



# SUMMARY OF SERVICES ANNUAL REPORT

*July 2018 — June 2019*



**MIDDLE  
TENNESSEE**  
STATE UNIVERSITY

***Facilities Services Department***

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**October 2019**

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



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

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***FY 18/19 has concluded and FY 19/20*** is well underway. The Maintenance and Operating (M&O) budget for Educational and General Facilities has remained fairly level. 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 18/19 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 106 individual goals across the departmental work units for the FY 18/19. Overall, 83 of the goals were completely met or had substantial progress toward their completion (78.3%), 20 of the goals had progress toward completion but remain on-going (18.9%) and 3 of the goals had showed little to no progress (2.8%).

### *Capital Projects, Construction Renovation Projects, and Maintenance Projects*

- 9 capital construction projects were completed totaling \$8.1 million
- 158 renovation projects were completed totaling \$2.2 million
- 194 maintenance projects were completed totaling \$1.8 million

### *Customer Service and Communication*

- All work units combined to complete approximately 20,280 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 order 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
- Extensive technical and professional development training was performed throughout the department
- An on-line training program was purchased and implemented to enhance all forms of required and professional development 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

### *Association of Physical Plant Administrators (APPA)*

- With MTSU as a member institution, Facilities Services personnel continued to participate in many forms of technical and leadership/management training at the state, regional, and national/international levels of APPA

## Challenges and Opportunities

### *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 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. Beginning

(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)

with FY 16/17 (\$6,730,000) however, MTSU began seeing an increase in capital maintenance funding. **In FY 18/19, MTSU received \$8,170,000.** This increased level of funding is much needed and appreciated. It interrupts a period of significant underfunding capital maintenance. 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 remained flat in FY 18/19, maintaining the compound reduction of 3.4% compared to FY16/17. This is primarily due to the consistent use and efficient operation of the facilities and utility plants. 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 began 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.

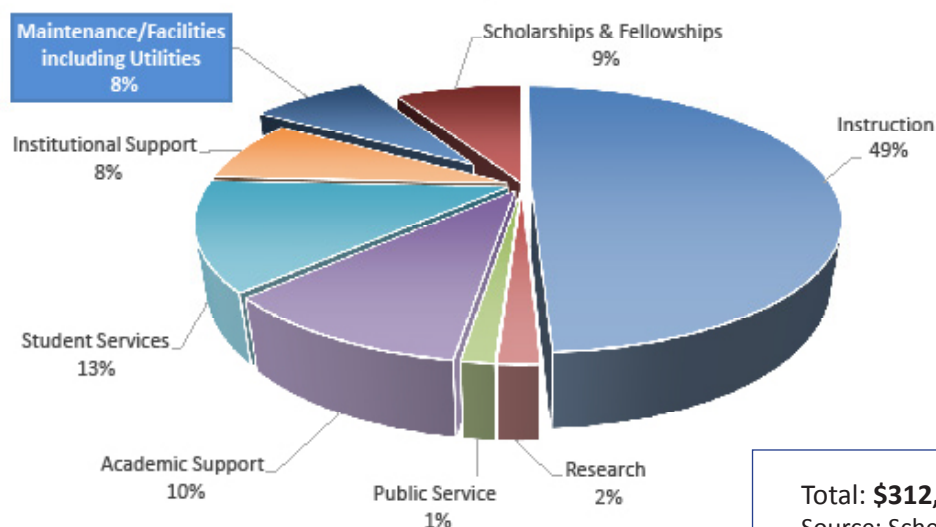
### Conclusion

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. I want to express appreciation to the Facilities Services staff for their dedication and good work in pursuit of these goals. 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*

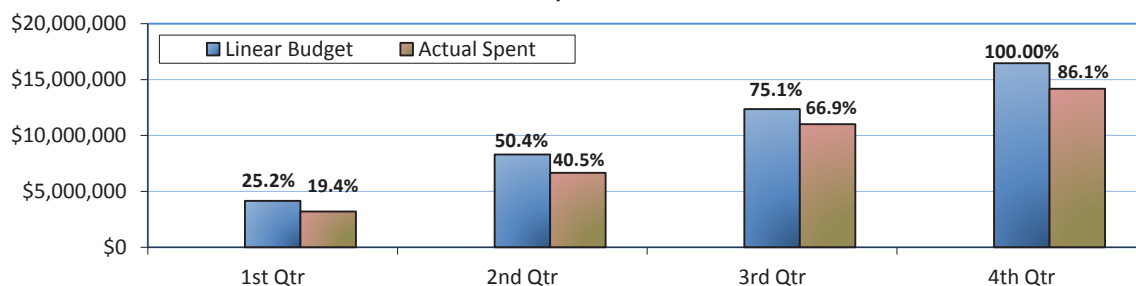
MTSU E & G Expenditures 2018-2019



Total: **\$312,285,711**

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

## E & G Maintenance and Operations Budget FY 18 - 19 by Quarter

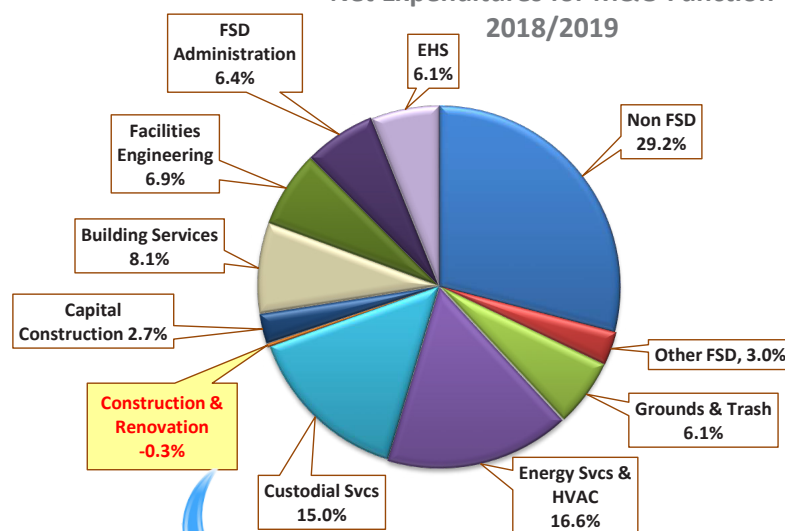


2018/2019	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	End-of-Year Totals	% of Total
Total M & O Expenditures	\$ 4,259,775	\$ 4,607,649	\$ 5,475,236	\$ 5,128,595	\$ 19,471,254	
Work for Others	1,060,047	1,147,341	1,124,710	1,963,520	5,295,618	27%
Net E & G Expenditures	\$ 3,199,728	\$ 3,460,307	\$ 4,350,526	\$ 3,165,075	\$ 14,175,636	73%
E & G Budget	\$ 16,463,973	\$ 16,463,973	\$ 16,463,973	\$ 16,463,973	\$ 16,463,973	
% of Budget	19.43%	21.02%	26.42%	19.22%	86.10%	

## Accomplishments & Highlights 2018/19

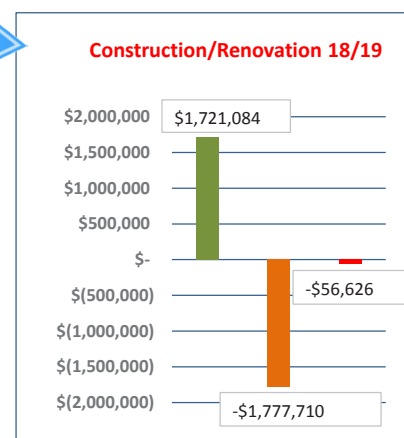
- Created Unexpended Plant spreadsheet to improve financial tracking of projects
- Advanced research on the Asset/Building/Property Facts & Figures for a reference manual
- Collaborated with co-workers to open lines of communication on workflow & accounting procedures
- Created & presented Facilities' Accounting training resource for new supervisor
- Commenced regular Facilities' Accounting meetings to provide communication within our department
- Developed a Facilities' Accounting training resource for managers/supervisors/new employees
- Updated ARGOS financial reports to improve accuracy & reduce manual compilations of reports
- Continued to provide Notary service to the university

## Net Expenditures for M&O Function 2018/2019



## Goals 2019/20

- Update spreadsheets & reports to reduce time and improve clarity
- Enhance the QuickBooks' data to make useful additions to the financial content
- Proceed with updating procedure manual for Facilities Accounting processing
- Assemble Facilities' information on Asset/Building/Property Facts & Figures into a reference manual
- Focus on utilizing procedure manuals to create a Facilities' Accounting training resource for new employees & annual training for current employees/managers/supervisors
- Review & update the Facilities' contract list & contract information
- Continue to seek new technology to improve workflow & reduce redundancies
- Encourage employee development, education, & certification, including team building and communication



