- Very Dissatisfied |
| | 3- Neutral | |

Accomplishments & Highlights 2019/2020

- Managed 231 after hours callbacks
- Prepared EPA report for greenhouse gas emissions
- Evaluated operating schedules for natural gas and electric
- Modulated supply air temperature for air handling units to conserve energy
- Developed training manual/testing for new plant operators; trained boiler operators on normal/emergency procedures; trained staff on code compliance; completed safety training
- Completed projects include:
 - flow straighteners for boiler feed water pumps
 - underground steam and condensate lines under phase 2 of capital project
 - new gas valves to heat recovery boiler
 - new Siemens panels for EMS system in auxiliary bldgs
 - new membranes for R.O. System
- Repaired condensate leaks at Jones Hall, Boutwell Dramatic Arts, Walker library, and between Business Aerospace and College of Ed
- Supported implementation of PowerBI to improve services

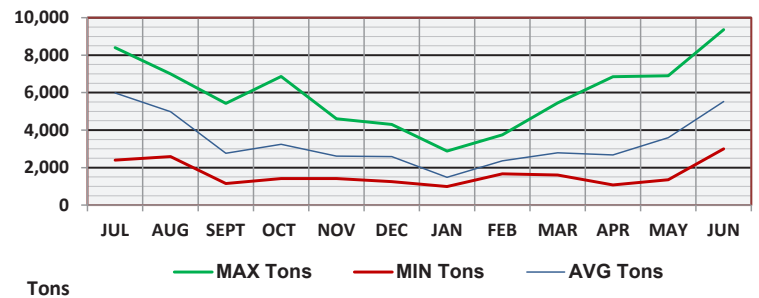
Steam Production

2019/2020



Chilled Water Tonnage

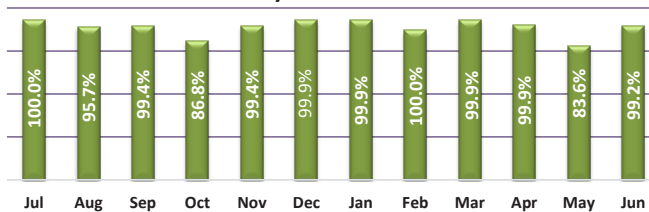
2019/2020



Goals 2020/2021

- Continue exploring recovery of loop system condensate
- Repair underground condensate lines at Jones Hall and Observatory
- Repair steam leaks at Saunders Fine Arts and near College of Education
- Repair Faulkinberry Drive Manhole D2 condensate leak
- Support replacement of steam line from McFarland
- Continue to support capital and construction/renovation projects on campus
- Implementation of PowerBI to improve services
- Continue to investigate training opportunities

Turbine: Percent Runtime By Month 2019/2020



2019/2020 Central Plant Equipment Peak Operational Levels

| Natural Gas Fired Turbine/Generator | | | | | Steam Boilers | | | | | Chillers | | | | |
|-------------------------------------|-----------|-----------|----------|-----------|---------------------------|----------|---------|---------|--------|--------------------|----------|---------|---------|--------|
| 5 MW (Nominal) | | | | | 85,000 Pounds/Hour (Peak) | | | | | 11,500 Tons (Peak) | | | | |
| | Mid-Year | 3rd Qtr | 4th Qtr | Annual | | Mid-Year | 3rd Qtr | 4th Qtr | Annual | | Mid-Year | 3rd Qtr | 4th Qtr | Annual |
| Peak MW | 5.16 | 5.13 | 5.00 | 5.16 | | | | | | Max Peak Tons | 8,396 | 5,454 | 9,362 | 9,362 |
| Avg MW | 4.45 | 4.68 | 4.43 | 4.51 | Avg LBS/Hr | 29,784 | 40,172 | 26,907 | 31,662 | Min Tons | 1,153 | 989 | 711 | 711 |
| Total MWH | 19,047.80 | 10,203.11 | 9,103.11 | 38,378.39 | Peak LBS/Hr | 59,000 | 63,000 | 51,000 | 63,000 | | | | | |

Purchased Power: 41,415.74 MWH

Accomplishments & Highlights 2019/2020

- Managed 86 after hours callbacks
- Supported construction/renovation projects
- Supported sustainable campus fee projects
- Completed safety training
- Improved customer service in HVAC department
- Used PowerBI to reduce work order completed past due percentage by addressing identified work flow and documentation process issues
- Installed 12.5 Daikin heat pump-Floyd Stadium

Goals 2020/2021

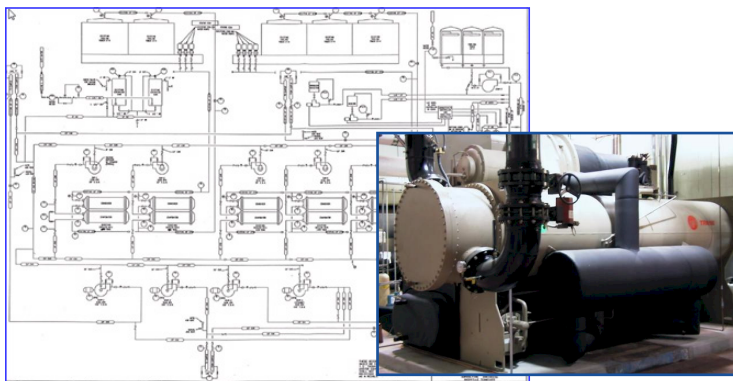
- Continue to clean coils on campus to improve air quality and energy efficiency
- Continue to perform preventive maintenance on AHU'S
- Continue to assist contractors in replacing steam lines on campus
- Continue to investigate steam and chilled water leaks on campus
- Replace VAV dampers in BAS; AHU #6 at Dyslexia
- Improving air quality at MTSU thru Merv 13 or 14 filters (COVID-19 response)
- Install UV lights in Health Center and weight room (COVID-19 response)
- Use proper PPE for Covid-19 response
- Continue to use PowerBI to reduce work order completion dates
- Continue to investigate training opportunities
- Develop new projects for MTSU Sustainable Campus Fee
- Continue to support capital and construction/renovation projects on campus

| PERFORMANCE MEASURES: Energy Services Preventive Maintenance and Service | | | | |
|---|---------------|------------------------|-----------|------------------|
| 2019/2020 | | #Work Orders Completed | Man Hours | Avg Man Hours/WO |
| PREVENTIVE MAINTENANCE (PM) Requests | | Annual | Annual | Annual |
| | Appliances | 19 | 14 | 0.7 |
| | HVAC | 1,087 | 4,963 | 4.6 |
| | Mechanical | 637 | 959 | 1.5 |
| | Sub-total | 1,743 | 5,936 | 3.4 |
| | Central Plant | 16 | 1,438 | 89.9 |
| Total | | 1,759 | 7,374 | 4.2 |
| SERVICE WORK ORDERS | | Annual | Annual | Annual |
| | HVAC | 176 | 3,158 | 17.9 |
| | Mechanical | 31 | 335 | 10.8 |
| | Sub-total | 207 | 3,493 | 16.9 |
| | Central Plant | 33 | 3,158 | 95.7 |
| | Total | 240 | 6,651 | 27.7 |

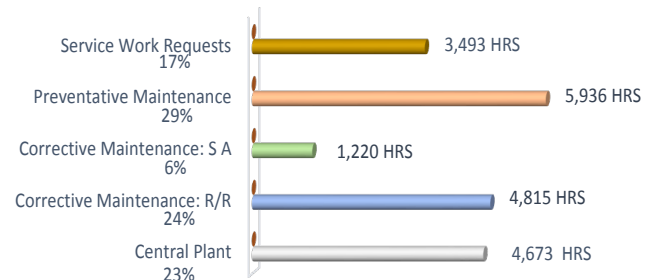
| PERFORMANCE MEASURES: Energy Services Corrective Maintenance | | | | | | | |
|--|---------------|------------------------|-------------------|----------------|-------------------|------------------|-------------------|
| 2019/2020 | | #Work Orders Completed | | Man Hours | | Avg Man Hours/WO | |
| CORRECTIVE MAINTENANCE (CM) | | Replace/Repair | System Adjustment | Replace/Repair | System Adjustment | Replace/Repair | System Adjustment |
| | Appliances | 34 | 5 | 103 | 7 | 3.0 | 1.4 |
| | HVAC | 1,400 | 725 | 4,222 | 1,132 | 3.0 | 1.6 |
| | Mechanical | 157 | 43 | 490 | 81 | 3.1 | 1.9 |
| | Sub-total | 1,591 | 773 | 4,815 | 1,220 | 3.0 | 1.6 |
| | Central Plant | 37 | 2 | 73 | 4 | 2.0 | 2.0 |
| | Total | 1,628 | 775 | 4,888 | 1,224 | 3.0 | 1.6 |



Central Plant



Energy Services Total In-House Work Order Hours 20,137 Man Hours 2019/2020



Accomplishments & Highlights 2019/2020

Systems Engineering

- Oversight of departmental fume hood certification and maintenance of fume hoods in Science complex with a 98% pass rate in this year's initial certification effort
- Continued to learn the operation and improve the functionality of environmental growth chambers in the Science complex to assist departments in reducing repair costs
- Developed a process of changing and managing air valve actuators in the New Science Building to reduce 3rd party vendor costs by training MTSU employees to make repairs
- Managed the completed installation of the new air compressor system for the New Science Building laboratories
- Developed a Scope of Work for a Capital project focused on improving the operational effectiveness and reliability of the air valves serving the lab hoods in the New Science Building

GIS and Locating

- Processed 1,049 locate tickets supporting Capital Maintenance, Capital Outlay, and local campus projects
- Worked continuously with contactors to communicate more effectively and stay informed on any issues that arise on construction projects.
- Ongoing development and update of the GIS database for campus utilities while the New Academic Building, Campus Stormwater project, campus-wide surveillance, and steam line replacement projects were underway

Elevators & Generators

- Completed Floyd Stadium Tower Elevators door modifications - new doors, hardware, motors, and updated control system
- Completed KOM Elevator modernization including the replacement of a hydraulic unit with a traction type electric motor drive
- Installed new chairlift at the Softball Complex
- Monthly inspections of ADA elevator phones - total of 900 inspections last year
- Provided assistance with Homeland Security recertification for Campus Security and WMOT Tower generators
- Maintained emergency generators providing monthly EPA reports for emergency generators compliance with TDEC standards
- Replaced 2 generators and automatic transfer switches at WMOT Tower and Telecom Building; units upsized to accommodate current and future anticipated loads

Key Shop

- Completed 1,279 work orders, cut a total of 1,537 keys for Residential Life and Construction Administration/Renovation projects; built and installed 485 new I/C cores
- Responded to a total of 32 call backs
- Expanded the campus wide total of online access control doors from 871 to 959
- Completed total rekey of Murphy Center & Greek Row #5
- Completed state funded campus security project involving the removal of older crash bar panic device hardware and installation of new push pad type door hardware

| PERFORMANCE MEASURES: Engineering Services Coordinated and Conducted Activities | | | | | | |
|--|---|-----------|----------------------|-----------------------------------|-----------|----------------------|
| | Corrective Maintenance and Service Activities | | | Preventive Maintenance Activities | | |
| 2019/2020 | # of Work Orders completed | Man Hours | Avg Man Hours per WO | # of Work Orders completed | Man Hours | Avg Man Hours per WO |
| Keyshop | 1,273 | 3,826 | 3.01 | 6 | 14 | 2.33 |
| Elevators | 420 | 368 | 0.88 | 822 | 322 | 0.39 |
| Generators | 36 | 106 | 2.94 | 326 | 361 | 1.11 |

Goals 2020/2021

Systems Engineering

- Implement and monitor necessary preventive maintenance activities to meet the needs of the Science complex
- Complete onsite manufacturer provided air valve software trouble-shooting and programming training
- Develop a maintenance plan for the new air compressor system in the New Science Building

GIS and Locating

- Purchase updated GIS equipment for collecting utility data
- Continue to assist contractors and project managers in their efforts to improve the campus utilities infrastructure in new buildings and upgrades to the campus

Elevators & Generators

- Rebuild existing generator previously serving Telecom and install at the University Police Crisis Center for backup power
- Coordinate training between Murfreesboro Fire Department and Kone (on-campus maintenance vendor) for elevator entrapment rescue
- Implement Emergency Generator data collection procedures into PowerBI information system

Key Shop

- Support the completion of Capital Projects at the Parking Services and Concrete and Construction Management Building

Accomplishments & Highlights 2019/2020

Industrial Hygiene and Laboratory Safety

- Completed approximately 4,462 weekly, semi-annual, & annual inspections for compliance with federal, state and local guidelines related to existing labs, lab hoods, elevators, IACUC, AED pads & batteries, & hazardous materials. These numbers are reduced in comparison to last year due to the COVID-19 shutdown
- Managed the identification, collection, packaging, transportation, and disposal of approximately 3,475 pounds of chemical hazardous waste
- Supervised 17 asbestos containing materials (ACM) sampling and removal efforts campus-wide by MTSU and contractors; conducted 40 mold reports developed internally by EH&S
- Completed 4 Low Level Radioactive Waste Surveys; sent to TDEC Division of Radiological Health (DRH); TDEC DRH conducted 2 radioactive safety inspections in November and December 2019 with no items of non-compliance found
- One inspection by TDEC DSWM for hazardous waste in February 2020 with no items of non-compliance found
- Having created a new laboratory inspection template report in 2019, EHS is now on the third round of inspections for 2020 using this new template

Fire & Life Safety Services

- Installed New Fire Pump at Student Union Building replacing an older unit
- Created program in cooperation with the MTSU Police Department to handle local alarms in Housing areas, such as Womack Lane Apartments, to reduce the number of afterhours callbacks
- Hired new Fire Safety Inspector
- Added three new buildings to fire alarm network not previously online: Warehouse, Police Station, and Campus School

Civil & Environmental Engineering Services

- Successfully met requirements for maintaining the campus' stormwater co-permit with the City of Murfreesboro for the Tennessee National Pollutant Discharge Elimination System (NPDES)
- Submitted annual report to Tennessee Department of Environmental Conservation (TDEC) for the July 1, 2019 – June 30, 2020 reporting year
- Coordinated with Campus Planning and Construction Administration to ensure proper design and installation of stormwater systems for new Capital Projects

Goals 2020/2021

Industrial Hygiene and Laboratory Safety

- EH&S Personnel to attend certification training to perform on-campus asbestos & mold inspections
- Complete on-campus Radiation Safety Manual
- Properly remove all on-campus radioactive materials that were accumulated during the Davis and Wiser-Patten Science Building renovation project

Fire & Life Safety Services

- Institute a Fire Extinguisher exchange program to provide replacements and up-to-date equipment for units reaching end of service date (200+ units over a 5-year period)
- Installation of First Responders Bleed kits in Police Vehicle and existing buildings

| 2019/2020 | | Corrective Maintenance (CM) | Preventive Maintenance (PM) | Service Work Orders | Work Orders Completed | Program Totals |
|--|--------|-----------------------------|-----------------------------|---------------------|-----------------------|----------------|
| Industrial Hygiene & Lab Safety Services | Annual | 105 | 2,206 | 515 | 2,826 | 5,497 |
| Life Safety & Emergency Management | Annual | 44 | 2,028 | 378 | 2,450 | |
| Civil & Environmental Engineering Services | Annual | 12 | 144 | 65 | 221 | |

Civil & Environmental Engineering Services

- Continue to work with Campus Planning and Construction Management to ensure correct design and install of drainage and systems on upcoming Capital Projects
- Coordinate stormwater mapping with Building Services and Campus Planning to update the Geographical and Information System (GIS); work as a team to further develop a process to map campus utilities and provide maintenance to infrastructure
- Continue stormwater program partnership with the City of Murfreesboro to meet NPDES permit compliance

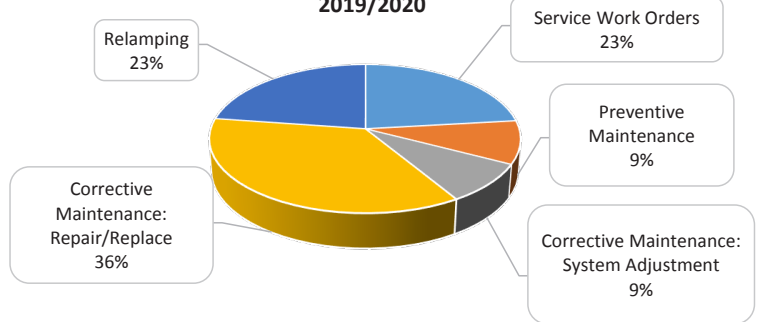


| STORMWATER PROGRAM ACTIVITIES 2019-2020 | |
|---|-------------|
| Targeted Education Total | 4343 |
| Field Events (stream cleanups, tree plantings, tree day) | 13 |
| Participants signed up for information & volunteer list | 159 |
| Trash/Sediment Removed (LBS) | 2,262 |
| Invasive plants removed | 1,024 |
| Outreach: Trees planted/given out; mail-outs; door hangers | >873 |
| Complaints/ Responses | 12 |
| General Education Total | 3825 |
| Overall MTSU/Public/Classroom Education Events (booth, zoom, workshops) | 3,052 |
| Educational print media/Promo items distributed | 772 |
| Trainings Given | 1 |
| Events Scheduled/ Cancelled due to COVID-19 | 11 |

Accomplishments & Highlights 2019/2020

- Completed upgrades to showers in visitor's showers and visiting coaches' locker rooms at Floyd Stadium
- Improved functionality of main waste line by 90%+ at Student Services Building
- Completed upgrades to men and women's showers in the PE locker rooms at Murphy Center
- Successfully replaced all of the underground electric lines and transformers serving Womack Lane Apartments, Buildings A-F, on time and under budget
- Successfully fulfilled over 4,975 service requests (work orders) all over campus plus numerous small projects
- Developed methodologies for improved 2-way communication with outside service providers under general services contracts with MTSU
- Supported COVID-19 measures

**Building Services: Annual In-House Man Hours
2019/2020**



Starbucks – New Grease
Trap Installation

PERFORMANCE MEASURES: Building Services Corrective Maintenance

| 2019/2020 | | #Work Orders Completed | | Man Hours | | Avg Man Hours/WO | |
|--------------------------------------|----------------------------|------------------------|-------------------|----------------|-------------------|------------------|-------------------|
| CORRECTIVE MAINTENANCE (CM) REQUESTS | | Replace/Repair | System Adjustment | Replace/Repair | System Adjustment | Replace/Repair | System Adjustment |
| | Appliances | 12 | 5 | 32 | 10 | 2.7 | 2.0 |
| | Building Interior/Exterior | 798 | 345 | 2,502 | 803 | 3.1 | 2.3 |
| | Electrical | 169 | 238 | 592 | 330 | 3.5 | 1.4 |
| | Plumbing | 1,040 | 159 | 3,001 | 342 | 2.9 | 2.2 |
| | Sub-total | 2,019 | 747 | 6,127 | 1,485 | 3.0 | 2.0 |
| | Re-Lamping | 722 | 60 | 3,358 | 509 | 4.7 | 8.5 |
| | Total | 2,741 | 807 | 9,485 | 1,994 | 3.5 | 2.5 |

Goals 2020/2021

- Complete the final three stages of five stage plan to significantly improve the functionality of the main waste line at the Student Services Building delayed due to the COVID-19 response
- Continue to retrofit the Sternberg light fixtures on campus with LED lamps to improve the safety and security for the student population, visitors, and the larger campus community, improving campus lighting reliability and the added benefit of reducing MTSU's carbon footprint
- Complete exterior waterproofing and stormwater management project on the north-west quadrant of exterior wall and grounds at Alumni Memorial Gym
- Identify new sources of qualified candidates to fill current vacancies