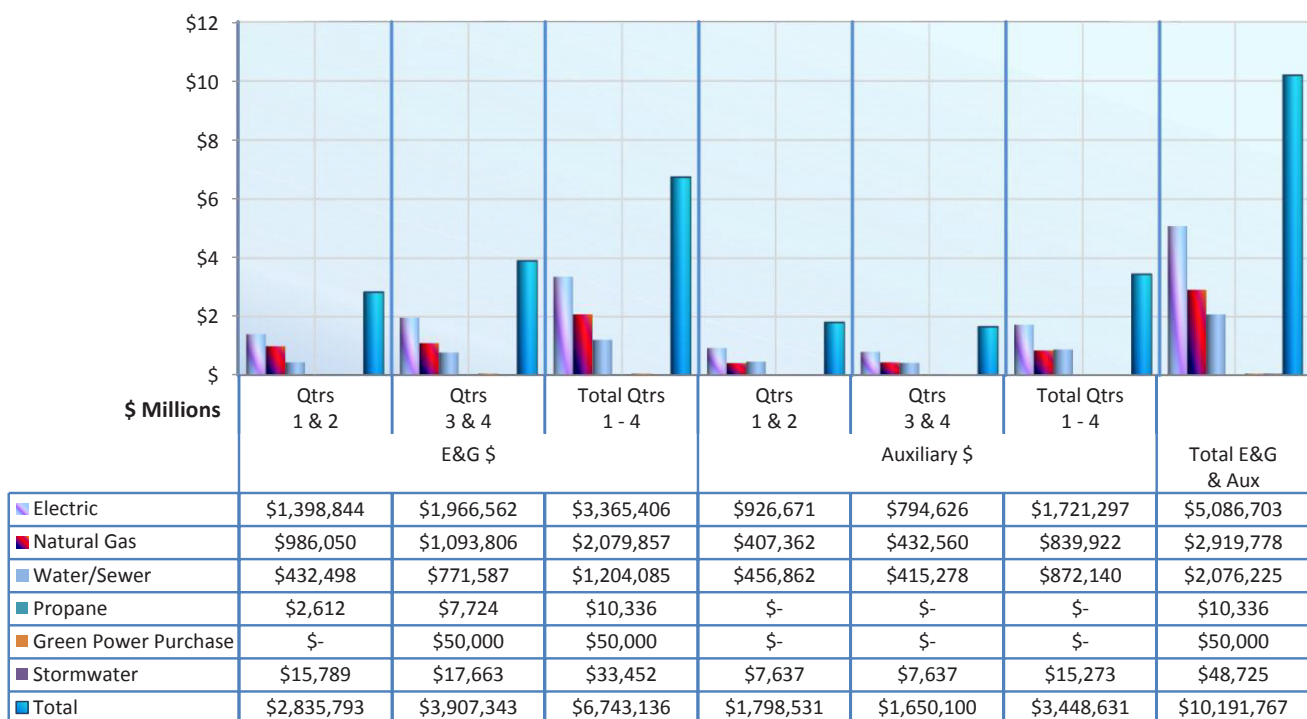
## Accomplishments & Highlights 2018/19

- Negotiated annual utility related contracts with Tennessee Valley Authority and Murfreesboro Electric (Generation Partners, Green Power Providers Agreement)
- Assisted with awarding new natural gas purchase contract and new natural gas rate agreement for Cogeneration Plant
- 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
- Finalized sale of switchgear to complete removal of 2MW generators from campus
- 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 needs
- Continued support of the MTSU Sustainable Campus Fee Committee (SCF) under Student Affairs; & oversight of Students for Environmental Action (SEA) and other sustainable project applications
- Supported implementation of PowerBI Analytics Program for Facilities Services
- Developed a 'Green Snapshots' information system for campus sustainability reporting
- Continued serving on the President's Commission on the Status of Women and Women in STEM Boards
- Published Summary of Services Annual Report for FY17/18

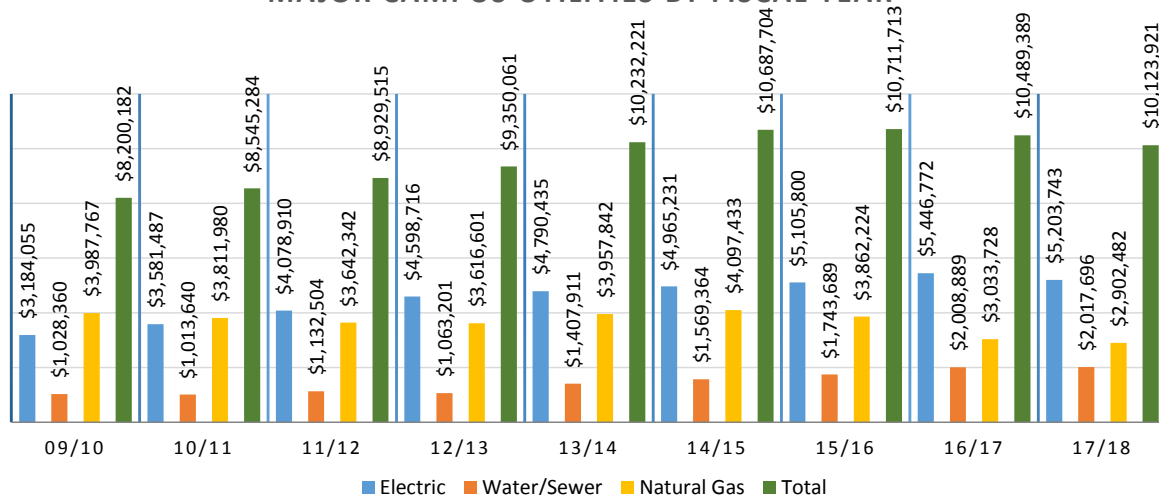
## Goals 2019/20

- Complete Green Power Providers (GPP) new 20 year agreement
- Continue support of SCADA system and dashboard initiative for campus and development of metering potentials
- Support implementation of PowerBI Analytics Program involving utilities and Facilities Surveys
- Continue involvement with utility information for Utility Data Management (UDM) Platform for State of Tennessee
- Continue support for utilities and sustainability design processes in new campus construction
- Continue to provide utility and energy management data, support, and research to university departments and others as needed (auditing, new service, demolish projects)
- Continue support of MT Engage on campus through internships, student workers, and volunteer opportunities; offering CEE intern positions for Fall & Spring semesters
- Continue support of MTSU Sustainable Campus Fee Program and other sustainable practices on campus
- Continue to support classroom instruction for university departments per request

## Total Campus Utilities 2018/2019



MAJOR CAMPUS UTILITIES BY FISCAL YEAR



## Recycling Program - MTSU Recycles

Linda Hardyman

### Accomplishments & Highlights 2018/19

- Dealt 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
- Maintained recycling program to meet campus needs employing student workers
- Supported recycling efforts for Campus Planning and Construction/Renovation projects in multiple building's improvement projects
- Outreach- supported mid-term elections, participated with city/county grade school events, RecycleMania for universities, and more
- Oversaw implementation of additional Sustainable Campus Fee (SCF) projects submitted by students and others
- Utilized MTSU Sustainable Campus Fee project funding to supplement recycling program visibility across campus
- Continued providing athletic recycling in suites, stadium, tailgating areas with Students for Environmental Action (SEA) recycling support; recycling added to additional sports venues
- Responded to 660+ special requests for recycling on campus in addition to normal program tasks
- Supported Customs and other special events on campus per requests
- Provided safety and diversity training for recycling staff



Waterfest at  
Old Fort Park 2019

### Goals 2019/20

- Continue to direct Sustainable Campus Fee approved student projects – water refill stations, dorm room recycling, solar picnic table and trash compactors, etc.
- Continue to promote campus recycling education, upgrade appearance of recycling containers
- Explore available initiatives to grow the program, deal with marketing issues, and avoid tipping fees for campus trash going to the landfill with efforts for least impact on the program due to commodities issues
- Continue to support Campus Planning, Capital Construction, and Construction/Renovation projects
- Continue to work with athletics staff to provide appropriate recycling at athletic events
- Continue MTSU Sustainable Campus Fee Program involvement/recycling project funding
- Exploring partnership opportunities with MT Engage, Recycle Rutherford and Rutherford County Government
- Continue to provide classroom support through guest lectures, environmental seminars and storm water initiatives
- Continue participation in training and development programs

MTSU Recycles!	
Commodity	2018/19
	Pounds
Aluminum	6,777
Mixed/White/News Paper	581,531
Maintenance Metals	40,087
Cardboard	287,830
E-waste	61,750
Plastics	43,620
Units	
Batteries	3,005
Ink Cartridges	2,770
Pallets	710

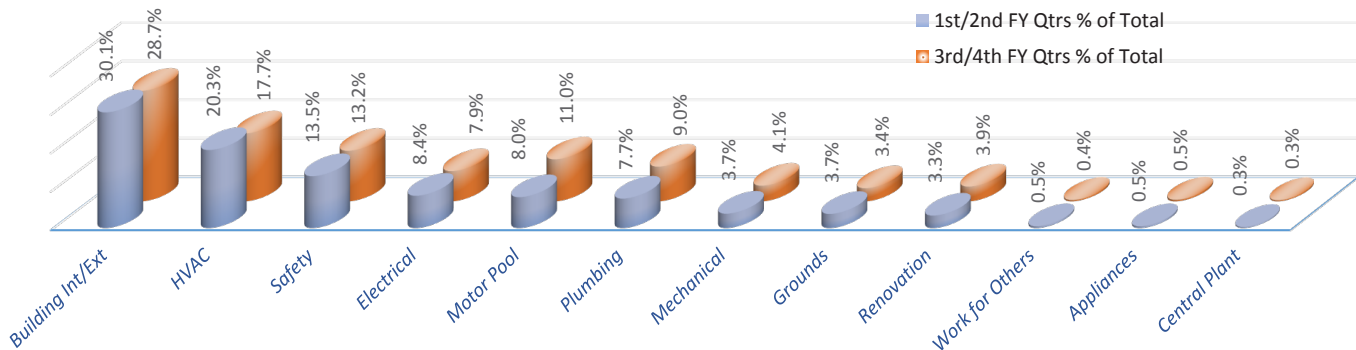




# Central Administration: Work Order Services

Joyce Reed

## WORK ORDERS ORIGINATED 2018/2019



2018/2019 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	28	0.53%	20	0.42%	20	0.40%	29	0.56%	97	0.48%
Building Interior/Exterior	1,612	30.39%	1,431	29.78%	1,569	31.58%	1,348	25.96%	5,960	29.40%
Central Plant	16	0.30%	14	0.29%	12	0.24%	23	0.44%	65	0.32%
Electrical	443	8.35%	407	8.47%	426	8.57%	374	7.20%	1,650	8.14%
Grounds	198	3.73%	174	3.62%	131	2.64%	217	4.18%	720	3.55%
HVAC	1,172	22.10%	883	18.38%	828	16.66%	967	18.62%	3,850	18.99%
Mechanical	182	3.43%	197	4.10%	205	4.13%	210	4.04%	794	3.92%
Motor Pool	474	8.94%	339	7.06%	392	7.89%	721	13.88%	1,926	9.50%
Plumbing	380	7.16%	396	8.24%	530	10.67%	388	7.47%	1,694	8.36%
Renovation	180	3.39%	149	3.10%	149	3.00%	243	4.68%	721	3.56%
Work for Others	35	0.66%	13	0.27%	22	0.44%	20	0.39%	90	0.44%
Safety	584	11.01%	782	16.27%	685	13.79%	653	12.57%	2,704	13.34%
Total	5,304	100.00%	4,805	100.00%	4,969	100.00%	5,193	100.00%	20,271	100.00%

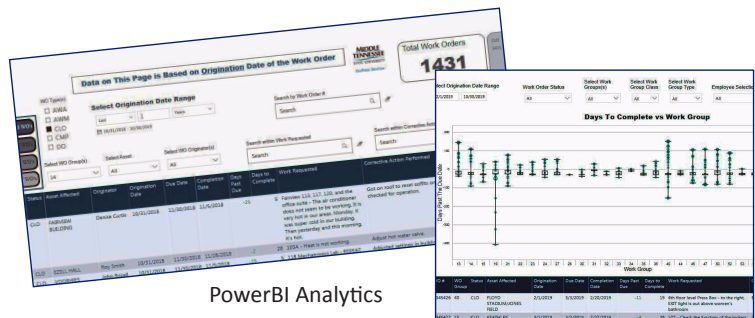
## Accomplishments & Highlights 2018/19

- Coordinated with FSD management and Residential Life personnel to design and implement work order update process, distribute reports and attend weekly meetings to enhance communication for current work requests and status checks
- Because of reorganization in Building Services department, the work orders office began to identify, organize, document and edit department forms and Mainsaver data on effected system tables, work orders, PM masters, vehicle and equipment assets, queries, reports and other records.
- Identified and corrected data anomalies and coding issues, developed Argos automatic reports to run daily or weekly to facilitate more accurate and timely data retrieval for PowerBI
- Conversion to Argos for all routine work order reports to make accessible to personnel

[http://www.mtsu.edu/facserv/work\\_request\\_forms.php](http://www.mtsu.edu/facserv/work_request_forms.php)

## Goals 2019/20

- Document and compile work order processes and procedures to produce operations manual
- Coordinate with Provost Office personnel to design weekly work order reports and review process to identify funding sources for academic work requests
- Research and identify available Mainsaver fields where data can be added or edited to reflect information desired for PowerBI analytics
- Analyze, document and train employees for duties being reassigned because of upcoming employee retirement



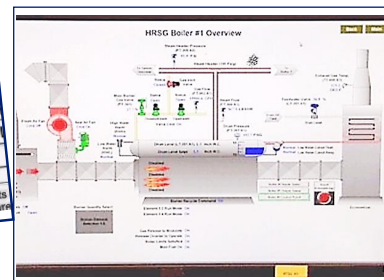
## Maintenance Projects MP-2's

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 MP2 form allows all elements of projects to be accurately tracked until completed.

### MP-2 Project Summary

2018/2019	# Projects	Project Value
Building Services	91	\$ 503,509
Energy Services	54	\$ 622,042
Grounds Services	24	\$ 147,745
Facilities Engineering Services	9	\$ 107,526
Life Safety & Emergency Management Services	8	\$ 76,133
Motor Pool Services	4	\$ 84,454
CoGen Duct Burner Repair	1	\$ 224,903
Civil Environmental Engineering Services	1	\$ 13,079
Facilities Services ADM	1	\$ 6,604
Capital Construction ADM	1	\$ 5,209
<b>Totals</b>	<b>194</b>	<b>\$ 1,791,204</b>



Energy Services:  
Control Graphics  
for Heat Recovery  
Boiler (Computer  
Screen)

## 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.

2018/2019 Customer Satisfaction Survey			
Did you receive an email when the work order was opened?		96.6%	
Did you receive an email when your work order was completed?		96.6%	
Did the Corrective Action adequately address the problem or requested work?		4.7	
How satisfied are you with the timeliness of the response(s) to your work request?		4.8	
How satisfied are you with the customer service you received?		4.8	
Scale:	5- Very Satisfied	2- Dissatisfied	
	4- Satisfied	1- Very Dissatisfied	
	3- Neutral		

## Accomplishments & Highlights 2018/19

- 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

## Goals 2019/20

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

*Great job and communication. Thanks for all you do for the campus!*

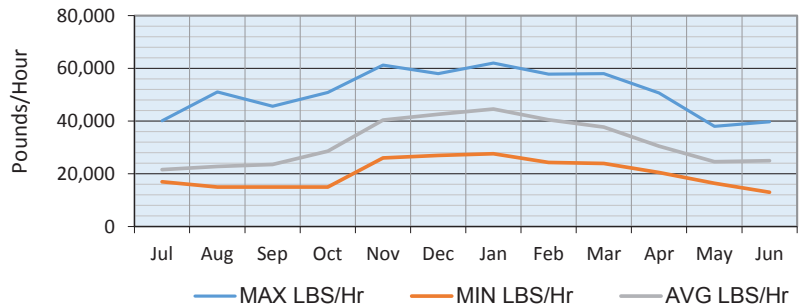
*Excellent as always. Work was very precise and appreciated!*

*I was amazed at how quickly the work was completed. It is greatly appreciated.*

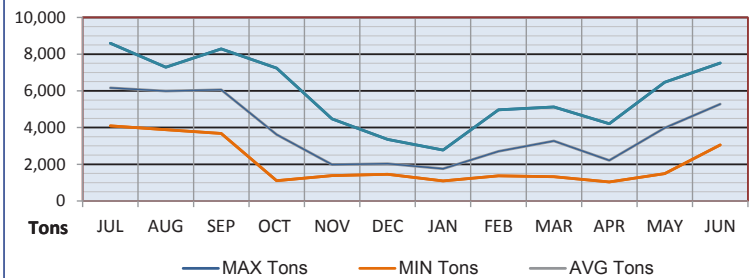
## Accomplishments & Highlights 2018/19

- Managed 239 after hours callbacks
- Repaired underground condensate lines at BAS and BDA
- Replaced burner section and added new gas valve for heat recovery boiler
- Replaced underground steam and condensate lines under Phase 1 of capital project
- Modulated supply air temperature for air handling units to conserve energy
- Added new Siemens panels for EMS system campus wide
- Added condenser pumps
- Implemented new SCADA system
- Evaluated operating schedules for natural gas and electric
- Prepared EPA report for greenhouse gas emissions
- Supported construction/renovation projects
- Provided training to maintain compliance regarding code issues
- Completed safety training