**PERFORMANCE MEASURES: Building Services
Preventative Maintenance and Service**

| 2019/2020 | | #Work Orders Completed | Man Hours | Avg Man Hours/WO |
|---------------------------------------|----------------------------|------------------------|-----------|------------------|
| PREVENTIVE MAINTENANCE (P/M) REQUESTS | | Annual | Annual | Annual |
| | Building Interior/Exterior | 187 | 741 | 4.0 |
| | Electrical | 44 | 29 | 0.7 |
| | Plumbing | 364 | 826 | 2.3 |
| | Total | 595 | 1,596 | 2.7 |
| SERVICE WORK ORDERS | | Annual | Annual | Annual |
| | Building Interior/Exterior | 1,622 | 2,496 | 1.5 |
| | Electrical | 47 | 83 | 1.8 |
| | Plumbing | 51 | 193 | 3.8 |
| | Renovation | 773 | 1,177 | 1.5 |
| | Total | 2,493 | 3,949 | 1.6 |

Accomplishments & Highlights 2019/2020

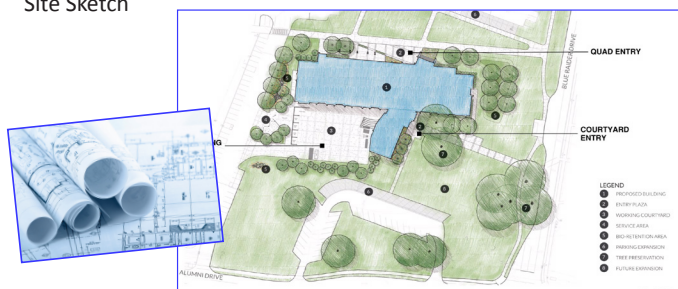
- Despite major disruptions with Covid-19, projects have managed to open on time with no major disruptions to MTSU campus and processes
- Construction Administration has begun using the THEC PITS for project management
- Multiple roof projects under way KUC, SFA, VET and PHLP
- Completion of Job Order Contracts for projects 100K to 500K bid and awarded to DPR Contractors. DPR has started 2 new projects for MTSU
 - Softball bleacher renovation
 - Murphy Center Bathroom renovation
- New Academic Classroom Building is getting close to completion, opening Fall of 2020
- Parking Services building is well underway and should be complete to move in December 2020
- New Aramark dining renovations at KUC and Corlew dining will be open for service Fall of 2020 with a completed cost of \$6,200,000

Goals 2020/2021

- Will be looking for opportunities to participate in continuing education Webinars.
- Our group will be updating and creating Warranty Management data using PowerBI
- Design and start construction on Murphy Center Curtain Wall project with the budget cost of \$4.6 Million
- Completion and opening of New Parking Services Building January 2021
- Start construction for New Concrete and Construction Management Building with a budget cost of \$40,100,000 starting with the Early Release Package

| 2019/2020 Capital Projects Review | | |
|-----------------------------------|---|--|
| | New Projects | Completed Projects |
| 1st July - September | ✓ Data & Communication Centers | ✓ BAS Control Panels Replacement ✓ Several Buildings Roof Replacement |
| 2nd October - December | ✓ Baseball and Softball Video Boards | ✓ Maintenance Complex Reroof ✓ Alarm System Updates Phase I ✓ Cope Executive Suite Update-ITD 2nd Floor ✓ Steamline and Manhole Repair/Replace II ✓ Miller Education Center Roof Replacement |
| 3rd January - March | ✓ Greek Row #5 Renovations ✓ Miller Education Center Boiler Replacement | ✓ Baseball and Softball Video Boards ✓ Elevator Modernizations II ✓ Water and Sewer System Upgrades |
| 4th April - June | ✓ KUC/McCallie Dining Renovations ✓ KOM HVAC Updates ✓ Wisser/CoGen/Chiller Plant Reroof ✓ Campus Stormwater BMP I ✓ Piping/Manhole Replacement A ✓ Stark Ag/Police Station Upgrade ✓ Science Building Air Compressor ✓ Several Roof Replacement A | ✓ Miller Education Center Boiler Replacement ✓ Greek Row #5 Renovations ✓ Several Buildings Smoke Evacu |

Concrete & Construction Management Site Sketch



New Academic Classroom Building



Construction Administration Capital Project Summary

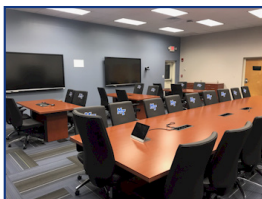
| 2019/2020 | 1st FY Qtr | | 2nd FY Qtr | | 3rd FY Qtr | | 4th FY Qtr | | Annual Totals | |
|---------------------------|------------|-------------------|------------|-------------------|------------|-------------------|------------|-------------------|---------------|-------------------|
| | # Projects | Value of Projects | # Projects | Value of Projects | # Projects | Value of Projects | # Projects | Value of Projects | # Projects | Value of Projects |
| Beginning Active Projects | 13 | \$ 48,245,784 | 12 | \$ 47,574,135 | 8 | \$ 41,444,135 | 7 | \$ 39,824,571 | 13 | \$ 48,245,184 |
| Added Projects | 1 | \$ 1,212,000 | 1 | \$ 1,500,000 | 2 | \$ 668,074 | 8 | \$ 10,952,546 | 12 | \$ 14,332,620 |
| Completed Projects | 2 | \$ 1,883,049 | 5 | \$ 7,630,000 | 3 | \$ 2,287,638 | 4 | \$ 1,404,012 | 13 | \$ 13,204,699 |
| Ending Active Projects | 12 | \$ 47,574,135 | 8 | \$ 41,444,135 | 7 | \$ 39,824,571 | 11 | \$ 49,373,105 | 11 | \$ 49,373,105 |

Accomplishments & Highlights 2019/2020

- Construction/Renovation closed approximately 275 projects and managed more than \$2,493,000 worth of products and services.
- While working remotely due to COVID-19, multiple projects were initiated and completed in preparation for the future reopening. Notable projects include electrical connections for lecture-capture equipment, hundreds of clear shields for high-touch visitor areas, and classroom instructor shields where requested.
- During the COVID-19 essential work period, renovations continued with minimal detriment to schedules or scope
- Completed renovations include:
 - ING 101 – Renovation for new departmental office suite
 - Fairview 202 – Office suite renovation
 - Jean A. Jack Flight Education Center – Five briefing spaces
 - TAF classroom renovations at SAG 208, Todd 122, KOM 320, BDA 220, Bragg 167, BAS S305 and S336
 - LIB Starbucks – New grease trap
 - WMB Hinton Hall – Renovation of existing finishes, curtains, and organ
 - AMG 150 – Additional underwater treadmill installation
 - EHS Restroom – Renovation of existing restroom for ADA compliance
 - College Heights – Renovation for University Police
 - ACE Learning Center – Coordinated the playground sunshade installation
 - SFA – Wenger room installation for ensemble practices



Wright Music Building -- Hinton Hall renovation in progress



Classroom



ACE Learning Center – Playground Sunshade

Goals 2020/2021

- Integrate project information onto the PowerBI platform providing easier search-ability of past and current renovation projects
- Employ students in the Interior Design program as an enhancement to their major area of study
- Continue to provide support for faculty and staff relocations as preparation for Construction Administration and Campus Planning capital projects
- Continue to assist Building Services with outsourcing of fixture and finish maintenance work
- Successfully rebid the electrical contract for Facilities Services use
- Continue to monitor the current Direct Order Contract holder and associated contract requirements
- Complete all training and attend continuing education seminars
- Successfully complete major renovations:
 - Chris Young Café at Woodmore interior renovation Phase II
 - TN Music Pathways sign installation at Chris Young Café at Woodmore
 - Songwriting classroom and studios in Miller Education Center
 - Animation labs in College of Education
 - Department relocations and interior improvements in Jones Hall and Peck Hall
 - Student engagement spaces in Business/Aerospace Building
 - Oversee demolition of 727 airplane at campus airport
 - Support space renovations for new Physician's Assistant program
 - Space renovation for planned Biology Department research writers program

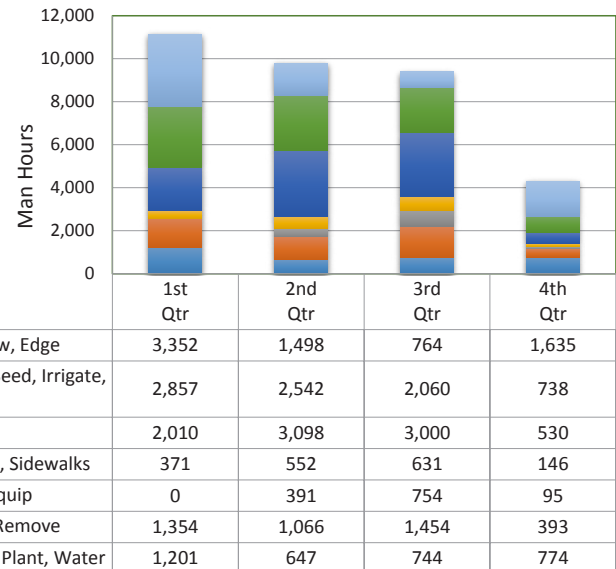
Construction/Renovation Project Summary

| 2019/2020 | 1st FY Qtr | | 2nd FY Qtr | | 3rd FY Qtr | | 4th FY Qtr | | FY Totals | |
|---------------------------|------------|-------------------|------------|-------------------|------------|-------------------|------------|-------------------|------------|-------------------|
| | # Projects | Value of Projects | # Projects | Value of Projects | # Projects | Value of Projects | # Projects | Value of Projects | # Projects | Value of Projects |
| Beginning Active Projects | 299 | \$ 1,293,087 | 238 | \$ 1,467,334 | 218 | \$ 1,451,781 | 211 | \$ 807,397 | 299 | \$ 1,293,087 |
| Added Projects | 30 | \$ 665,511 | 40 | \$ 299,116 | 58 | \$ 185,050 | 26 | \$ 104,847 | 154 | \$ 1,254,524 |
| Completed Projects | 91 | \$ 491,264 | 60 | \$ 314,669 | 65 | \$ 829,434 | 59 | \$ 858,540 | 275 | \$ 2,493,907 |
| Ending Active Projects | 238 | \$ 1,467,334 | 218 | \$ 1,451,781 | 211 | \$ 807,397 | 178 | \$ 53,704 | 178 | \$ 53,704 |

Accomplishments & Highlights 2019/2020

- Purchased propane power zero turn mower as part of ongoing clean energy initiative
- Improved football game tailgate clean up by expanding game day porter service and setting up more trashcans in strategic locations
- Performed two rounds of sidewalk grinding to remove small imperfections and uneven spots on sidewalks around campus
- Replaced over 2,000 SF of sidewalks as part of overall hardscape improvements
- Implemented new turf care program to further improve playing surfaces of athletic fields
- Established and implemented response plan to continue to maintain campus during COVID-19 shutdown as part of Grounds/Greenhouse essential duties
- Purchased and planted trees around campus as part of continuing tree replacement program

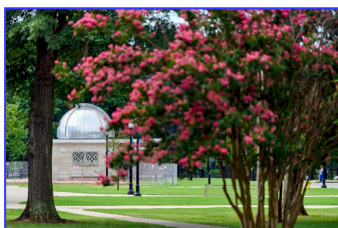
Grounds Services:
Labor by Activity
2019/2020



Total Hours: 34,657

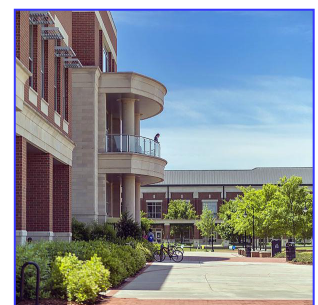
Goals 2020/2021

- Continue sidewalk/hardscape improvements
- Continue re-landscaping areas of campus
- Improve irrigation system on intramural fields
- Perform second round of drainage improvements to soccer field
- Continue tree replacement program
- Explore ways to improve mulching processes for landscape beds on campus
- Add riprap around drainage culverts to help prevent erosion
- Continue training



PERFORMANCE MEASURES: Grounds Services

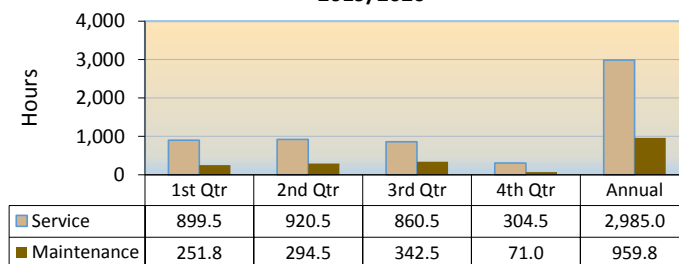
| 2019/2020 | #Work Orders Completed | | Man Hours | | Avg Man Hours/WO | |
|--------------------|------------------------|--------|-----------|--------|------------------|--------|
| | Mid-Year | Annual | Mid-Year | Annual | Mid-Year | Annual |
| Maintenance | 28 | 61 | 170 | 284 | 6.1 | 4.7 |
| Preventive (PM) | 5 | 15 | 21 | 95 | 4.2 | 6.3 |
| Corrective (CM) | 23 | 46 | 149 | 189 | 6.5 | 4.1 |
| Service | 294 | 561 | 4,827 | 56,317 | 16.4 | 100.4 |
| Routine | 294 | 519 | 4,827 | 36,566 | 16.4 | 70.5 |
| Annual | 0 | 42 | 0 | 19,751 | 0.0 | 470.3 |
| Total | 322 | 622 | 4,997 | 56,601 | 15.5 | 91.0 |



Accomplishments & Highlights 2019/2020

- Upgraded Motor Pool fleet with replacements of 3 minivans, 2-12-passenger vans, and 1 sedan
- Added 2 trucks to Motor Pool fleet to give additional options to help campus community with hauling and moving items
- Continued on site emissions testing
- Continued work with TDEC Division of Underground Storage Tanks to ensure tanks in compliance with all regulations
- Continued training
- Continued to improve reservation process of Motor Pool Vehicles
- Developed and implemented COVID-19 response plan for Motor Pool operations and fleet reservations

Motor Pool Man Hours
2019/2020



Goals 2020/2021

- Continue upgrading of Motor Pool fleet vehicles
- Monitor and look for continual improvement of Motor Pool fleet reservation process
- Continue to upgrade shop equipment to maximize efficiency
- Continue to work with FSD Accounting to improve billing processes

PERFORMANCE MEASURES: Motor Pool

| 2019/2020 | #Work Orders Completed | | Man Hours | | Avg Man Hours/WO | |
|-----------------|------------------------|--------|-----------|---------|------------------|--------|
| | Mid-Year | Annual | Mid-Year | Annual | Mid-Year | Annual |
| Maintenance | 380 | 656 | 546.3 | 959.8 | 1.4 | 1.5 |
| Preventive (PM) | 373 | 643 | 538.3 | 933.3 | 1.4 | 1.5 |
| Corrective (CM) | 7 | 13 | 8.0 | 26.5 | 1.1 | 2.0 |
| Service | 445 | 797 | 1,820.0 | 2,985.0 | 4.1 | 3.7 |
| Total | 825 | 1,453 | 2,366.3 | 3,944.8 | 2.9 | 2.7 |

- Continue training



Custodial Services

Connie Hagberg Brenda Wunder

Accomplishments & Highlights 2019/2020

- Execution of new contract with Custodial Services contractor
- Completed safety and administrative training sessions
- COVID-19 related tasks include:
 - Updated Campus Cleaning Standards & Frequencies to include CDC recommendations
 - Product review and inventory required in preparation of fully re-opening campus for fall semester
 - Distribution of hand sanitizing Stations throughout campus
 - Review additional cleaning of Classroom Inventory by Building, Science Labs and Walker Library
 - Plans for COVID-19 Cleaning Team for high-touch point cleaning and disinfection kit distribution to departments, science and academic labs, and computer labs for Fall semester

| E&G Space 2019/2020 | Gross Square Feet | Cleanable Square Feet | % Cleanable Square Feet |
|---------------------------------------|----------------------|--------------------------|----------------------------|
| Facilities Services Department | | | |
| In-house | 464,964 | 135,164 | 6% |
| Contract Labor | 2,392,284 | 1,714,235 | 73% |
| Murphy Center Complex | | | |
| In-house | - | - | 0% |
| Contract Labor | 595,019 | 500,282 | 21% |
| Total | 3,452,267 | 2,349,681 | 100% |

Goals 2020/2021

- Ensure custodial contractor service is performed according to contract terms
- Inspection of facilities for cleanliness according to Cleaning Standards and Frequencies
- Based on COVID-19 cleaning recommendations and campus Inventory reports, hire supplementary employees through contractor service to perform tasks in campus facilities
- Distribute disinfection kits to specific areas and faculty; continue service of the kits (weekly pick-up/service/distribution of microfiber cloths, supplying additional disinfection product as needed)
- Service hand sanitizer stations; continue review of high pedestrian traffic areas
- Continue review of updated CDC Recommendations for cleaning services for educational/public facilities
- Completion of mandatory and recommended training sessions, as required by the University and Facilities Services Department/EH&S
- Bring the New Academic Building on-line for service

Accomplishments & Highlights 2019/2020

- Served with the EH&S team in initial summary review of safety training topics for the campus community, Facilities Services Department, and other specific campus departments, as required by law and/or recommended due to campus job responsibilities (including academics, administration and staff)
- Coordinated topic-specific safety training (requiring both classroom and hands-on instruction) for other campus departments including Murphy Center, Production Services, Recreation Center, Photography, Student Union, Tennessee Miller Coliseum, and Information Technology
- Assigned as an Administrator of the Safe Colleges program; explored the training sessions, and program capabilities/options

Goals 2020/2021

- Continue to work closely with the EH&S Team regarding safety training updates
- Serve as Administrator/Department Coordinator for Safe Colleges; input training assignments according to Recommended Training List prepared by EH&S; input any off-line training completed by Facilities Services employees; prepare training completion/outstanding reports, as necessary, for review
- Review and schedule any specialized safety training topics as requested by FSD Directors or Supervisors

| FSD Employees Training Records 2019/2020 | | Leadership/Professional Development | | | Technical Training | | |
|---|----------------------------|-------------------------------------|--------------|-------------|------------------------|--------------|------------|
| By Training Type | # Employees (Full-Time) | # Employees Trained | Total Hours | | # Employees Trained | Total Hours | |
| | | | In-House | Conference | | In-House | Conference |
| Central Administration | | | | | | | |
| -Assistant Vice President | 2 | 2 | 3 | 40 | 2 | 3 | 0 |
| -Accounting Information Services | 5 | 4 | 15 | 0 | 5 | 7.4 | 0 |
| -Employee Development | 1 | 1 | 1.7 | 0.0 | 1 | 1.4 | 0 |
| Engineering Services | | | | | | | |
| -Director | 1 | 1 | 1.7 | 0 | 1 | 1.4 | 0 |
| -Center for Energy Efficiency | 2 | 2 | 15.9 | 0 | 2 | 2.5 | 0 |
| -Work Orders | 4 | 3 | 4 | 0 | 4 | 5.6 | 0 |
| -Civil/Environmental Services | 5 | 5 | 8.4 | 0.0 | 5 | 14.2 | 0 |
| -Industrial Hygiene & Lab Safety | 3 | 3 | 5.1 | 3 | 3 | 11.2 | 56 |
| -Life Safety & Emergency Management | 4 | 3 | 4 | 0.0 | 4 | 25.1 | 0 |
| -Systems Engineering | 1 | 1 | 1 | 0 | 1 | 1.4 | 0 |
| -Key Shop | 5 | 5 | 7 | 0 | 5 | 6.2 | 0 |
| Building Services | 14 | 11 | 13 | 0 | 14 | 35.7 | 0 |
| Construction Administration | 5 | 5 | 5.9 | 0 | 5 | 5.6 | 0 |
| Construction Renovation | 4 | 3 | 24.1 | 3.9 | 4 | 6.1 | 0 |
| Energy Services | 21 | 21 | 19 | 0 | 21 | 38.9 | 0 |
| Grounds Services/Motor Pool | 24 | 23 | 28.2 | 0 | 23 | 27.1 | 0 |
| Custodial Services | 16 | 15 | 25 | 0 | 16 | 22.7 | 0 |
| TOTALS | 117 | 108 | 182.7 | 46.9 | 116 | 215.5 | 56 |