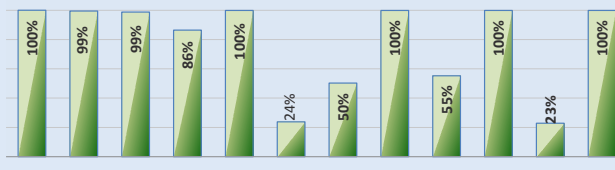
### Steam Production 2018/2019



### Chilled Water Tonnage 2018/2019



### Turbine: Percent Runtime By Month 2018/2019

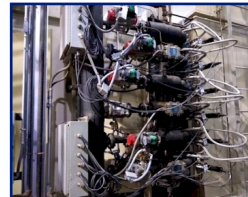


## Goals 2019/20

- Continue exploring recovery of loop system condensate
- Continue to support capital and construction/renovation projects on campus
- Investigate and repair condensate leak near COE Building
- Support implementation of PowerBI to improve services
- Continue to investigate training opportunities



Central Plant



Burner Section- Heat Recovery Boiler

### 2018/2019 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	5.01	5.01	5.01	5.01										
Avg MW	4.47	4.74	4.46	4.53	Avg LBS/Hr	29,502	40,924	26,517	31,611	Max Peak Tons	8,593	5,127	7,517	8,593
Total MWH	16,674.3	6,908.2	7,175.8	30,762.7	Peak LBS/Hr	59,824	62,000	46,000	62,000	Min Tons	1,102	1,093	1,036	1,036

Purchased Power: 66,412.30 MWH

## Accomplishments & Highlights 2018/19

- Managed 85 after hours callbacks
- Improved customer service in HVAC department
- Replaced VFD's, dampers, and actuators for Recreation Center and Walker Library
- Replaced coils in Business Aerospace and AHU's 5 and 8 in Student Recreation Center
- Installed dampers for Recreation Center to prevent freezing of coils
- Installed closed loop sediment filtering system- Honors Building
- Cleaned coils in multiple buildings on campus
- Supported construction/renovation projects
- Supported sustainable campus fee projects
- Completed safety training

### PERFORMANCE MEASURES: Energy Services Preventive Maintenance and Service

2018/2019		#Work Orders Completed	Man Hours	Avg Man Hours/WO
PREVENTIVE MAINTENANCE (PM) Requests		Annual	Annual	Annual
	Appliances	28	32	1.1
	HVAC	1,229	5,940	4.8
	Mechanical	693	862	1.2
	Sub-total	1,950	6,834	3.5
	Central Plant	17	1,851	108.9
Total		1,967	8,685	4.4
SERVICE WORK ORDERS		Annual	Annual	Annual
	HVAC	176	3,591	20.4
	Mechanical	18	74	4.1
	Sub-total	194	3,665	18.9
	Central Plant	31	9,124	294.3
	Total	225	12,789	56.8

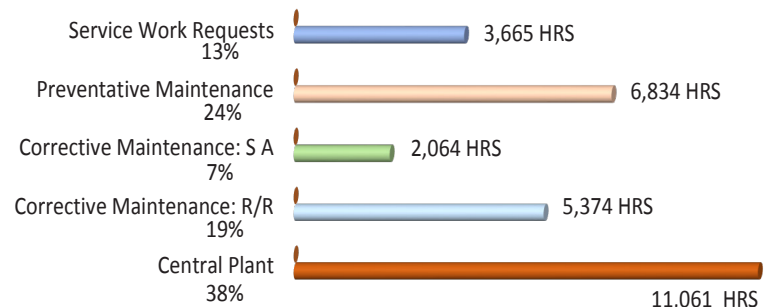
## Goals 2019/20

- Using PowerBI, reduce work order completed past due percentage by addressing identified work flow and documentation process issues
- 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
- Continue to clean coils on campus to improve air quality and energy efficiency
- Investigate new ways of saving energy on campus
- Develop new projects for MTSU Sustainable Campus Fee
- Continue to support capital and construction/renovation projects on campus
- Continue to investigate training opportunities

### PERFORMANCE MEASURES: Energy Services Corrective Maintenance

2018/2019		#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	34	11	180	20	5.3	1.8
	HVAC	1,343	1,135	4,921	1,928	3.7	1.7
	Mechanical	88	39	273	117	3.1	3.0
	Sub-total	1,465	1,185	5,374	2,064	3.7	1.7
	Central Plant	14	3	82	4	5.8	1.3
Total		1,479	1,188	5,455	2,068	3.7	1.7

### Energy Services Total In-House Work Order Hours 28,998 Man Hours 2018/2019



Variable Frequency  
Drive at AHU and Filter  
Bank

## Accomplishments & Highlights 2018/19

### Systems Engineering

- Tested 90% of the air valves in the New Science Building for functionality; determined number of failed actuators to be repaired & developed means to provide access to the valve internals, how to change actuator pins, keepers, & actuators
- Oversaw the development & installation of airflow measuring stations and chilled water flow stations at critical locations on campus to improve monitoring and diagnostic capabilities of the campus wide Building Automation System (BAS)
- Assisted in the ongoing development and design of an upgraded air compressor system in the New Science Building to support the end user's criteria to generate lab grade Nitrogen for use in the labs
- Provided oversight of departmental fume hood certification & maintenance of fume hoods in Science complex - 200 units
- Trained a new technician on all critical systems in the building

### GIS and Locating

- Responded to over 900 utility locate tickets (TN One Call – 811) in support of Capital Maintenance & Capital Outlay projects and other on-campus projects
- Played a key role in utilities identification and location for the New Academic Building, Phase I Water and Sewer project, Campus-wide surveillance project, & Steam/Condensate and Manhole Phase II repair project
- Assisted & coordinated with contractors as required to ensure existing utilities were protected & issues were resolved on campus throughout the duration of utility related projects

### Elevators & Generators

- Completed elevator modernization Floyd Stadium Gates 1 & 3
- Implemented bar code scanning for elevator inspections allowing more uniform & timely reporting
- ADA elevator phones inspected each month totaling 777 inspections last year; failure rate decreased from 8.0% last year to 4.5% this year

### Key Shop

- Completed 1,408 work orders
- Cut a total of 2,532 keys; built and installed 594 new I/C cores
- Responded to a total of 43 call backs

## Goals 2019/20

### Systems Engineering

- Assist in engaging a third party Energy Savings Performance Contractor in the development of a multi-year agreement to provide new energy efficient equipment and strategies for improving the overall performance and reliability of the HVAC and lighting systems in the science complex
- Implement air compressor project for Science Building to improve function and maintainability of compressed air capabilities
- Track installation and functional tests for major equipment of new Academic building construction

### GIS and Locating

- Increase integration of GIS information and input during the design of capital projects for greater coordination & planning; update GIS map & database for infrastructure changes for upcoming capital projects, i.e. Campus Stormwater BMP Phase I project
- Continue to assist project managers and contractors in future projects to mitigate & control damage that may occur during construction

### Elevators & Generators

- Provide design input for upcoming elevator modernizations of Keathley University Center & Miller Education Center
- Implement electrical transformer identification project to assist both MTSU & Middle Tennessee Electric to locate transformers in emergencies; include information in GIS maps
- Assist coordination in replacement of WMOT & Telecom generators

### Key Shop

- Complete the state funded campus security project involving the removal of older crash bar panic device hardware from exterior doors & replacing them with push pad type door hardware
- Complete the maintenance project involving the rekeying of Murphy Center
- Support the completion of the New Academic Building & Recording Industry Management facility in the Miller Education Center during the installation of the brass key & electronic access control systems

### PERFORMANCE MEASURES: Engineering Services

	Corrective Maintenance and Service Activities			Preventive Maintenance Activities		
	# of Work Orders completed	Man Hours	Avg Man Hours per WO	# of Work Orders completed	Man Hours	Avg Man Hours per WO
2018/2019						
Keyshop	1,408	3,416	2.42	6	10	1.67
Elevators	446	577	1.30	776	347	0.45
Generators	88	82	0.93	358	396	1.11