| Number of Employees per Total Hours Trained 2019/2020 | # Employees (Full-Time) | 0 Hrs | 1-10 Hrs | 11-20 Hrs |
|--|----------------------------|----------|------------|-----------|
| Central Administration | | | | |
| -Assistant Vice President | 2 | | 1 | 0 |
| -Accounting Information Services | 5 | | 4 | 1 |
| -Employee Development | 1 | | 1 | 0.0 |
| Engineering Services | | | | |
| -Director | 1 | | 1 | 0 |
| -Center for Energy Efficiency | 2 | | 1 | 1 |
| -Work Orders | 4 | | 4 | 0 |
| -Civil/Environmental Services | 5 | | 5 | 0 |
| -Industrial Hygiene & Lab Safety | 3 | | 1 | 0 |
| -Life Safety & Emergency Management | 4 | | 3 | 1 |
| -Systems Engineering | 1 | | 1 | 0 |
| -Key Shop | 5 | | 5 | 0 |
| Building Services | 14 | | 14 | 0 |
| Construction Administration | 5 | | 5 | 0 |
| Construction Renovation | 4 | | 2 | 2.0 |
| Energy Services | 21 | | 21 | 0 |
| Grounds Services/Motor Pool | 24 | | 24 | 0 |
| Custodial Services | 16 | | 16 | 0 |
| TOTALS | 117 | 0 | 109 | 5 |

SafeColleges Training



These training opportunities available for campus departments, and more, are provided to enhance job performance, promote safety, and comply with laws and regulations.

Excerpts from Campus Master Plan 2015 - 2025

Facility Assessment: Education and General Use Facilities

Like many universities and colleges, MTSU has simultaneously experienced significant growth and increased fiscal constraints. These conditions have led to postponement of major repairs and replacement of facilities and infrastructure. This delay, combined with aging facilities, leads to a degradation of the facilities and an increased backlog of maintenance and capital renewal projects commonly referred to as deferred maintenance.

| | Building Name | Building ID | Year Constructed | Gross SF | Assignable SF | Current Condition (1) | Site Suitability (2) | Physical Building Rating (3) | Existing Program Suitability (4) |
|-------|--|-------------|------------------|----------|---------------|-----------------------|----------------------|------------------------------|----------------------------------|
| ALOF | Alumni Office (2263 Middle Tennessee Boulevard) | 24-172 | 1948 | 2,796 | 1,814 | 94.3 | M | A | A |
| ALUM | Alumni Relations House (2259 Middle Tennessee Blvd.) | 24-174 | 2008 | 10,105 | 5,435 | 94.7 | M | A | A |
| BAS | Business & Aerospace Building | 24-091 | 1997 | 184,931 | 102,233 | 90.1 | M | A | A |
| BDA | Boutwell Dramatic Arts | 24-031 | 1964 | 56,164 | 36,757 | 79.6 | M | C | D |
| BLH | 1417 East Main Street (Center for Historic Preservation) | 24-097 | 1958 | 3,041 | 2,191 | 71.5 | L | D | D |
| BRAGG | Bragg Media and Entertainment Building | 24-083 | 1990 | 91,114 | 52,325 | 89.3 | M | B | C |
| CAB | Cope Administration Building | 24-034 | 1965 | 50,976 | 29,325 | 85.3 | M | B | A |
| CH | College Heights Chapel | 24-197 | 1959 | 9,362 | 7,828 | 75.4 | M | C | C |
| CKNB | Cason-Kennedy Nursing Building | 24-084 | 1994 | 31,494 | 18,259 | 96.5 | M | A | A |
| COE | College of Education Building | 24-229 | 2010 | 91,206 | 50,989 | 100 | M | A | A |
| DSB | Davis Science Building | 24-041 | 1967 | 75,258 | 40,966 | 81.2 | H | B | A |
| DYS | Tennessee Center for the Study & Treatment of Dyslexia | 24-155 | 2000 | 7,169 | 4,146 | 96.0 | H | A | A |
| EHS | Ellington Human Sciences | 24-025 | 1962 | 15,509 | 10,619 | 85.5 | M | B | D |
| EZEL | Ezell Hall | 24-072 | 1973 | 52,452 | 32,775 | 66.4 | L | D | D |
| FAIR | Fairview Building | 24-149 | 1962 | 38,250 | 22,960 | 89.4 | M | B | A/C |
| FH | Forrest Hall | 24-017 | 1954 | 14,177 | 8,807 | 84.0 | L | D | A |
| FSHP | Farm Shop | 24-232 | 2011 | 9,772 | 9,396 | 96.1 | H | A | A |
| GH | Greenhouse | 24-073 | 1975 | 4,774 | 4,709 | 80.1 | L | D | B |
| HARR | 1416 East Main Street (Center for Historic Preservation) | 24-130 | 1925 | 2,454 | 1,478 | 80.2 | L | D | D |
| HC | Horticulture Facility | 24-093 | 1997 | 9,002 | 6,458 | 87.1 | L | D | C |
| HONR | Paul W. Martin, Sr. Honors Building | 24-166 | 2003 | 20,720 | 11,601 | 98.5 | M | A | A |
| ING | Sam H. Ingram Building (2269 Middle Tennessee Blvd.) | 24-169 | 1951 | 27,498 | 17,838 | 96.8 | M | A | A |
| JACK | Tom H. Jackson Building1 | 24-003 | 1911 | 8,224 | 4,825 | 84.2 | H | B | B |
| JH | Jones Hall1 | 24-005 | 1921 | 39,855 | 21,103 | 84.6 | H | B | A |
| JUB | James Union Building | 24-015 | 1952 | 58,354 | 36,626 | 83.6 | H | B | A |
| KOM | Kirksey Old Main1 | 24-002 | 1911 | 83,706 | 45,947 | 70.9 | H | C | A |
| KUC | Keathley University Center | 24-042 | 1967 | 122,671 | 80,518 | 85.9 | M | B | B |
| LIB | James E. Walker Library | 24-094 | 1998 | 254,596 | 171,275 | 96.8 | M | A | A |
| LRC | Ned McWherter Learning Resources Center | 24-074 | 1975 | 65,865 | 38,296 | 93.8 | M | A | A |
| LYTL | 1114 East Lytle Street (Lytle House) | 24-171 | 1948 | 1,874 | 1,401 | 89.4 | M | B | B |
| MB | McFarland Building | 24-054 | 1969 | 10,285 | 6,424 | 90.5 | M | A | A |
| MD | Main Dairy | 24-230 | 2011 | 22,190 | 18,987 | 98.8 | H | A | A |
| MEC | Miller Education Center | 24-241 | 1999 | 126,839 | 105,196 | 93.5 | M | A | A |
| MGB | E.W. Midgett Building | 24-076 | 1959 | 18,615 | 11,126 | 62.7 | L | D | D |
| NB3 | Nursing Building Addition | 24-84A | 2006 | 24,044 | 13,814 | 97.5 | M | A | A |
| OBS | Observatory | 24-194 | 2007 | 724 | 363 | 96.9 | M | A | A |
| PCS | Pittard Campus School1 | 24-007 | 1927 | 47,487 | 29,526 | 79.7 | H | C | B |
| PH | Peck Hall | 24-044 | 1968 | 110,501 | 53,126 | 73.0 | M | C | D |
| PHLP | Project Help | 24-088 | 1996 | 4,568 | 3,158 | 90.2 | M | A | B |
| PKS | Parking Services Building | 24-158 | 1951 | 12,099 | 7,441 | 86.6 | L | D | A |
| PRES | President's Home1 | 24-001 | 1911 | 7,794 | 7,015 | 87.2 | H | B | A |
| PSB | Printing Services Building | 24-175 | 2005 | 4,320 | 3,659 | 97.4 | M | A | A |
| ROTX | ROTC Annex | 24-010 | 1942 | 10,143 | 8,477 | 63.9 | L | D | B |
| SAG | Stark Agribusiness and Agriscience Center | 24-045 | 1968 | 25,463 | 15,340 | 76.7 | M | C | A |
| SCI | Science Building | 24-249 | 2014 | 263,670 | 144,540 | 100 | M | A | A |
| SFA | Saunders Fine Art | 24-022 | 1959 | 32,788 | 19,811 | 78.0 | M | C | D |
| SSAC | Student Services and Admissions Center | 24-245 | 2012 | 64,500 | 33,002 | 100 | M | A | A |
| STU | Student Union | 24-238 | 2010 | 210,846 | 111,153 | 100 | M | A | A |
| TB | Telescope Building | 24-106 | 1986 | 412 | 346 | 80.1 | L | D | D |
| TCM | Telecomm Building | 24-089 | 1996 | 10,267 | 5,959 | 91.8 | M | A | C |
| TLC | Tennessee Livestock Center | 24-070 | 1972 | 157,316 | 91,738 | 85.6 | L | D | A |
| TODD | Andrew L. Todd Hall | 24-019 | 1958 | 114,388 | 65,666 | 96.4 | H | A | A |
| VA | Vocational Agriculture | 24-080 | 1979 | 6,047 | 5,163 | 84.3 | L | D | C |
| VET | Voorhies Engineering Technology | 24-009 | 1942 | 39,289 | 28,488 | 78.9 | L | D | C |
| WANH | 209 North Baird Lane (Internal Audit) | 24-103 | 1958 | 1,243 | 900 | 78.4 | L | D | B |
| WMB | Wright Music Building | 24-081 | 1980 | 31,357 | 20,802 | 82.5 | M | B | B |
| WPS | Wiser-Patten Science Hall | 24-008 | 1932 | 41,116 | 24,612 | 82.8 | H | B | A |
| WSC | Wood - Stegall Center (University Advancement) | 24-156 | 2001 | 10,142 | 4,630 | 98.6 | M | A | B |

Legend:

- (1) Current Condition Score (0-100) determined by the Physical Facilities Survey Score as of August 2015 (PFIS).
- (2) Site Suitability Score (High, Medium, Low) determined by factors including various land uses, code issues, and original campus structure.
- (3) Physical Building Rating (A-D) determined by combining the Current Condition and Site Suitability Scores as shown in the matrix.
- (4) Existing Program Suitability (A-D) determined by the factors including quantity and quality of space and the fit of programs to the design.

Deferred Maintenance:

| Current Condition | | | | |
|--------------------------|--------|------|---------|------|
| Site Suitability | | | | |
| | | > 90 | 80 - 90 | < 80 |
| | High | A | B | C |
| | Medium | A | B | C |
| | Low | C | D | D |
| Physical Building Rating | | | | |

Table A-2 Educational and General (E&G, Maintenance, Utilities, & Athletics)

| Physical Building Rating | Square Feet | 20-Year Deferred Maintenance (1) |
|-------------------------------------|------------------|----------------------------------|
| A | 1,773,836 | \$35,459,630 |
| B | 886,512 | \$88,670,198 |
| C | 422,487 | \$46,857,416 |
| D | 240,427 | \$22,538,570 |
| Other | 11,540 | \$865,008 |
| Infrastructure (2) | | \$48,597,706 |
| 20-Year Capital Renewal Funding (3) | | (\$56,968,010) |
| Total | 3,334,802 | \$186,020,518 |

MTSU Capital Maintenance

Project Lists per FY Capital Budget Request

| 2018 - 2019 | Priority | Project Name | FY 18/19 Request | Appropriated Funding | Project Status |
|-------------|----------|--|------------------|----------------------|-----------------|
| | 1 | Mechanical and Electrical Updates for Data and Communication Centers | \$ 1,212,000 | \$ 1,212,000 | Funded |
| | 2 | Miller Ed Center Roof Replacement | \$ 1,500,000 | \$ 1,500,000 | Funded |
| | 3 | Steam/Condensate & Manhole Repair/Replacement Phase II | \$ 2,350,000 | \$ 2,350,000 | Funded |
| | 4 | Domestic Water & Sewer Systems Updates Phase I | \$ 1,010,000 | \$ 1,010,000 | Funded |
| | 5 | Maintenance Complex Roofs Replacement | \$ 1,048,000 | \$ 1,048,000 | Funded |
| | 6 | Several Buildings Smoke Evacuation Repair & Retrocommissioning | \$ 500,000 | \$ 500,000 | Funded |
| | 7 | Elevator Modernization Phase II | \$ 550,000 | \$ 550,000 | Funded |
| | Total: | | \$ 8,170,000 | \$ 8,170,000 | |
| 2019 - 2020 | Priority | Project Name | FY 19/20 Request | Appropriated Funding | Project Status |
| | 1 | Several Buildings Roof Replacements | \$ 600,000.00 | \$ 600,000.00 | Funded |
| | 2 | KOM Mechanical, HVAC, Fire Protection, Lighting & Ceiling Upgrades | \$ 5,600,000.00 | \$ 5,600,000.00 | Funded |
| | 3 | Stark Ag/Police Station Mechanical & HVAC Upgrades | \$ 1,965,000.00 | \$ 1,965,000.00 | Funded |
| | 4 | Campus Stormwater BMP Phase I | \$ 785,000.00 | \$ 785,000.00 | Funded |
| | 5 | Sidewalk Repair/Replacement Phase I | \$ 800,000.00 | \$ 800,000.00 | Not Funded |
| | 6 | Miller Education Center Boiler Replacement | \$ 400,000.00 | \$ 400,000.00 | Funded |
| | Total: | | \$ 10,150,000 | \$ 10,150,000 | |
| 2020 - 2021 | Priority | Project Name | FY 20/21 Request | Appropriated Funding | Project Status |
| | 1 | Murphy Center Window Repair/Replacement | \$ 4,600,000.00 | \$ 4,600,000.00 | Funded |
| | 2 | Elevator Modernization Phase III | \$ 2,000,000.00 | \$ - | Not Funded |
| | 3 | Water & Sewer System Updates Phase II | \$ 490,000.00 | \$ - | Not Funded |
| | 4 | Several Buildings Roof Replacements | \$ 950,000.00 | \$ - | Not Funded |
| | 5 | Steam/Condensate & Manhole Repair/Replacement Phase III | \$ 1,400,000.00 | \$ - | Not Funded |
| | 6 | Sidewalk Repair/Replacement Phase I | \$ 610,000.00 | \$ - | Not Funded |
| | Total: | | \$ 10,050,000.00 | \$ 4,600,000.00 | |
| 2021 - 2022 | Priority | Project Name | FY 21/22 Request | Appropriated Funding | Project Status |
| | 1 | Campus Wide Utilities Phase 1 | \$ 1,139,000 | \$ - | Funding Request |
| | 2 | Several Buildings Elevator Modernization Phase 1 | \$ 950,000 | \$ - | Funding Request |
| | 3 | Campus Wide Life Safety Systems Upgrade Phase 1 | \$ 400,000 | \$ - | Funding Request |
| | 4 | Cope Building Roof Replacement | \$ 600,000 | \$ - | Funding Request |
| | 5 | Science Building HVAC & Exhaust System Upgrades | \$ 2,000,000 | \$ - | Funding Request |
| | 6 | Several Buildings Elevator Modernization Phase 2 | \$ 885,000 | \$ - | Funding Request |
| | 7 | Campus Wide Life Safety Systems Upgrade Phase 2 | \$ 1,285,000 | \$ - | Funding Request |
| | 8 | Campus Wide Utilities Phase 2 | \$ 1,816,000 | \$ - | Funding Request |
| | 9 | College Heights Electrical Upgrades | \$ 400,000 | \$ - | Funding Request |
| | 10 | Tennessee Livestock Roof Replacement/Refurbishment | \$ 490,000 | \$ - | Funding Request |
| | Total: | | \$ 9,965,000 | \$ - | |



Funded by a fee initiated by the MTSU student body, administered by the Division of Student Affairs, and supported by the Tennessee Board of Regents, the intent of the MTSU Sustainable Campus Fee Program is to decrease consumption of non-renewable energy with a portion directed for purchasing 'green power' to facilitate production of electricity from wind, solar power, and methane gas as a clean alternative to traditional energy sources. The reminder of the funds are used for local campus projects.