Air Vents for 160 Fume Hoods at New Science Building

## Accomplishments & Highlights 2018/19

### Industrial Hygiene and Laboratory Safety

- Completed 5,962 weekly, semi-annual, & annual inspections to remain in compliance with federal, state and local guidelines, relating to existing labs, lab hoods, elevators, IACUC, AED pads & batteries, & hazardous materials
- Managed the identification, collection, packaging, transportation, and disposal of approximately 4, 500 pounds of chemical hazardous waste
- Monitored 19 asbestos containing materials (ACM) removal efforts campus wide by MTSU contractors, oversaw 3 mold investigations performed campus wide by MTSU contractors, & conducted 12 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 1 radioactive safety inspection in December 2018 with no items of non-compliance found
- EH&S added a full time campus Industrial Hygienist to staff in January
- Created a new laboratory inspection template report

### Emergency Operations

- Responded to and managed 2 OSHA complaints
- Dates and revisions to the MTSU Emergency Operations Plan to conform to TEMA/ RCMA format changes

### Fire & Life Safety Services

- Transitioned an existing employee to the campus' dedicated Emergency Operations Manager
- Moved our Fire and Life Safety Specialist position from part-time to a full time position
- Saw a greater than 75% decrease in unintentional initiations of the Scarlett Housing Complex Fire Alarms by modifying the smoke detector use in the bathrooms
- Installed a new Fire Pump Controller Unit in MEC
- Identified life safety equipment at end of usable service life & provided guidance for pursuing a replacement program for such equipment
- Responded to 20 after-hours callbacks

### Civil & Environmental Engineering Services

- Shared a co-permit and cooperated with City of Murfreesboro for the Tennessee National Pollutant Discharge Elimination System (NPDES); completed requirements for Best Management Practices (BMPs) including Illicit Discharge Detection & Elimination, Pollution Prevention & Good Housekeeping, & Public Education & Outreach

## Goals 2019/20

### 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

### Emergency Operations

- Assist the MTSU Police Department with its accreditation process as needed
- Conduct the annual review of the MTSU Emergency Operations Plan and update as needed
- Assist University departments in development of departmental Emergency Response Plans

### Fire & Life Safety Services

- Continue the program to bring Campus Fire and Life Safety equipment (Fire Alarms, Extinguishers, ETC) to a Campus-wide Standard
- Provide & implement a Dust and Hot Works Program to Campus to reduce the number of nuisance Fire Alarms during Construction
- Implement a Barcode Scan inspection program for fire extinguishers, emergency lighting, & exit signage to provide a safer & more compliant Campus
- Provide Safety and Fire Prevention PSA's to Campus via multimedia platform approach

### PERFORMANCE MEASURES

2018/2019		Corrective Maintenance (CM)	Preventive Maintenance (PM)	Service Work Orders	Work Orders Completed	Program Totals
Industrial Hygiene & Lab Safety Services	Annual	159	2,208	603	2,970	5,806
Life Safety & Emergency Management	Annual	90	2,008	461	2,559	
Civil & Environmental Engineering Services	Annual	4	210	63	277	

### Civil & Environmental Engineering Services

- Coordinate with Campus Planning & Construction Administration on correct design & installation of drainage & systems for new Capital projects

- Coordinate stormwater mapping needs with Building Services & Campus Planning to update GIS
- Continue partnership with the City of Murfreesboro to meet NPDES permit compliance

### Stormwater Program Activities 2018/19

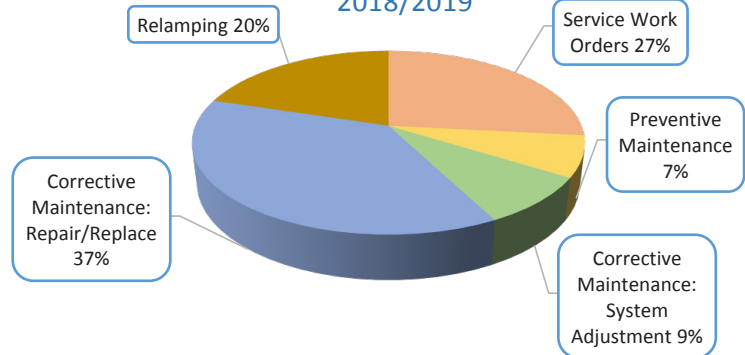
Targeted Education	
Events (stream cleanups, tree plantings, tree day)	7
Trash removed - Lbs.	425
Invasive plants removed	5,354
Number of Volunteers/Citizens/Partners	720
Outreach: trees distributed/mail-outs/door hangers/print media/promotional items	>2,031
By the numbers - Targeted	8,537
General Education	
Overall events (booth/workshops/classroom visits/MTSU Customs)	30
Educational print media/Promotional items distributed	1,958
Volunteer participants	97
Overall citizen educated/served	5,838
By the numbers - General Education	7,923



## Accomplishments & Highlights 2018/19

- Completed stages I & II of a five stage plan to significantly improve the functionality of the main waste line at the Student Services Building
- Replaced all of the underground electric lines and transformers serving the Womack Lane Apartments, Buildings G-L, on time and under budget
- Successfully fulfilled over 4,300 service requests (work orders) all over campus and numerous small projects
- Developed methodologies for improved 2-way communication with outside service providers under general services contracts with MTSU

Building Services  
Annual In-House Man Hours  
2018/2019



Spider Lift at Naked Eye Observatory

PERFORMANCE MEASURES: Building Services Corrective Maintenance							
2018/2019		#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	9	6	29	6	3.2	0.9
	Interior/Exterior	984	558	4,326	950	4.4	1.7
	Electrical	198	282	993	391	5.0	1.4
	Plumbing	1,070	249	2,770	482	2.6	1.9
	Sub-total	2,261	1,095	8,118	1,828	3.6	1.7
	Re-Lamping	679	22	4,382	19	6.5	0.8
Total		2,940	1,117	12,500	1,847	4.3	1.7

PERFORMANCE MEASURES: Building Services  
Preventative Maintenance and Service

2018/2019		#Work Orders Completed	Man Hours	Avg Man Hours/WO
PREVENTIVE MAINTENANCE (PM) Requests		Annual	Annual	Annual
	Building Interior/Exterior	346	780	2.3
	Electrical	58	18	0.3
	Plumbing	379	771	2.0
	Total	783	1,568	2.0
SERVICE WORK ORDERS		Annual	Annual	Annual
	Appliances	3	1	0.3
	Building Interior/Exterior	1,837	3,860	2.1
	Electrical	65	278	4.3
	Plumbing	25	297	11.9
	Renovation	629	1,353	2.2
Total		2,559	5,788	2.3

## Goals 2019/20

- Complete the final three stages of a five stage plan to significantly improve the functionality of the main waste line at the student services building
- Develop a 5-year plan to retrofit all of the Sternberg light fixtures on campus with LED lamps to improve the safety and security on campus for the student population, visitors, and the larger campus community by improving campus lighting reliability with the added benefit of reducing MTSU's carbon footprint
- Replace all of the in-wall shower fixtures in the visitor's locker room and visiting coaches locker room at Floyd Stadium with enclosed surface mounted shower fixtures on time and within budget
- Replace all of the shower trees in the men's and women's PE locker rooms in Murphy Center and reestablish hot water flow to the showers on time and within budget
- Identify new sources of qualified candidates to fill current vacancies

## Accomplishments & Highlights 2018/19

- Completed Middle Tennessee Boulevard; dedication and Grand Opening Ceremony August 2019
- Reviewed and revised Design and Construction Documents
- Current active projects: \$48,352,849.
- Projects completed and in one year correction period: \$4,482,804
- New projects in design: \$45,629,100
- New Academic Building under construction, about 45% complete
- Parking Services Building underway for completion Fall 2020
- HVAC replacement at KUC under construction for completion Spring 2020
- Peck Hall improvements and courtyard renovations completed
- Capital Maintenance roof replacements completed for Alumni Gym, Voorhies Engineering, Saunders Fine Arts, Boutwell Dramatic Arts, Keathley University Center, and Learning Resources Center
- Cope Administrative Suite Renovation ongoing with completion September 2019
- Construction Administration has begun using the THEC PITS for project management; THEC continues to work any issues within the system
- Participation in APPA training and TNAPPA 2019

2018/2019 Capital Projects Review		
	New Projects	Completed Projects
1st July - September	<ul style="list-style-type: none"> <li>✓ Several Building Roof Replacement</li> <li>✓ New Academic Building</li> <li>✓ Facilities Services Shed</li> </ul>	<ul style="list-style-type: none"> <li>✓ Electrical Equipment Upgrade- Jones, Stark, VET</li> <li>✓ Floyd Stadium Field Lighting</li> <li>✓ Facilities Services Shed</li> <li>✓ Elevator Modernizations I</li> </ul>
2nd October - December	<ul style="list-style-type: none"> <li>✓ KUC Mechanical and HVAC Updates</li> </ul>	<ul style="list-style-type: none"> <li>✓ Peck Hall Improvements</li> <li>✓ Several Buildings Exterior Renovations</li> <li>✓ Piping &amp; Manhole Replacement I</li> </ul>
3rd January - March	<ul style="list-style-type: none"> <li>✓ Cogen Duct Burner Repair</li> <li>✓ Maintenance Complex Reroof</li> <li>✓ Alarm System Updates I</li> </ul>	<ul style="list-style-type: none"> <li>✓ Various Sidewalk and Parking Improvements</li> <li>✓ Cogen Duct Burner Repair</li> </ul>
4th April - June	<ul style="list-style-type: none"> <li>✓ Cope Executive Suite Update-2nd fl ITD Phase II</li> <li>✓ Elevator Modernizations II</li> <li>✓ Steamline &amp; Manhole Repair/Replace II</li> <li>✓ MEC Roof Replacement</li> <li>✓ Several Buildings Smoke Evac</li> <li>✓ Repair/Retrocommissioning</li> <li>✓ Parking Services Facility</li> <li>✓ Water &amp; Sewer System Updates</li> <li>✓ BAS Control Panels Replacement</li> </ul>	None

## Goals 2019/20

- Life Safety Fire Alarm Upgrades Phase I in progress
- Steam/Condensate Manhole Phase II on going with finish October 2019
- Kirksey Old Main elevator upgrade due to finish January 2020
- Miller Education reroof due to finish end of October 2019
- Mechanical and electrical updates for Data and Communications preconstruction commenced with completion July 2020
- New Aramark spaces to complete: two in Student Union and new dining spaces at JUB
- Academic classrooms due to finish late summer of 2020
- Several building smoke evacuation and retro-commissioning project due for completion in March 2020
- Continue to participate in APPA
- Continue to use PowerBI for project status updates and reports



New Academic Building Construction

Holmes Reroof



## Construction Administration Capital Project Summary

2018/2019	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	8	\$ 8,093,095	7	\$ 38,766,026	5	\$ 36,812,859	5	\$ 38,976,046	8	\$ 8,093,095
Added Projects	2	\$ 33,871,049	1	\$ 1,360,997	3	\$ 3,778,247	8	\$ 9,269,138	14	\$ 48,279,431
Completed Projects	4	\$ 3,198,118	3	\$ 3,314,164	2	\$ 1,615,060	0	\$ -	9	\$ 8,127,342
Ending Active Projects	6	\$ 38,766,026	5	\$ 36,812,859	6	\$ 38,976,046	13	\$ 48,245,184	13	\$ 48,245,184

## Accomplishments & Highlights 2018/19

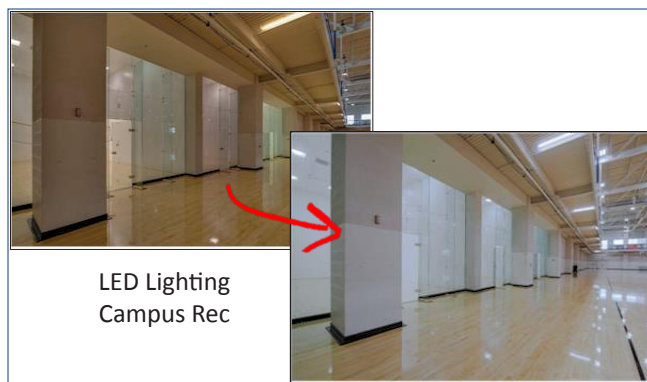
- Construction/Renovation completed approximately 158 projects and managed more than \$2,171,800 worth of products and services during the course of those projects
- Major completed renovations include:
  - Business Building – Dean's suite renovation
  - Business Building – S307 & S343 TAF improvements
  - Miller Education Building – Photo archive vault
  - University Police – Exterior parking lot improvements
  - College Heights – Renovation for crisis center headquarters
  - Woodmore/Cyber Café – Renovation for live music performances
  - Kirksey Old Main - 324 – Upgrade classroom
  - Vocational Agriculture – Complete renovation for TAF classroom
  - Campus Recreation – LED lighting for indoor gym, soccer, and racquetball
  - Stark Agriculture – Renovation for new tissue culture lab
  - Walker Library – Update building signage in main atrium area
  - Student Union – Updated Mother's room on third floor
  - Foundation House – Updated basement equipment to remain code compliant
  - Greek Row – various interior improvements and exterior repairs
  - Business Building – repair all tiered classroom counter tops
  - Unmanned aircraft trailer – renovation for Aerospace Dept
- Attended TNAPPA in Memphis, TN

College Heights  
Crisis Center

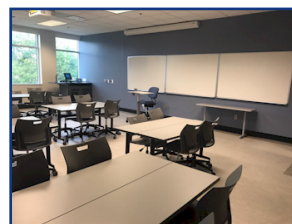


## Goals 2019/20

- Update Construction/Renovation web-page
- Successfully complete major renovations:
  - TAF classrooms in BAS, Bragg, Todd, BDA, and Fairview
  - University Police – renovations at College Heights
  - Ingram – New departmental office renovation
  - Campus Recreation – Painting improvements
  - Ellington Human Sciences – ADA restroom
  - Additional underwater treadmill for Health & Human Performance
  - Athletics – Green Room renovations
  - Woodmore Building – Further renovations for live music and classroom use.
  - Peck Hall 303A – Student collaborative space



LED Lighting  
Campus Rec



BAS S-307

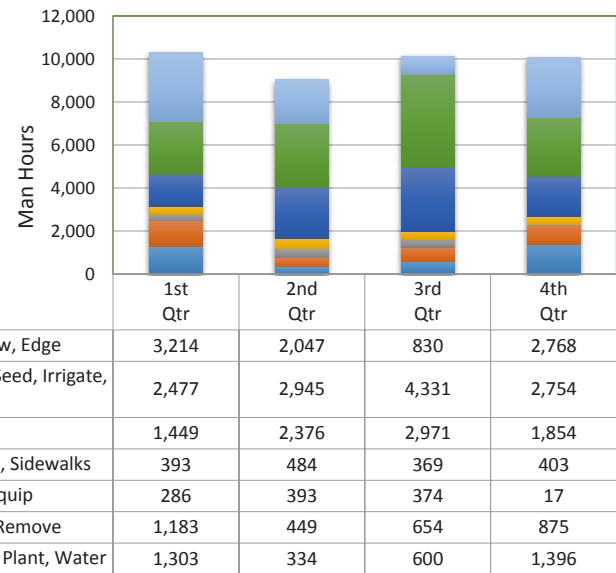
## Construction/Renovation Project Summary

2018/2019	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	279	\$ 124,615	273	\$ 703,353	286	\$ 1,269,262	291	\$ 1,075,366	279	\$ 308,615
Added Projects	47	\$ 928,338	41	\$ 1,031,634	50	\$ 732,895	40	\$ 647,405	178	\$ 3,340,272
Completed Projects	53	\$ 349,423	28	\$ 465,902	45	\$ 926,791	32	\$ 429,684	158	\$ 2,171,800
Ending Active Projects	273	\$ 703,353	286	\$ 1,269,085	291	\$ 1,075,366	299	\$ 1,293,087	299	\$ 1,293,087

## Accomplishments & Highlights 2018/19

- Purchased additional propane zero turn mower with SCF funds as part of ongoing clean energy initiative
- Worked to improve pressure washing on campus with new equipment to be more efficient
- Improved football game tailgate clean up by expanding game day-porter service and setting up more trashcans in strategic locations.
- Finished organizing lay down yard.
- Worked with School of Concrete Management using students as part of class projects to install and repair sidewalks and pour dumpster pads
- Performed two rounds of sidewalk grinding to remove small imperfections and uneven spots on sidewalks around campus
- Continued re-landscaping areas around campus
- Improved functionality of Fairview playground by removing large mulch mound and reseeding with grass
- Improved processes for cleaning up trash during move-in, keeping campus looking “clean & green” during this busy time

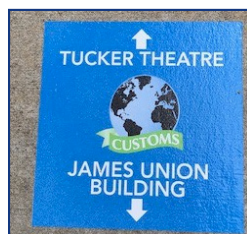
Grounds Services:  
Labor by Activity  
2018/2019