MTSU Sustainable Campus Fee (SCF) Program - 2006-2020

| Approved Projects | 2006-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-2020 | Totals |
|--|--------------|------------|------------|------------|-----------|-----------|--------------|
| Green Power Purchase | \$ 1,900,000 | \$ 150,000 | \$ 150,000 | \$ 150,000 | \$ 50,000 | \$ 50,000 | \$ 2,450,000 |
| Air Handling Units Energy Upgrades Rec | | | | | | \$ 70,000 | \$ 70,000 |
| Air Flow Meter Installations | \$ - | | \$ 9,000 | \$ 3,500 | | | \$ 12,500 |
| Alternative Fuel- Biodiesel Production Project | \$ 2,500 | | | | | | \$ 2,500 |
| Alternative Fuel- Convert a Bus to Run on Used Cooking Oil | \$ 15,000 | | | | | | \$ 15,000 |
| Alt Fuel- Convert Vehicle to Operate on Natural Gas/Installation of Compressed Gas Station | \$ 8,500 | | | | | | \$ 8,500 |
| Alt Fuel- Comparing the Pollutant Emissions for Various Alt Fuels | \$ - | | | \$ 5,944 | | | \$ 5,944 |
| Alt Fuel- Development of Flex-Fueled Engine (ph1 solar,ph2 hydrogen) | \$ 54,000 | | | | | | \$ 54,000 |
| Alternative Fuel- Hybrid/Alternative Fuel Vehicle Project | \$ 47,850 | | | | | | \$ 47,850 |
| Alternative Fuel- Increasing Production Capacity of Biodiesel | \$ 9,965 | | | | | | \$ 9,965 |
| Alternative Fuel- Kenaf Agriculture for Sustainable Community | \$ 5,935 | | | | | | \$ 5,935 |
| Alternative Fuel- Multi-fuel Bus Emission Testing Project | \$ 10,944 | | | | | | \$ 10,944 |
| Alternative Fuel- Propane Powered Mower (5) | \$ 12,045 | \$ 11,178 | | \$ 13,000 | \$ 12,600 | \$ 13,600 | \$ 62,423 |
| Alternative Fuel- Running Vehicles off Wood Gasification | \$ 4,500 | | | | | | \$ 4,500 |
| Bee Keeping and Colony Collapse | \$ - | \$ 10,000 | | | | | \$ 10,000 |
| Battery Operated Grounds Equipment (40V lithium-ion) | \$ - | | \$ 2,500 | | | | \$ 2,500 |
| Biofuels- Cellulose Production/Optimization-Conversion to Ethanol | | | | | \$ 3,980 | | \$ 3,980 |
| Biofuels- Conversion of Oyster Shells into Catalyst for Biofuels | | | | | \$ 3,900 | | \$ 3,900 |
| Biofuels- Ultrasonic Generator and Biotech Applications Research | \$ - | \$ 6,360 | \$ 4,820 | | | | \$ 11,180 |
| Biorenewable Solvents for Pigment Extraction and Textile Dyeing | | | | | \$ 380 | | \$ 380 |
| Blast Hand Dryers for REC/ Hand Dryers (LIB,FAIR) | \$ 11,270 | | \$ 9,107 | | | | \$ 20,377 |
| Boiler Sequencing Controller- M2G (ING) | \$ 7,698 | | | | | | \$ 7,698 |
| BTU Meters for Chillers at Chiller Plant and Satellite | \$ - | | | \$ 9,000 | | | \$ 9,000 |
| Bypass Feeders (15 buildings) | \$ - | | \$ 9,800 | | | | \$ 9,800 |
| Change Hot Water Valve Tops in Murphy Center | \$ 6,502 | | | | | | \$ 6,502 |
| Chilling Plant- Pressure Gauges Installation | \$ 1,000 | | | | | | \$ 1,000 |
| Clean/Replace Coils AMG, BRAGG, FH, VET, JUB, FAIR, KUC, TCM, BDA, WPS, TLC, MB, MC, CKN, KOM,BAS,KOM,JH,Todd,KUC,many buildings | \$ 74,651 | | | \$ 9,500 | | \$ 4,000 | \$ 88,151 |
| Closed Loop Sediment Filtering System (KUC, LIB, MC, TODD, SAG, VET, LRC, BRAGG, JH, CAB, CKNB, EHS, BDA, BAS, WMB, other Bldgs) | \$ 201,550 | \$ 9,800 | | | \$ 10,000 | | \$ 221,350 |
| Creating a Bicycle Friendly Campus/shelters PH (1)/ shelter PH (1) | \$ 88,132 | | | \$ 9,000 | \$ 11,500 | \$ 11,500 | \$ 120,132 |
| Dehumidifier Project in VET 108 | \$ 13,600 | | | | | | \$ 13,600 |
| Development of a Biosensor to Detect Hydrogen Production | \$ 4,250 | | | | | | \$ 4,250 |
| Energy Analysis- Building Heating/AC Energy Efficiency Study | \$ 1,500 | | | | | | \$ 1,500 |
| Energy-Conduct Light Level Studies in TODD, BRAGG, BAS, PH | \$ 5,500 | | | | | | \$ 5,500 |
| Energy - Data Loggers for Energy Efficiency Analysis | \$ 6,000 | | \$ 2,060 | | | | \$ 8,060 |
| Energy -Flow Meter; Compact Infrared Cameras for Energy Audits | \$ 3,450 | \$ 9,900 | | \$ 5,000 | | | \$ 18,350 |
| Energy Analysis- Infr Thermometer Guns/Sensors&Monitoring Tools | \$ 500 | | | \$ 4,905 | | | \$ 5,405 |
| Energy Analysis- Siemens Energy Analysis for SCI | \$ 12,000 | | | | | | \$ 12,000 |
| Energy Analysis- Steam Trap Ultrasonic Test Equipment | \$ 2,600 | | | | | | \$ 2,600 |
| Energy Analysis- Test and Balance Hot Water System (KUC) | \$ 12,716 | | | | | | \$ 12,716 |
| Energy Books Purchase for LIB and Facilities Offices | \$ 6,323 | | | | | | \$ 6,323 |
| Energy Conservation Project in BDA: Motion Sensors | \$ 4,568 | | | | | | \$ 4,568 |
| Energy Efficient Replacement Washer | \$ - | | | \$ 11,617 | | | \$ 11,617 |
| Flowmeter BTUmeter for MC/VET/AMG/RH | | | | | \$ 9,000 | \$ 27,000 | \$ 36,000 |
| Hot/Chilled Water Valve Assessment | \$ 5,000 | | | | | | \$ 5,000 |
| HVAC Controls Replacement (WMB) | \$ 29,950 | | | | | | \$ 29,950 |
| HVAC Pleated Filter Projects- SCI, JH, FAIR, BRAGG, CKNB, Horse Science, HOB, WMB, ROTC, COE, HONR, Public Safety | \$ 14,081 | \$ 5,918 | | | | | \$ 19,999 |
| HVAC Pocket Filter- Multiple Buildings (21+)/ Synthetic CKN,PH | \$ 137,849 | | \$ 10,175 | \$ 2,976 | \$ 3,905 | | \$ 154,905 |
| Install FilterPave Porous Pavement in Parking Lot on Champion Way | \$ 18,665 | | | | | | \$ 18,665 |
| Install Variable Frequency Drives- JH, LIB, BDA | \$ 27,802 | \$ 7,490 | \$ 18,554 | | | | \$ 53,846 |
| Install Variable Speed Drive Motor Additions - 2 phases Rec Center | | | | | \$ 30,994 | | \$ 30,994 |
| Install Milk Cooling System at the MTSU Farm | \$ 17,500 | | | | | | \$ 17,500 |
| Install a Geothermal Cooler System on the MTSU Farm | \$ 27,150 | | | | | | \$ 27,150 |
| Installation of Programmable Thermostats in F/S Maintenance Shops | \$ 1,200 | | | | | | \$ 1,200 |
| Installation of Variable Speed Compressor in COGN | \$ 24,000 | | | | | | \$ 24,000 |
| Insulate Pipes- Multiple Buildings (19+) | \$ 102,209 | \$ 14,200 | | | \$ 16,200 | | \$ 132,609 |
| Insulated Garage Door Replacement- Motor Pool | \$ 3,950 | | | | | | \$ 3,950 |
| ITD-AMX Resource Mgmt Suite Sys Upgrade; Virtual Mgmt Software | \$ 7,500 | \$ 10,000 | | | | | \$ 17,500 |
| ITD- "Lights out" Cope Data Center | \$ 1,316 | | | | | | \$ 1,316 |
| Lab Upgrade of Instr (ICP-OES) Donated by TN Health Dept. Lab | \$ - | | | \$ 7,400 | | | \$ 7,400 |
| Lamp Crusher | \$ 4,000 | | | | | | \$ 4,000 |
| Laser Alignment Devices | \$ 5,681 | | | | | | \$ 5,681 |
| Light Switch Plate Labels | \$ 2,500 | | | | | | \$ 2,500 |

(Continued on page 23)