**Total Hours: 39,585**

## Goals 2019/20

- Continue sidewalk 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



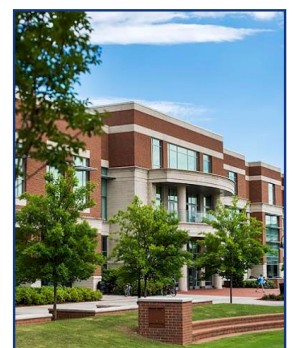
New 'Sidewalk'  
Signage



## PERFORMANCE MEASURES: Grounds Services

2018-2019	#Work Orders Completed		Man Hours		Avg Man Hours/WO	
	Mid-Year	Annual	Mid-Year	Annual	Mid-Year	Annual
<b>Maintenance</b>	18	36	77	144	4.3	4.0
Preventive (PM)	9	12	17	39	1.9	3.2
Corrective (CM)	9	24	60	106	6.6	4.4
<b>Service</b>	377	718	4,463	60,376	11.8	84.1
Routine	377	703	4,463	39,905	11.8	56.8
Annual	0	15	0	20,471	0.0	1,364.7
<b>Total</b>	395	754	4,540	60,520	11.5	80.3

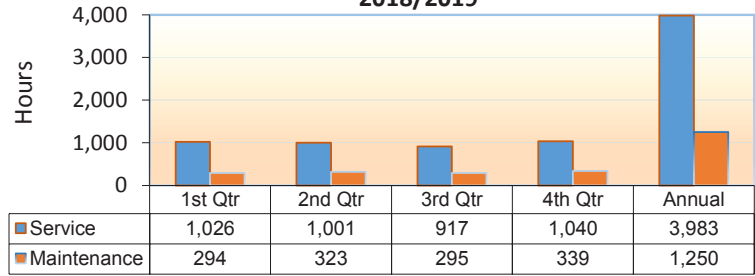
BAS Courtyard



## Accomplishments & Highlights 2018/19

- Upgraded Motor Pool fleet with two 12 passenger vans, 2 mini vans, 1 sedan, and 1 micro bus
- Continued on site emissions testing
- Continued work with TDEC Division of Underground Storage Tanks to ensure tanks in compliance with all regulations
- Updated wash bay equipment to improve cleaning of vehicles
- Implemented new State of TN accident reporting instructions
- Implemented new fuel cards in fleet vehicles acceptable at more locations
- Continued training

**Motor Pool Man Hours  
2018/2019**



**PERFORMANCE MEASURES: Motor Pool**

2018-2019	#Work Orders Completed		Man Hours		Avg Man Hours/WO	
	Mid-Year	Annual	Mid-Year	Annual	Mid-Year	Annual
<b>Maintenance</b>	382	983	616	1,250	1.6	1.3
Preventive (PM)	380	980	614	1,238	1.6	1.3
Corrective (CM)	2	3	2	12	1.0	4.0
<b>Service</b>	394	913	2,027	3,983	5.1	4.4
<b>Total</b>	776	1,896	2,643	5,233	3.4	2.8

## Goals 2019/20

- Continue upgrading Motor Pool fleet vehicles
- Improve Motor Pool fleet reservation process
- Continue to upgrade shop equipment to maximize efficiency
- Continue to work with Accounting to improve billing processes
- Continue training



*Street  
Sweeper  
Repairs*



## Custodial Services

Connie Hagberg Brenda Wunder

## Accomplishments & Highlights 2018/19

- Execution of new contract with Custodial Services contractor
- Worked closely with Custodial Services contract administration to ensure terms firmly upheld
- Coordinated special event/conference cleaning requirements with contractor and in-house Custodial Services
- Completed safety and administrative training sessions



## Goals 2019/20

- Execution of new contract with Custodial Services contractor
- Ensure custodial contractor service is completed according to contract terms
- Inspection of facilities for cleanliness according to Cleaning Standards & Frequencies
- Continue productivity studies of in-house custodial service

E&G Space 2018/2019	Gross Square Feet	Cleanable Square Feet	% Cleanable Square Feet
<b>Facilities Services Department</b>			
In-house	464,964	135,164	6%
Contract Labor	2,383,810	1,709,763	73%
<b>Murphy Center Complex</b>			
In-house	-	-	0%
Contract Labor	595,019	500,282	21%
<b>Total</b>	<b>3,443,793</b>	<b>2,345,209</b>	<b>100%</b>

## Accomplishments & Highlights 2018/19

- Facilitated employee training sessions for FSD work units
- Coordinated topic-specific safety training for other campus departments including Murphy Center, Production Services, Recreation Center, Photography, Printing Services, Student Union and Tennessee Miller Coliseum
- Implemented Safe Colleges training modules for Facilities Services employees

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



## Goals 2019/20

- Continue to review specific cleaning tasks and grounds work, with overall focus on improved campus facility and grounds cleanliness and appearance
- Attend professional development and leadership training

FSD Employees Training Records 2018/2019		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
<b>Central Administration</b>							
-Assistant Vice President	2	2	5	7	2	1	54
-Accounting Information Services	5	5	10	0	1	0.5	0
-Employee Development	1	1	2.5	15.5	1	5	0
<b>Engineering Services</b>							
-Director	1	1	2.1	0	1	0	17
-Center for Energy Efficiency	2	2	12.5	10.5	1	3	8.5
-Work Orders	4	4	8.3	0	1	3	0
-Civil/Environmental Services	5	5	11.5	13.0	2	12	38.5
-Industrial Hygiene & Lab Safety	3	3	5	0	3	20.4	103
-Life Safety & Emergency Management	4	4	6	137.5	1	0	72
-Systems Engineering	1	1	2	0	0	0	0
-Key Shop	4	4	6	0	2	14	0
<b>Building Services</b>	14	15	24	0	15	79.7	0
<b>Construction Administration</b>	5	5	11	0	0	0	0
<b>Construction Renovation</b>	3	3	6.8	82.0	1	4	0
<b>Energy Services</b>	21	21	32	0	21	111.9	0
<b>Grounds Services/Motor Pool</b>	23	23	36.2	0	22	139.7	28
<b>Custodial Services</b>	15	15	30	0	15	105.2	0
<b>TOTALS</b>	<b>113</b>	<b>114</b>	<b>212.1</b>	<b>265.5</b>	<b>89</b>	<b>499.3</b>	<b>320.3</b>

Number of Employees per Total Hours Trained 2018/2019	# Employees (Full-Time)	0 Hrs	1-10 Hrs	11-20 Hrs
<b>Central Administration</b>				
-Assistant Vice President	2		0	1
-Accounting Information Services	5		5	0
-Employee Development	1		0.0	1.0
<b>Engineering Services</b>				
-Director	1		0	1
-Center for Energy Efficiency	2		1	0
-Work Orders	4		4	0
-Civil/Environmental Services	5		4	0.0
-Industrial Hygiene & Lab Safety	3		1	0
-Life Safety & Emergency Management	4		3	0.0
-Systems Engineering	1		1	0
-Key Shop	4		4	0
<b>Building Services</b>	14		13	1
<b>Construction Administration</b>	5		5	0
<b>Construction Renovation</b>	3		1	0.0
<b>Energy Services</b>	21		20	1
<b>Grounds Services/Motor Pool</b>	23		21	0
<b>Custodial Services</b>	15		15	0
<b>TOTALS</b>	<b>113</b>	<b>0</b>	<b>98</b>	<b>5</b>



# 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)
<b>Total</b>	<b>3,334,802</b>	<b>\$186,020,518</b>

MTSU Capital Maintenance

Project Lists per FY Capital Budget Request

2017 - 2018	Priority	Project Name	FY 17/18 Request	Appropriated Funding	Project Status
	1	Life Safety Fire Alarm System Upgrades Phase I	\$ 2,810,000	\$ 2,820,000	In Progress
	2	Steam, Condensate & Manhole Repair/Replacement	\$ 1,900,000	\$ 1,900,000	Complete
	3	KUC Mechanical & HVAC Upgrades	\$ 1,750,000	\$ 1,750,000	In Progress
	4	Several Buildings Roof Replacement	\$ 1,790,000	\$ 1,790,000	In Progress
	5	Several Buildings Elevator Modernizations	\$ 700,000	\$ 700,000	Complete
	6	Domestic Water & Sewer Systems Updates	\$ 900,000	\$ -	
	7	Stark Ag Mechanical & HVAC Upgrades	\$ 1,560,000	\$ -	
	8	Miller Education Center Roof Replacement	\$ 800,000	\$ -	
	9	Several Buildings Plumbing & Restroom Upgrades	\$ 1,500,000	\$ -	
	10	WMOT Tower Electrical Service & HVAC Upgrades	\$ 250,000	\$ -	
	11	Peck Hall Stairwell & Flooring Restoration	\$ 450,000	\$ -	
	12	Maintenance Complex Roofs' Replacement	\$ 850,000	\$ -	
	13	Life Safety Fire Alarm System Upgrades Phase II	\$ 2,000,000	\$ -	
	14	Sidewalk Repair/Replacement	\$ 616,000	\$ -	
	15	Campus Stormwater BMP	\$ 880,000	\$ -	
	Total:		\$ 18,756,000	\$ 8,960,000	
2018 - 2019	Priority	Project Name	FY 18/19 Request	Appropriated Funding	Project Status
	1	Mechanical and Electrical Updates for Data & Communication Centers	\$ 1,212,000	\$ 1,212,000	In Progress
	2	Miller Ed Center Roof Replacement	\$ 1,500,000	\$ 1,500,000	In Progress
	3	Steam/Condensate & Manhole Repair/Replacement Phase II	\$ 2,350,000	\$ 2,350,000	In Progress
	4	Domestic Water & Sewer Systems Updates Phase I	\$ 1,010,000	\$ 1,010,000	In Progress
	5	Maintenance Complex Roofs Replacement	\$ 1,048,000	\$ 1,048,000	In Progress
	6	Several Buildings Smoke Evacuation Repair & Retro-commissioning	\$ 500,000	\$ 500,000	In Progress
	7	Elevator Modernization Phase II	\$ 550,000	\$ 550,000	In Progress
	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	\$ 600,000	Funded
	2	KOM Mechanical, & HVAC	\$ 5,600,000	\$ 1,317,000	Funding reduced
	3	Stark Ag/Police Station Mechanical & HVAC Upgrades	\$ 1,965,000	\$ 1,965,000	Funded
	4	Campus Stormwater BMP Phase I	\$ 785,000	\$ 785,000	Funded
	5	Sidewalk Repair/Replacement Phase I	\$ 800,000	\$ 800,000	Not Funded
	6	Miller Education Center Boiler Replacement	\$ 400,000	\$ 400,000	Funded
	Total:		\$ 10,150,000	\$ 5,867,000	
2020 - 2021	Priority	Project Name	FY 20/21 Request	Appropriated Funding	Project Status
	1	Murphy Center Window Repair/Replacement	\$ 4,600,000.0	\$ -	Funding Requested
	2	Elevator Modernization Phase III	\$ 2,000,000.0	\$ -	Funding Requested
	3	Water & Sewer System Updates Phase II	\$ 490,000.0	\$ -	Funding Requested
	4	Several Buildings Roof Replacements	\$ 950,000.0	\$ -	Funding Requested
	5	Steam/Condensate & Manhole Repair/Replacement Phase III	\$ 1,400,000.0	\$ -	Funding Requested
	6	Sidewalk Repair/Replacement Phase I	\$ 610,000.0	\$ -	Funding Requested
	Total:		\$ 10,050,000	\$ -	

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

Approved Projects	2006-14	2014-15	2015-16	2016-17	2017-18	2018-19	Totals
Green Power Purchase	\$ 1,750,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 50,000	\$ 2,400,000
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
Alternative Fuel- Convert Vehicle to Operate on Natural Gas/Installation of Compressed Gas Station	\$ 8,500						\$ 8,500
Alternative Fuel- Comparing the Pollutant Emissions for Various Alternative Fuels	\$ -				\$ 5,944		\$ 5,944
Alternative Fuel- Development of Flex-Fueled Engine (phase 1 is solar, phase 2 is Hydrogen)	\$ 54,000						\$ 54,000
Alternative Fuel- Hybrid/Alternative Fuel Vehicle Project	\$ 32,250	\$ 15,600					\$ 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	\$ -	\$ 12,045	\$ 11,178		\$ 13,000	\$ 12,600	\$ 48,823
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)	\$ 74,651				\$ 9,500		\$ 84,151
Closed Loop Sediment Filtering System (KUC, LIB, MC, TODD, SAG, VET, LRC, BRAGG, JH, CAB, CKNB, EHS, BDA, BAS, WMB, other Bldgs)	\$ 180,550	\$ 21,000	\$ 9,800			\$ 10,000	\$ 221,350
Creating a More Bicycle Friendly Campus/ covered shelters PH (1)	\$ 88,132				\$ 9,000	\$ 11,500	\$ 108,632
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	\$ 4,000	\$ 2,000		\$ 2,060			\$ 8,060
Energy - Flow Meter; Compact Infrared Cameras for Energy Audits and Solutions	\$ 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 Murphy Center						\$ 9,000	\$ 9,000
Hot/Chilled Water Valve Assessment	\$ 5,000						\$ 5,000
HVAC Controls Replacement (WMB)	\$ 29,950						\$ 29,950
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	\$ 18,002	\$ 9,800	\$ 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+)	\$ 59,337	\$ 42,872	\$ 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

(Continued from page 23)

# MTSU Sustainable Campus Fee, continued



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Approved Projects	2006-14	2014-15	2015-16	2016-17	2017-18	2018-19	Totals
Lab- Upgrade of Instrument (ICP-OES) Donated to MTSU 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
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 for Outside Lamps Across Campus: Old Main Circle, Walnut Grove, Rutherford Lot						\$ 39,412	\$ 39,412
Lighting- Occupancy Sensors Honors Building	\$ 3,372						\$ 3,372
Lighting Projects- LIB Atrium; REC Cardio Room/indoor pool LEDs; BRAGG and PH LEDs; studio lighting BRAGG & LRC; VET; BAS S lobby; LRC 221; WMB Hinton Hall	\$ 113,338		\$ 5,930	\$ 18,377	\$ 38,144		\$ 175,789
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, & other Bldgs						\$ 40,000	\$ 40,000
Permeable Pavers for Sustainable Learning Environment (FH)	\$ 13,050						\$ 13,050
Pleated Filter Projects- SCI, JH, FAIR, BRAGG, CKNB, Horse Science, HOB, WMB, ROTC, COE, HONR, Public Safety	\$ 4,427	\$ 9,654	\$ 5,918				\$ 19,999
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	\$ 3,500	\$ 3,500	\$ 3,500	\$ 3,500	\$ 3,500	\$ 3,500	\$ 21,000
Recycling Supplies for MTSU Recycling Program	\$ 61,000	\$ 5,500	\$ 7,000	\$ 4,000		\$ 3,500	\$ 81,000
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	\$ 3,000	\$ 6,000					\$ 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 Efficient 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	\$ 25,740	\$ 5,400					\$ 31,140
Research- Bring Green Chemistry to Campus (ph-I-VI)(pHVI)	\$ 13,066	\$ 2,100	\$ 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 Controls for Variable Air Volume Boxes - LIB (26 boxes)						\$ 10,560	\$ 10,560
Solar Attic Fans in FH and EHS	\$ 28,932						\$ 28,932
Solar- Big Belly Solar Trash Compactor	\$ -	\$ 12,000	\$ 11,094	\$ 11,789	\$ 11,800		\$ 46,683
Solar- Golf Cart Conversion 1 and 2 (electric to solar)	\$ 12,500	\$ 11,880					\$ 24,380
Solar- Install 8kW System	\$ 81,224						\$ 81,224
Solar- Patio Umbrellas/ Picnic Table	\$ -		\$ 4,500			\$ 13,195	\$ 17,695
Solar- Buy Organic Dyes for Organic Dye Sensitized Solar Cells	\$ 1,100						\$ 1,100
Solar- Boat Project/ Student projects trailer	\$ 6,165	\$ 7,846					\$ 14,011
Solar- WMTS-FM 88.3 Solar Power Supply Project	\$ 31,900						\$ 31,900
Stormwater Control Projects- Rain Gardens, Bioremediation Ponds on MTSU Campus for MS4 Compliance/Maintenance, Bank stabilization, Parking Lot Run-Off, Native Plants	\$ 10,000	\$ 10,000	\$ 18,859	\$ 11,500	\$ 5,000		\$ 55,359
Student Suitabilities Education Initiative	\$ 2,500						\$ 2,500
Sub-Metering for Chilling Plant and MC	\$ 8,000						\$ 8,000
Tree Planting Projects	\$ 3,000	\$ 500	\$ 5,000	\$ 15,500	\$ 12,500	\$ 11,000	\$ 47,500
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 (31)	\$ 3,400	\$ 6,132	\$ 20,053	\$ 31,532	\$ 41,212	\$ 25,200	\$ 127,529
Y-pattern Valve Changeout- COGN	\$ -	\$ 7,600					\$ 7,600
<b>Total:</b>	<b>\$ 3,384,464</b>	<b>\$ 391,885</b>	<b>\$ 351,455</b>	<b>\$ 360,152</b>	<b>\$ 390,598</b>	<b>\$ 356,286</b>	<b>\$ 5,234,840</b>



Solar Picnic Table/ Charging Station



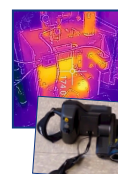
Water Refill Stations



Trees



Tailgating Activities



Infrared Camera to identify repair needs



SCF promotional materials



## *Summary of Services 2018/2019 Annual Report*

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

Linda Hardymon, Editor/Publishing Coordinator

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