| Approved Projects | 2006-14 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | | Totals |
|--|---------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------|
| Lighting- Ann Campbell Early Learning Center LEDs | | | | | \$ 5,696 | | \$ 5,696 |
| Lighting- Retrofits Mechatronics Lab, MTSU Airport Ramp Lights | \$ - | | \$ 9,050 | | \$ 4,300 | | \$ 13,350 |
| Lighting- Retrofitted LEDs/ Outside Lamps : Old Main Circle, Walnut Grove, Rutherford Lot, E Alumni Dr, Greek Row, Ezell, Womack area | | | | | \$ 39,412 | \$ 39,600 | \$ 79,012 |
| Lighting- Occupancy Sensors Honors Building | \$ 3,372 | | | | | | \$ 3,372 |
| Lighting Projects LEDs- LIB Atrium; REC Cardio Room/indoor pool; BRAGG & PH; studio BRAGG & LRC; VET; BAS S lobby; LRC 221; WMB Hinton Hall; VET 120 lab, LIB student area | \$ 113,338 | \$ 5,930 | \$ 18,377 | \$ 38,144 | | \$ 5,600 | \$ 181,389 |
| Lighting- Re-lamp CKNB (existing portion) and FAIR | \$ 61,200 | | | | | | \$ 61,200 |
| Lighting- Replacement of Incandescent Lamps in MC | \$ 5,729 | | | | | | \$ 5,729 |
| Lighting- Re-lamp MTSU Parking Garages with LEDs | | | | | \$ 36,658 | | \$ 36,658 |
| Manhole Cover Replacement | | | | \$ 6,600 | | | \$ 6,600 |
| Microfiber Cleaning System | | | | | \$ 1,296 | | \$ 1,296 |
| Outside Air Damper with AFM Station included for KOM, BAS, Bldgs/ BAS | | | | | \$ 40,000 | \$ 20,000 | \$ 60,000 |
| Permeable Pavers for Sustainable Learning Environment (FH) | \$ 13,050 | | | | | | \$ 13,050 |
| Poster Campaign and Earthwise Reusable Bag Project | \$ 18,160 | | | | | | \$ 18,160 |
| Pressure Differential Sensors for Monohan | | | | | \$ 4,000 | | \$ 4,000 |
| Protreat Mold Treatment for Air Handling Units | \$ 1,400 | | | | | | \$ 1,400 |
| Re-caulk Exterior Windows (DSB) | \$ 14,000 | | | | | | \$ 14,000 |
| Recycling- Community Drop-Off Upgrades | \$ 3,000 | | | \$ 5,500 | | | \$ 8,500 |
| Recycling Support for Special Events (7) | \$ 7,000 | \$ 3,500 | \$ 3,500 | \$ 3,500 | \$ 3,500 | \$ 3,500 | \$ 24,500 |
| Recycling Supplies for MTSU Recycling Program | \$ 66,500 | \$ 7,000 | \$ 4,000 | | \$ 3,500 | \$ 9,600 | \$ 90,600 |
| Recycling- Increase Behavior by Applying Behavior Sci Principles | \$ 1,300 | | | | | | \$ 1,300 |
| Recycling- Pickup Truck Purchase | \$ - | | \$ 14,000 | | | | \$ 14,000 |
| Recycling Pilot Program: Dorm Room Recycling Bins | \$ 9,000 | | | | | | \$ 9,000 |
| Recycling- Animation Contest with Recycling or Sustainability Theme | \$ - | | | \$ 750 | | | \$ 750 |
| Recycling- Promotion of SCF Program/RecycleMania | \$ 1,000 | | | | \$ 2,000 | | \$ 3,000 |
| Recycling- Technology Lab Resources | | \$ 1,800 | | | | | \$ 1,800 |
| Replace Older Motor with Energy Effic motor in HOB, WMB, SAG, MC, TLC | \$ 33,759 | \$ 10,784 | \$ 12,851 | | | | \$ 57,394 |
| Replace Older Pump with Energy Efficient Pump (KUC) | \$ 5,424 | | | | | | \$ 5,424 |
| Replacement of Exterior Windows (MB, HOB) | \$ 60,000 | | | | | | \$ 60,000 |
| Replacement of VFD for BAS HVAC Return Fan (ph- 1 of 5) | \$ - | | | \$ 9,900 | | | \$ 9,900 |
| Research- Eco-Friendly Bio-Composting of Horse Carcasses | \$ 31,140 | | | | | | \$ 31,140 |
| Research- Bring Green Chemistry to Campus (ph-I-V)(pHVI) | \$ 15,166 | \$ 3,089 | \$ 3,017 | \$ 3,250 | \$ 3,510 | | \$ 28,032 |
| Research- "Clickable" Polymers | \$ 600 | | | | | | \$ 600 |
| Research- Develop Novel Approach to Producing Biofuel | \$ 9,500 | | | | | | \$ 9,500 |
| Research- DRIPS Project (D and R into Pervious Surfaces) | \$ 13,500 | | | | | | \$ 13,500 |
| Research- Environmentally Benign Synthesis Using Electrochemistry | \$ - | | | \$ 3,100 | | | \$ 3,100 |
| Research- Pesticide Impacts on Soil Microbe Health | \$ - | | | \$ 8,500 | | | \$ 8,500 |
| Research- Sustainable Design: Recycling of Ginseng Plant Waste for Biofuel Using Pond Microbe | \$ - | | | \$ 9,000 | | | \$ 9,000 |
| Research- Turning Manure into Gold | \$ 1,000 | | | | | | \$ 1,000 |
| Restroom Flush Valves Replacement (LIB) | \$ - | | \$ 9,020 | | | | \$ 9,020 |
| ReRev Cardio System Elliptical Machines in REC | \$ 30,000 | | | | | | \$ 30,000 |
| Self-Sustainability Initiative Through Alternative Horticulture | \$ 10,000 | | | | | | \$ 10,000 |
| Server Consolidation/Visualization- Health Services | \$ 20,000 | | | | | | \$ 20,000 |
| Siemens Ctrls for Var Air Vol Boxes - LIB (26 boxes)/LIB (30 boxes) | | | | | \$ 10,560 | \$ 12,534 | \$ 23,094 |
| Solar Attic Fans in FH and EHS/ WH | \$ 28,932 | | | | | \$ 3,500 | \$ 32,432 |
| Solar- Big Belly Solar Trash Compactor (9)/software upgrade | \$ 12,000 | \$ 11,094 | \$ 11,789 | \$ 11,800 | | \$ 7,540 | \$ 54,223 |
| Solar- Golf Cart Conversion 1 and 2 (electric to solar) | \$ 24,380 | | | | | | \$ 24,380 |
| Solar- Install 8kW System | \$ 81,224 | | | | | | \$ 81,224 |
| Solar- Patio Umbrellas (2) / Picnic Table (2) | \$ - | \$ 4,500 | | | \$ 13,195 | \$ 13,700 | \$ 31,395 |
| Solar- Buy Organic Dyes for Organic Dye Sensitized Solar Cells | \$ 1,100 | | | | | | \$ 1,100 |
| Solar- Boat Project/ Student projects trailer | \$ 14,011 | | | | | \$ 5,000 | \$ 19,011 |
| Solar- WMTS-FM 88.3 Solar Power Supply Project | \$ 31,900 | | | | | | \$ 31,900 |
| Stwater Ctrl Proj- Rain Gardens, Bioremediation Ponds for MS4 | \$ 20,000 | \$ 18,859 | \$ 11,500 | \$ 5,000 | | | \$ 55,359 |
| Compliance/Maint, Bank stabilization, PKG Lot Run-Off, Native Plants | | | | | | | |
| Student Suitabilities Education Initiative | \$ 2,500 | | | | | | \$ 2,500 |
| Sub-Metering for Chilling Plant and MC | \$ 8,000 | | | | | | \$ 8,000 |
| Tree Planting Projects (6) | \$ 3,500 | \$ 5,000 | \$ 15,500 | \$ 12,500 | \$ 11,000 | \$ 8,000 | \$ 55,500 |
| Ultrasonic Transmitters (MGB) | \$ 18,130 | | | | | | \$ 18,130 |
| Water Conservation for Rural and Urban Citizens | \$ - | \$ 25,000 | | | | | \$ 25,000 |
| Water Refill Stations- SGA Resolution 7-14-F, Multiple bldgs (55 units) | \$ 9,532 | \$ 20,053 | \$ 31,532 | \$ 41,212 | \$ 25,200 | \$ 12,200 | \$ 139,729 |
| Y-pattern Valve Changeout- COGN | \$ 7,600 | | | | | | \$ 7,600 |
| Total: | \$ 3,776,349 | \$ 351,455 | \$ 360,152 | \$ 390,598 | \$ 356,286 | \$ 316,874 | \$ 5,551,714 |



Water Refill Stations



SCF promotional materials



Solar Picnic Table/Charging Station



Bike Shelters



Recycling bins



Landscaping



Big Belly Solar Trash Compactors

MIDDLE TENNESSEE STATE UNIVERSITY

EXPLORE LEARN BELONG APPLY QUICK LINKS

<https://www.mtsu.edu/coronavirus/>

MTSU RESPONSE to Coronavirus Disease

Home

Stay on Course

Return-to-Work Plan

Return to Campus FAQs

Employee COVID-19 Precautions

Student COVID-19 Precautions

MTSU COVID-19 Task Force

Key Decisions and Indicators

Schedule Changes

MTSU Student Health Services

Return to Floyd Stadium

MTSU Education Abroad

CARES Act Disclosures

Health Resources

MTSU Response to Coronavirus Disease

Active Cases

Last updated November 12, 2020 based upon information provided to MTSU Student Health Services.

Reporting Requirement

In order to keep Student Health Services informed on the campus community's status please fill out this [online form](#) for students, faculty, or staff who:

- Test positive for Covid-19 OR
- Have symptoms consistent with COVID-19 OR
- Have sought COVID-19 testing OR
- Are close contacts of positive COVID-19 persons

38 of 107 quarantine spaces on campus are currently occupied

Cleaning: UV lamps, electrostatic sprayers, hand sanitizing units, disinfectant supplies

Increased ventilation levels & Installed Merv 15 filters in specific areas

MTSU Facilities Services — Summary of Services Annual Report — 2019/2020

Actions 2019/2020: University and FSD Teamwork

The University faced several challenges dealing with the onset of COVID-19. From initial planning to support in dealing with the progressing pandemic, Facilities Services (FSD) was at the forefront of decisions and activities associated with campus facilities, operations, and EH&S (Environmental Health and Safety).

The following is a partial list of actions implemented associated with the Spring campus shut-down and/or the phased reopening in the Summer and Fall of 2020.

Plexiglas

- Ordered/installed Plexiglas in public interface areas
- Ordered installed Plexiglas in non-private office areas



Plexiglass barriers

Hand Sanitizer

- Ordered/distributed hand sanitizing stations in public areas in buildings
- Purchased/Distributed hand sanitizer to departments on demand (Purchasing)

Cleaning/Disinfecting

- Added custodial staff for increased disinfecting of classrooms at night and high touch areas of buildings throughout the day
- Provide disinfecting services in areas after an employee positive COVID-19 test as needed and directed by Health Services
 - disinfecting products
 - electrostatic sprayers
 - UV lamps
- Purchased/Provided hundreds of disinfecting kits to staff for individual disinfecting of high touch areas in labs and office areas
- Purchased/Provided disinfecting wipes to faculty for individual disinfecting of teacher stations in classrooms.

Ventilation

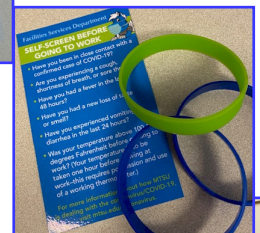
- Modify Ventilation schedules of air handling equipment to increase outside air (where possible)
- Increase filtration levels of air handling equipment (where possible)
- Added/adding ionizing and UV equipment to air handling systems in high risk areas (Health Services, Central Plant, Athletic areas)

Other

- Adhere to safety protocols including:
 - self screen
 - masking
 - hygiene
 - social distancing
- Provided COVID-19 training to campus via EH&S training platform
- Purchased/Provided thermometers to campus community for on-site employee health checks
- Performed water tests during the shutdown (for legionella)
- Perform on-site employee health checks
- Taken water fountains off-line
- Purchased/Provided masks to campus community
- Created and issued a safety protocol acknowledgment for contractors and vendors on campus
- Established/Implemented alternative work schedules for employees
- Established Occupancy limits for spaces and elevators across campus
- Installed signage in buildings across campus (Event Coordination)
- Implement safety protocols for employees
 - gathering on campus
 - traveling across campus in vehicles



Masks & screening



These actions have served, and will continue to serve, as critical elements in the overall University plans for operating the campus during the pandemic.

For more information about the University plans, see the University Coronavirus webpage at <https://www.mtsu.edu/coronavirus/>



Summary of Services 2019/2020 Annual Report

This report is produced by the FSD assistant vice president and staff and published by FSD Administration.

Linda Hardymon, Editor/Publishing Coordinator

FACILITIES SERVICES DEPARTMENT

Middle Tennessee State University
PO Box 32
Murfreesboro, Tennessee 37132

Phone 615-898-2414

Fax 615-898-5071

E-mail: cee@mtsu.edu

Web page: www.mtsu.edu/facserv/



Please Recycle!